

Agenda

Environmental Protection Commission

Tuesday, April 15, 2025

Teleconference: 661-615-8170 PIN: 219 411 781#

Video Conference: meet.google.com/fdw-vjq-wcs

6200 Park Ave, Des Moines, IA, 50321

Walnut Woods Conference Room

Tuesday, April 15, 2025

10:00 AM – EPC Business Meeting

If you are unable to attend the business meeting, comments may be submitted for public record to Alicia Plathe at Alicia.Plathe@dnr.iowa.gov or 6200 Park Ave, Des Moines IA 50321 up to 24 hours prior to the business meeting.

- | | | |
|---|---|------------------------------|
| 1 | Approval of Agenda and Consent Agenda <ul style="list-style-type: none">*11. Contract with the University of Northern Iowa, Iowa Waste Reduction Center-Iowa Waste Exchange*13. Chapter 39, “Requirements for Properly Plugging Abandoned Wells” –Final Rule*17. Chapter 44, “Drinking Water State Revolving Fund” – Final Rule*19. Chapter 53, “Protected Water Sources” – Final Rule*20. Chapter 54, “Water Use Permit Restrictions or Compensation by Permitted Users to Nonregulated Users Due to Well Interference” – Final Rule*21. Chapter 55, “Aquifer Storage and Recovery” – Final Rule*25. Chapter 67, “Standards for the Land Application of Sewage Sludge” – Final Rule*26. Chapter 68, “Commercial Septic Tank Cleaners” – Final Rule*29. Chapter 72, “Criteria for Approval” – Final Rule*30. Chapter 73, “Approval, Construction, Use, Maintenance, Removal, Inspections, and Safety of Dams” – Final Rule*31. Chapter 81, “Drinking Water State Revolving Fund” – Final Rule*32. Chapter 82, “Well Contractor Certification” – Final Rule*33. Chapter 83, “Laboratory Certification” – Final Rule*34. Chapter 90, “Clean Water State Revolving Fund”; Chapter 91, “Criteria for Rating and Ranking Projects for the Water Pollution Control State Revolving Fund”; Chapter 92, “Clean Water State Revolving Fund”; and Chapter 93, “Nonpoint Source Pollution Control Set-Aside Programs” – Final Rules | |
| 2 | Approval of the Minutes | |
| 3 | Monthly Reports | Ed Tormey
(Information) |
| 4 | Director’s Remarks | Kayla Lyon
(Information) |
| 5 | Contract Amendment with Region XII Council of Governments, Inc.-EMS Program | Laurie Rasmus
(Decision) |
| 6 | Contract with Northeast Iowa RC&D-Dry Run Greenbelt Project | Miranda Haes
(Decision) |
| 7 | Contract with Winnebago River Watershed Management Coalition-Development of a Water Quality and Comprehensive Watershed Management Plan | Miranda Haes
(Decision) |
| 8 | Contract with the University of Iowa Office of the State Archaeologist (OSA)-Archeological and/or Architectural History Investigations | Karrie Darnell
(Decision) |

9	Contract with the State Hygienic Laboratory at the University of Iowa-Beach Monitoring Program	Daniel Kendall (Decision)
10	Derelict Building Grant Program-Grant Recommendations	Reid Bermel (Decision)
*11	Contract with the University of Northern Iowa, Iowa Waste Reduction Center-Iowa Waste Exchange	Reid Bermel (Decision)
12	Chapter 38, "Private Water Well Construction Permits"; and Chapter 49, "Private Water Well Construction Permits, Nonpublic Water Supply Wells" – Final Rules	Erik Day (Decision)
*13	Chapter 39, "Requirements for Properly Plugging Abandoned Wells" –Final Rule	Erik Day (Decision)
14	Chapter 40, "Scope of Division, Definitions, Forms, Public Notice and Education, Consumer Confidence Reports, Reporting, and Record Maintenance"; and Chapter 42, "Public Notification, Public Education, Consumer Confidence Reports, Reporting, and Record Maintenance" – Final Rules	Carmily Stone (Decision)
15	Chapter 41, "Water Supplies" – Final Rule	Carmily Stone (Decision)
16	Chapter 43, "Water Supplies—Design and Operation" – Final Rule	Carmily Stone (Decision)
*17	Chapter 44, "Drinking Water State Revolving Fund" – Final Rule	Tara Naber (Decision)
18	Chapter 50, "Withdrawal, Diversion and Storage of Water: Water Rights Allocation"; Chapter 51, "Water Permit or Registration—When Required"; and Chapter 52, "Criteria and Conditions for Authorizing Withdrawal, Diversion and Storage of Water" - Final Rules	Chad Fields (Decision)
*19	Chapter 53, "Protected Water Sources" – Final Rule	Chad Fieldds (Decision)
*20	Chapter 54, "Water Use Permit Restrictions or Compensation by Permitted Users to Nonregulated Users Due to Well Interference" – Final Rule	Chad Fields (Decision)
*21	Chapter 55, "Aquifer Storage and Recovery" – Final Rule	Chad Fields (Decision)
22	Chapter 60, "Scope of Title, Definitions, Wastewater Construction Permits, and Operation Permits"; Chapter 64, "Wastewater Construction and Operation Permits," and Chapter 66, "Pesticide Application to Waters" – Final Rules	Courtney Cswercko (Decision)
23	Chapter 62, "Effluent and Pretreatment Standards: Other Effluent Limitations or Prohibitions" – Final Rule	Courtney Cswercko (Decision)
24	Chapter 63, "Monitoring, Analytical and Reporting Requirements" – Final Rule	Courtney Cswercko (Decision)
*25	Chapter 67, "Standards for the Land Application of Sewage Sludge" – Final Rule	Courtney Cswercko (Decision)
*26	Chapter 68, "Commercial Septic Tank Cleaners" – Final Rule	Courtney Cswercko (Decision)
27	Chapter 70, "Scope of Title-Definitions-Forms-Rules of Practice" – Final Rule	Jonathan Garton (Decision)
28	Chapter 71, "Floodplain or Floodway Development – When Approval is Required"; Chapter 75, "Management of Specific Flood Plain Areas"; and Chapter 76, "Federal Water Resources Projects" – Final Rules	Jonathan Garton (Decision)
*29	Chapter 72, "Criteria for Approval" – Final Rule	Jonathan Garton (Decision)
*30	Chapter 73, "Approval, Construction, Use, Maintenance, Removal, Inspections, and Safety of Dams" – Final Rule	Jonathan Garton (Decision)
*31	Chapter 81, "Drinking Water State Revolving Fund" – Final Rule	Laurie Sharp (Decision)
*32	Chapter 82, "Well Contractor Certification" – Final Rule	Erik Day (Decision)
*33	Chapter 83, "Laboratory Certification" – Final Rule	Kathleen Lee

*34	Chapter 90, "Clean Water State Revolving Fund"; Chapter 91, "Criteria for Rating and Ranking Projects for the Water Pollution Control State Revolving Fund"; Chapter 92, "Clean Water State Revolving Fund"; and Chapter 93, "Nonpoint Source Pollution Control Set-Aside Programs" – Final Rules	(Decision) Theresa Enright (Decision)
35	General Discussion	
36	Upcoming Meetings	
	<ul style="list-style-type: none"> May 20-21, Winneshiek County Tuesday, June 17, Des Moines 	

For details on the EPC meeting schedule, visit <http://www.iowadnr.gov/About-DNR/Boards-Commissions>

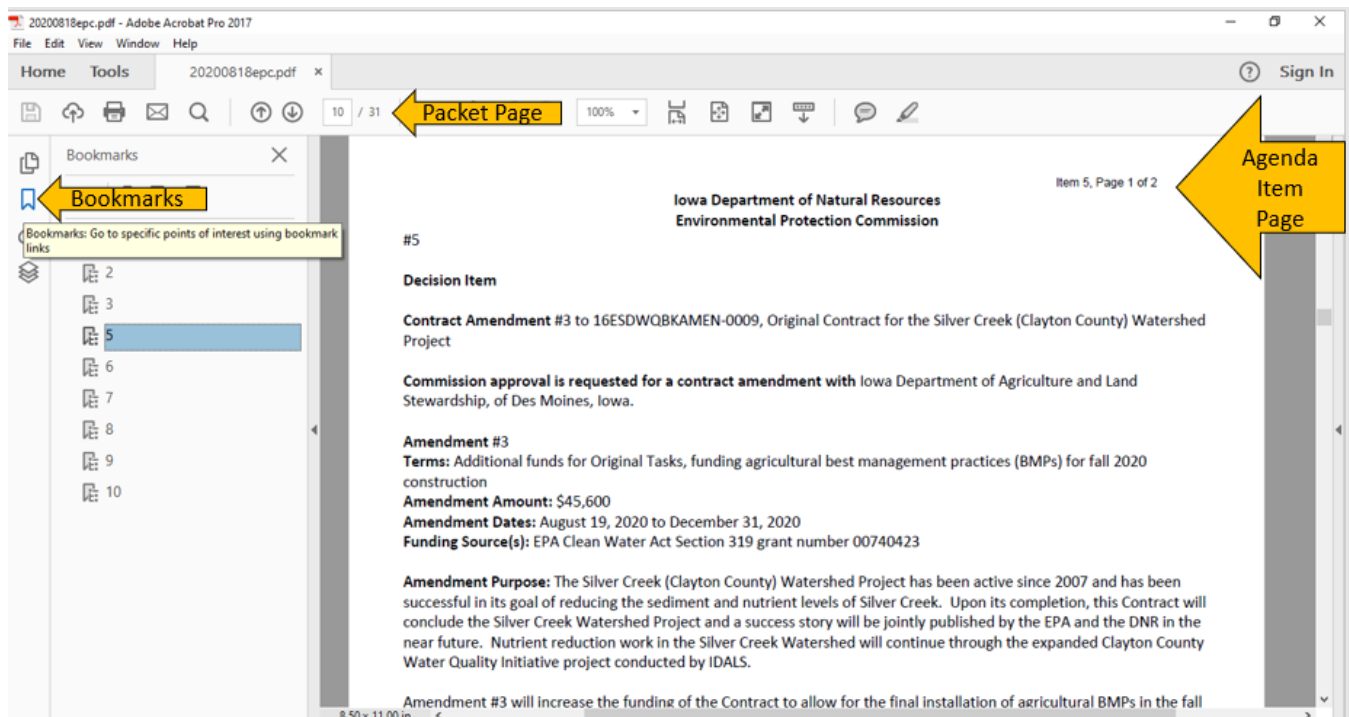
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¹Comments during the public participation period regarding proposed rules or notices of intended action are not included in the official comments for that rule package unless they are submitted as required in the Notice of Intended Action.

Any person with special requirements such as those related to mobility or hearing impairments who wishes to participate in the public meeting should promptly contact the DNR or ADA Coordinator at 515-725-8200, Relay Iowa TTY Service 800-735-7942, or Webmaster@dnr.iowa.gov to advise of specific needs.

Utilize bookmarks to transition between agenda items or progress forwards and backwards in the packet page by page with the Packet Page number on the agenda.

The upper right-hand corner will indicate the Agenda Item Number and the page of the agenda item.



**MINUTES OF THE
ENVIRONMENTAL PROTECTION COMMISSION
MEETING**

March 18, 2025

**Video Teleconference
and
6200 Park Ave.**

Approved by the Commission **TBD**

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Meeting Minutes

CALL TO ORDER

The meeting of the Environmental Protection Commission (Commission or EPC) was called to order by Chairperson Mark Stutsman at 10:00 am on March 18, 2025 via video/teleconference attendees.

COMMISSIONERS PRESENT

Patricia Foley
Roger Zylstra
Lisa Gochenour
Kyle Tobiason
Harold Hommes
Mark Stutsman
Rebecca Dostal
Jim Christensen

COMMISSIONERS ABSENT

Amy Echard

APPROVAL OF AGENDA

Motion was made by Patricia Foley to approve the item as presented. Seconded by Jim Christensen.

The Chairperson asked for the Commissioners to approve the agenda by saying aye. There were no nay votes.

APPROVED AS PRESENTED

APPROVAL OF MINUTES

Motion was made by Roger Zylstra to approve the item as presented. Seconded by Lisa Gochenour.

The Chairperson asked for the Commissioners to approve the Minutes of the February 19, 2025 meeting by saying aye. There were no nay votes.

APPROVED AS PRESENTED

MONTHLY REPORTS

- Division Administrator Ed Tormey responded to questions regarding the status of the federal budget and how it is affecting the Department. Mr. Tormey noted that the Department expects standard funding of the Performance Partnership Grant as part of the continuing resolution. Mr. Tormey also mentioned that the Department funnels smaller grants from EPA to other entities and that DNR continues to watch any changes that may affect grant funding.
- Director Lyon responded to questions about the Iowa Legislative session, sharing that the Department has been monitoring a lot of legislation, including the Department's Air Quality Cleanup bill and Hazardous Condition Remediation bill.

INFORMATION

DIRECTOR'S REMARKS

- Director Lyon reported that she recently gave two budget presentations to the Iowa Legislature. One presentation was given to the Infrastructure Committee and the other was given to the Agriculture and Natural Resources Committee in the House. Director Lyon will share both presentations with the Commissioners.

- Subject to Senate approval, Director Lyon announced that two Commissioners have been appointed to join the EPC in May: Jason Ballard and Dawn Refsell.

SOLID WASTE ALTERNATIVES PROGRAM-CONTRACT RECOMMENDATIONS

Tom Anderson requested Commission approval for a contract recommendation with Central Furniture Rescue for strategic planning for growth and expansion of their landfill diversion program.

Public Comments – None

Written Comments – None

Motion was made by Patricia Foley to approve the items as presented. Seconded by Harold Hommes.

Roger Zylstra-aye, Harold Hommes-aye, Lisa Gochenour-aye, Rebecca Dostal-aye, Kyle Tobiason-aye, Jim Christensen-aye, Patricia Foley-aye, Amy Echard-absent, Mark Stutsman-aye. Motion passes.

APPROVED AS PRESENTED

AIR QUALITY-FISCAL YEAR 2026 DRAFT BUDGET REVIEW

Wendy Walker presented the FY 2026 draft Air Quality Budget to the Commission as an information item.

Public Comments – None

Written Comments – None

INFORMATION

CONTRACT WITH THE UNIVERSITY OF IOWA ON BEHALF OF THE STATE HYGIENIC LAB (SHL)-ANALYTICAL SERVICES FOR CWA SECTION 319 AND THE TMDL MONITORING PROGRAM

Jason Palmer requested Commission approval for a service contract with SHL for analytical services for the Section 319 Program and the TMDL Monitoring Program.

Public Comments – None

Written Comments – None

Motion was made by Harold Hommes to approve the items as presented. Seconded by Jim Christensen.

Roger Zylstra-aye, Harold Hommes-aye, Lisa Gochenour-aye, Rebecca Dostal-aye, Kyle Tobiason-aye, Jim Christensen-aye, Patricia Foley-aye, Amy Echard-absent, Mark Stutsman-aye. Motion passes.

APPROVED AS PRESENTED

CONTRACT WITH THE UNIVERSITY OF IOWA-ANALYTICAL SERVICES FOR THE SHALLOW LAKES PROGRAM

Jackie Gautsch requested Commission approval for a service contract with SHL for analytical services for the Shallow Lakes Program.

Public Comments – None

Written Comments – None

Motion was made by Rebecca Dostal to approve the items as presented. Seconded by Roger Zylstra.

Roger Zylstra-aye, Harold Hommes-aye, Lisa Gochenour-aye, Rebecca Dostal-aye, Kyle Tobiason-aye, Jim Christensen-aye, Patricia Foley-aye, Amy Echard-absent, Mark Stutsman-aye. Motion passes.

APPROVED AS PRESENTED

CONTRACT WITH POLK COUNTY-NONPOINT SOURCE EDUCATION CAMPAIGN, OUTREACH COORDINATOR

Kyle Ament requested Commission approval for contract with Polk County for the Nonpoint Source Education Campaign. Mr. Ament noted that the campaign helps fulfill a pair of goals within Iowa's Nonpoint Source Plan. Mr. Ament discussed the benefits of adding organic matter to soil to help with water infiltration on urban living landscape sites.

Public Comments – None**Written Comments – None**

Motion was made by Harold Hommes to approve the items as presented. Seconded by Jim Christensen.

Roger Zylstra-aye, Harold Hommes-aye, Lisa Gochenour-aye, Rebecca Dostal-aye, Kyle Tobiason-aye, Jim Christensen-abstain, Patricia Foley-aye, Amy Echard-absent, Mark Stutsman-aye. Motion passes.

APPROVED AS PRESENTED

CLEAN WATER AND DRINKING WATER STATE REVOLVING LOAN FUND-FY 2025 INTENDED USE PLANS FOURTH QUARTER UPDATE

Theresa Enright requested Commission approval of the Clean Water and Drinking Water SRF fourth quarter Intended Use Plans.

Public Comments – None**Written Comments – None**

Motion was made by Harold Hommes to approve the items as presented. Seconded by Roger Zylstra.

Roger Zylstra-aye, Harold Hommes-aye, Lisa Gochenour-aye, Rebecca Dostal-aye, Kyle Tobiason-aye, Jim Christensen-aye, Patricia Foley-aye, Amy Echard-absent, Mark Stutsman-aye. Motion passes.

APPROVED AS PRESENTED

GENERAL DISCUSSION

- Chair Stutsman requested an update on his request for the Department to share success regarding the reduction in manure spills in Iowa. Mr. Tormey noted that the Department plans to send out a Spring Manure Application press release which will include some of the success the Department has had over the years on preventing manure releases.
- Commissioners had a discussion regarding Avian Influenza in Iowa.
- Alicia Plathe updated Commissioners on the April and May meeting details.

ADJOURN

Chairperson Mark Stutsman adjourned the Environmental Protection Commission meeting at 11:10 am on March 18, 2025.

ADJOURNED

**Monthly Waiver Report
March 2025**

Item #	DNR Reviewer	Facility/City	Program	Subject	Decision	Date	Agency
1	Matt Phoenix	Des Moines Water Works	Water Supply Construction (WC)	A waiver from requirements to utilize day tanks for chemical storage, and instead feed chemicals directly from bulk storage tanks being monitored by a SCADA system.	Approved	3.3.25	25wcw034
2	Julie Duke	Bertch Cabinet LLC	AQ	Request to start construction, pour concrete and erect 3 new baghouses, prior to permit issuance	Approved	3.3.25	25aqw035
3	Nate Tatar	United States Gypsum Co - Sperry	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.6.25	25aqw036
4	Nate Tatar	Nestle USA Beverage Division	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.7.25	25aqw037
5	Michael Hermsen	Ajinomoto - AHI	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.10.25	25aqw038
6	Michael Hermsen	Ajinomoto - AFI	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.10.25	25aqw039
7	Tara Naber, PE	Le Mars Water Department	Water Supply Construction (WC)	Request to construct new deep well with diesel generator fuel storage within 100 feet as part of WSE project W2024-0152 for PWSID IA 7540174. Using well constructed with 2 full depth casings, generator inside a building, and a flood alarm system.	Approved	3.7.25	25wcw040
8	Keith Wilken	Central Transport 199617852	Underground Storage Tank Section	Per 567 IAC Chapter 135.15(1)"e", an underground storage tank system that has not been properly temporarily closed for more than 12 months must be permanently closed. The waiver requests allowance of return to service requirements in lieu of closure.	Approved	3.4.25	25utw041
9	Mark Fields	ADM Terminal Services - Camanche	AQ	Request to postpone March 19, 2020 Opacity test due date 180-days on Rail unloading due to little operation and no rail cars to complete test at capacity.	Approved	1.29.25	25aqw042
10	Mark Fields	Homeland Energy	AQ	Request to postpone 2024/2025 wintertime testing on EP S40 and S41 until winter of 2025/2026 due to estimation of construction project completion in Fall 2025.	Denied	1.29.25	25aqw043
11	John Curtin	Ember Recovery Campus	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement for an emergency diesel engine.	Approved	3.18.25	25aqw044
12	Nate Tatar	Clow Valve Company - Machine Shop	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.18.25	25aqw045
13	Karen Kuhn	John Deere Foundry	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.21.25	25aqw046
14	Karen Kuhn	John Deere Foundry	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.21.25	25aqw047
15	Danjin Zulic	Energy Manufacturing Company	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3-24-25	25aqw048
16	Jasmine Bootman	Maintainer	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.25.25	25aqw049
17	Jaeyoung Park	Denver STP	CP (Wastewater)	Co. is requesting variance from Iowa Wastewater Facilities Design Standards--12.5.3 (Slope) for the installation of a 8-inch gravity sewer with a slope of less than 0.40 %.	Approved	3.27.25	25cpw050
18	Jasmine Bootman	Mathy	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.26.25	25aqw051
19	Jasmine Bootman	Mathy Construction	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.26.25	25aqw052
20	Nate Tatar	Pioneer Hi-Bred International-Dallas Center	Air Quality Construction Permits	Waiver of Initial Stack Test Requirement.	Approved	3.26.25	25aqw053

**Iowa Department of Natural Resources
Environmental Protection Commission**

#5

Decision Item

Contract 21ESDLQBLRASMU-002 Amendment #3 to the original contract with Region XII Council of Governments, Inc.

Commission approval is requested for a contract amendment with Region XII Council of Governments, Inc. of Carroll, IA.

Amendment #3 to the original contract Terms:

Amendment Amount: \$39,000.00

Amendment Dates: July 1, 2025 to June 30, 2026

Funding Source(s): G550 (solid waste account of the Groundwater Protection Fund)

Amendment Purpose: The purpose of the Amendment is to continue professional auditing services for the Environmental Management System (EMS) program through FY2026.

Original Contract Purpose: The purpose of the Contract was to secure professional auditing services for the EMS program. Iowa Code chapter 455J establishes criteria for EMS, a voluntary alternative to Solid Waste Comprehensive Planning for designated planning/service areas. In addition to integrated solid waste management, EMS participants actively pursue continuous improvement in six environmental component areas. EMS participants are required to submit an annual report to document compliance with the requirements of Iowa Code section 455J.3. DNR has adopted by rule [Iowa Administrative Code 567-111.6(7)] an external audit process, to be completed by an independent third party, for determining EMS participants' compliance with applicable statute and administrative rules. Region XII Council of Governments, Inc. performs these audit duties.

Original Selection Process Summary: DNR followed the Formal Competitive Bidding process for Professional Services. DNR received proposals from three potential contractors. The Region XII Council of Governments, Inc.'s proposal was selected, having both the highest technical score and lowest cost.

Contract History:

Original Contract Terms: Amount \$70,000.00; Timeframe: July 1, 2021 to June 30, 2023; Purpose: External auditing services for EMS program.

Amendment #1 Terms: Amount: \$37,500.00; Timeframe: July 1, 2023 to June 30, 2024; Purpose: Continuation of external auditing services for EMS program.

Amendment #2 Terms: Amount: \$37,500.00; Timeframe: July 1, 2024 to June 30, 2025; Purpose: Continuation of external auditing services for EMS program.

Amendment #3 Terms: Amount: \$39,000.00; Timeframe: July 1, 2025 to June 30, 2026; Purpose: Continuation of external auditing services for EMS program.

Laurie Rasmus, Program Planner 3, Land Quality Bureau
Environmental Services Division
April 15, 2025

Attachment #1: Contract Amendment Statement of Work

Deliverable	Task Milestone Date	Amount of compensation allotted to Task	Invoice Due
<p>Original Task 1 is revised as follows:</p> <p>Task 1. External Auditing Services for Iowa Solid Waste EMS program.</p> <p>Contractor must provide external auditing services for the DNR EMS program in accordance with Iowa Code Chapter 455J and 567 Iowa Administrative Code Chapter 111 while following these steps and parameters.</p> <p>Overview:</p> <ul style="list-style-type: none">• Conduct an external audit of each EMS participant each fiscal year. In FY2026, five participants are scheduled to undergo a full onsite audit and eight participants are each to undergo a partial audit. EMS participants who receive an audit finding of partially meeting requirements or not meeting requirements for an element from the previous year are to be audited in the same element regardless of full/partial schedules.• A full audit entails all 10 EMS elements while a partial audit is of no more than 7 EMS elements that are selected by DNR. Typically, full audits are six hours in duration while partial audits are four to five hours in duration.• Typically, full audits are conducted in-person at the EMS participant's facilities while partial audits are conducted in-person at a neutral, central location between the audit team and EMS participant. DNR may determine that some or all in-person audits may instead be held virtually in order to adhere to public health/safety measures or for another reason. For purposes of this Contract, it is assumed that all audits are to be held in-person and Contractor is to include travel costs for two persons/audit. Each audit report is to be finalized and submitted to DNR within 6 weeks of the corresponding audit. <p>Contractor Training:</p> <ul style="list-style-type: none">• Participate in and as necessary, travel to, Iowa Solid Waste EMS auditor training and other DNR sponsored annual EMS events including the Summer Workshop, Fall Conference and on-demand training opportunities.• Gain a working knowledge of Dropbox file hosting service, EMS External Audit Procedure, Audit Checklist, Assessment (Audit) Guide, Audit Reporting Form and other tools/documents provided by DNR.• Consider additional training opportunities recommended by DNR. <p>Planning:</p> <ul style="list-style-type: none">• Coordinate scheduling and arrangements for each audit with attendance by EMS participant and audit team, consisting of no less than two staff members of Contractor and no less	<p>Individual subtask milestone dates will be determined by DNR in consultation with the Contractor but must be fully completed prior to the end of the Contract term.</p>	<p>Not to exceed \$39,000 including travel costs to be reimbursed up to the current rates for the travel period according to the Iowa Department of Administrative Services In-State Travel Reimbursement Guidelines.</p>	<p>Contractor shall invoice DNR on a monthly basis.</p>

<p>than one DNR staff. Secure meeting place or platform to accommodate DNR's preference for in-person or virtual meeting.</p> <ul style="list-style-type: none"> • Prepare an agenda for each audit and provide a list of documents and items that each EMS auditee is to provide to the audit team prior to the corresponding audit. Take steps to ensure that EMS auditee provides specified documentation in a timely manner. <p>Audit and Audit Report:</p> <ul style="list-style-type: none"> • Conduct one Audit of each EMS participant each fiscal year for the Contract period. • Following each audit, prepare a draft audit report and as necessary, consult with DNR. Submit each audit draft report to DNR for feedback prior to finalization. Upon report finalization, submit report to DNR. <p>Administration:</p> <ul style="list-style-type: none"> • Meet with DNR Staff as needed to plan and evaluate activities and deliverables. • Submit quarterly reports on activities associated with Contract. • Provide monthly billing of invoices. 			
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**Iowa Department of Natural Resources
Environmental Protection Commission**

#6

Decision Item

Commission approval is requested for a contract with Resource Conservation and Development for Northeast Iowa, Inc. (Northeast Iowa RC&D)

Contract Terms:

Amount: Not to exceed \$175,000

Dates: May 1, 2025 to June 30, 2027

Funding Source(s): US Environmental Protection Agency, EPA Farmer to Farmer Grant to DNR for the Iowa Farm Community Subaward Program

Contract Purpose: The purpose of this Contract is to award EPA Farmer to Farmer Grant funds via subaward to Northeast Iowa RC&D to complete their proposed project titled: Dry Run Greenbelt Water Quality Improvement Project (Project). This Contract will provide Northeast Iowa RC&D funding to work with partners identified in Exhibit A including Winneshiek County Conservation Board (CCB), the City of Decorah, US Fish and Wildlife Service, and others to implement the Project.

Contract History: A grant application solicitation was announced in March of 2023. An interagency review team consisting of Iowa Finance Authority, IDALS, and DNR representatives reviewed the applications and found that all of them met the stated intent and requirements of the EPA grant. Northeast Iowa RC&D was awarded funds because it has a documented history of working with federal, state, and local grant funding to accomplish projects within the realm of water quality, flood reduction, and education and outreach. In addition, Northeast Iowa RC&D demonstrated strong local partnerships in its application. These partners have additional grant project experience and will provide support to Northeast Iowa RC&D in implementing the Project.

Lead Entity: Northeast Iowa RC&D - Decorah - Winneshiek County

Primary Local Partner Entity #1: Winneshiek County Conservation Board

Primary Local Partner Entity #2: City of Decorah

Primary Local Partner Entity #3: US Fish and Wildlife Service

Total Match from All Partners: \$353,000 (Cash)

Contract Summary: The goal of the Project is to reduce flash flooding in the Dry Run Watershed and increase flood resiliency within the Decorah community. This Project will work directly with the Winneshiek CCB to implement flood detention structures that will protect residents from the impacts of flooding and protect residents and their source water. The proposed Project will serve as a flood resilience demonstration project for other rural communities. The Project will achieve these goals by 1) implementing a stormwater wetland and 5 flood detention structures that will capture, slow and filter runoff from heavy rain events; and 2) by effectively communicating and educating residents on the importance of flood mitigation and resilience.

Contractor Proposal: The proposed structures of the Project are a combination of one stormwater wetland and 5 dry detention structures that function to capture a volume of runoff and temporarily detain (withhold) that volume so it can be released slowly. The detention structures will not retain a significant permanent pool of water between runoff events. The main goal of the proposed detention systems is to reduce the peak discharge rate of flow entering Dry Run Creek. By reducing the peak discharge rate, excess nutrients and pollutants are given time to settle out of the runoff water before leaving the structure and emptying into Dry Run Creek. Northeast Iowa RC&D is also proposing the installation of one stormwater wetland. Stormwater wetlands are constructed wetland systems used for stormwater management. Stormwater wetlands consist of a combination of shallow marsh areas, open water, and semi-wet areas above the permanent water surface. Both Project types will improve water quality in the Dry Run Creek Watershed by reducing nutrient and pollutant loading as well as reducing flooding.

Project Budget

Task 1. Identify Eligible Best Management Practices for the Project	Not to exceed \$107,500
Task 2. Develop Community Building and Engagement Strategy	Not to exceed \$3,000
Task 3. Progress Documentation	Not to exceed \$47,000
Task 4. Final Report	Not to exceed \$17,500
Total amount of DNR funding	Not to exceed \$175,000

Miranda Haes, Northeast Iowa Basin Coordinator, Water Quality Bureau
Environmental Services Division
April 22, 2025

**Iowa Department of Natural Resources
Environmental Protection Commission**

#7

Decision Item

Commission approval is requested for a contract with the Winnebago River Watershed Management Coalition (WRWMC), a registered 28E Agreement intergovernmental entity of the State of Iowa. The fiscal agent for this contract will be the City of Mason City.

Contract Terms:

Amount: Not to exceed \$125,000

Dates: May 1, 2025 to October 31, 2026.

Funding Source(s): Clean Water Act (CWA) Section 604(b) Planning Grant Number 00746629.

Statutory Authority: Funds are administered by DNR under statutory authority granted by Iowa Code section 455B.103 and under 11 IAC 118.4.

Background:

A competitive grant offering for funding assistance for watershed planning took place in January 2025. The deadline for applications was January 17, 2025. The total available funding amount was \$125,000. Applicants were limited to the pool of thirty active Watershed Management Authorities. The DNR received a sole application from the WRWMC requesting \$125,000. After review, DNR determined that the application was eligible to receive the grant funding.

Contract Purpose: The purpose of this Contract is to designate CWA Section 604(b) grant funding to support the creation of a Water Quality and Comprehensive Watershed Management Plan (Watershed Plan) for WRWMC. This Contract will carry out the goals of WRWMC's watershed planning proposal submitted in its grant application.

Contract History:

- None

Proposal Summary: The WRWMC will develop the Watershed Plan. The planning process will reference and help fulfill goals and objectives from the Iowa Nonpoint Source Management Plan (2024) and incorporate Iowa Smart Planning Principles.

The WRWMC's main objective through this Contract is to secure and hire an experienced watershed-planning consultant to produce the Watershed Plan. Once produced and with guidance from its consultant, the WRWMC's executive committee will produce a Priority Environmental Project Action Plan (Project Plan) to submit to the City of Mason City. Priority projects detailed in the Project Plan will commence upon board approval and funding of the Project Plan.

The Watershed Plan will also specifically address concerns identified through the planning process.

Links to the Nonpoint Source Management Plan:

Goal 1: Improving Iowa's Surface Water and Groundwater Quality

Goal 2: Improving Waters that Affect Public Health

Goal 3: Improving Iowa's Waters for Native Wildlife and Fish, and Recreation

Goal 4: Reducing Excess Nutrient Delivery to Iowa Waters

WRWMC's Proposal Statement is to: "Assess and reduce flooding risks; repair, improve, and enhance the quality, appearance, and recreational use of the Winnebago River Watershed by encouraging municipal, public, and private support and participation through education, conservation practices, and volunteering."

Budget:

Task Milestone Date	Amount of Compensation Allotted to Task
Task 1: Develop the Plan	Not to exceed \$100,000
Task 2: Regular Status Updates	Not to exceed \$12,500
Task 3: Final Narrative Report	Not to exceed \$12,500
Total	Not to exceed \$125,000

Match:

Cash Match (Local Funds): \$8,000

In-Kind Match: \$31,000

Partnerships:

County governmental entities from Cerro Gordo, Floyd, Hancock, Winnebago, and Worth Counties

City governmental entities from Clear Lake, Forest City, Hanlontown, Leland, Mason City

Other agencies or entities: Iowa Department of Agriculture and Land Stewardship, USDA-NRCS, Iowa State University, Ducks Unlimited, Association for the Preservation of Clear Lake, North Iowa Council of Governments

Miranda Haes, Water Quality Bureau

Environmental Services Division

April 22, 2025

Iowa Department of Natural Resources
Environmental Protection Commission

ITEM #8

DECISION

Contract with THE UNIVERSITY OF IOWA

Recommendation:

Commission approval is requested for a Contract with the University of Iowa Office of the State Archaeologist (OSA) for the Iowa Department of Natural Resources.

Contract Terms:

Amount: Not to exceed \$1,000,000

Dates: May 1, 2025 to June 30, 2028

Funding Source(s): State Revolving Fund (Iowa Code Section 455B.291-455B.300). The source of funding for this Contract shall be outlined in each Work Order and will vary among allowable funding sources depending on the program in DNR being served by the Work Order.

Statutory Authority: Funds are administered by DNR statutory authority granted by Iowa Code Section 455B.103.

Contract Background: The DNR provides environmental and cultural review services for public water supplies and wastewater treatment works that finance projects through the State Revolving Fund (SRF) programs. As part of these obligations, DNR must, at times, conduct investigations into the historical and archeological resources that may be impacted by DNR's construction and development activities in these areas.

Contract Purpose: The parties propose to enter into this Contract to retain the Contractor to provide investigative services. As the DNR identifies a need for archeological and/or architectural history investigations for its programs, the DNR will issue a Work Order Request to the Contractor to provide services with a specific Scope of Work. Each Scope of Work will be selected from the Contractor's list of services including those represented at the following location: <https://archaeology.uiowa.edu/services>.

Contractor Selection Process:

DNR is allowed to contract with the University of Iowa pursuant to Iowa Code section 455B.103(3).

Contract History:

An existing contract with OSA for the same services was executed in April 1, 2023 for \$1,250,000 for a 15-month period (23ESDWQBSKDARN-0001). We are proposing the new Contract amount of \$1,000,000 for a three-year period.

Karrie Darnell, Environmental Specialist Senior, Water Quality Bureau
Environmental Services Division
April 2025

Iowa Department of Natural Resources
Environmental Protection Commission

ITEM #9

DECISION

Contract with THE UNIVERSITY OF IOWA

Recommendation:

Commission approval is requested for a service contract with the State Hygienic Laboratory at the University of Iowa.

Contract Terms:

Amount: Not to exceed \$36,288.00

Dates: May 1, 2025, to October 31, 2025

Funding Source(s): Environment First Appropriation

Statutory Authority: Iowa Code section 455B.103(3)

Contract Background: Since 2006, the DNR Beach Monitoring Program has sampled and reported indicator bacteria concentrations at swimming areas throughout the state. Routine monitoring takes place from the week before Memorial Day through Labor Day. The beach monitoring project fits into the mission of the DNR by ensuring high quality recreational opportunities within the state park system and by assessing and reporting on the quality of surface waters in the State.

Contract Purpose: The parties propose to enter into this Contract to retain the Contractor to provide assistance to DNR in the analysis of indicator bacteria samples collected by the DNR and county/city participants as part of the beach monitoring program. Indicator bacteria samples are collected weekly during the monitoring period at up to 40 state park beaches and as many as 35 city and county park beaches.

Contractor Selection Process:

DNR is allowed to contract with the University of Iowa pursuant to Iowa Code section 455B.103(3).

Contract History:

The DNR has entered into contracts with the State Hygienic Laboratory at the University of Iowa on a regular basis since 2014. The purpose of the contracts with University of Iowa is to have the State Hygienic Laboratory provide the DNR with indicator bacteria analysis at state, county, and city-owned beaches. This information is used to inform the public of current beach warning status. Additionally, the DNR intends to utilize the information gathered and analyzed in this Contract in partial fulfillment of sections 303d and 305b of the Clean Water Act including biennial reports on the status of lake water quality, impaired water listing, and total maximum daily load reports. The most recent contracts have been the following:

Contract #1: Timeframe: May 1, 2020, to October 31, 2020; Amount \$27,839.16; Amendment: None

Contract #2: Timeframe: May 1, 2021, to October 31, 2021; Amount \$84,956.58; Amendment: None

Contract #3: Timeframe: May 1, 2022, to October 31, 2022; Amount \$27,697.68; Amendment: None

Contract #4: Timeframe: May 1, 2023, to October 31, 2023; Amount \$30,748.41; Amendment: None

Contract #5: Timeframe: May 1, 2024, to October 31, 2024; Amount \$31,598.10; Amendment: None

Daniel Kendall, Environmental Specialist Senior, Water Quality Bureau
Environmental Services Division
April 15, 2025

5.1 Statement of Work. Contractor shall perform the following Tasks. Contractor shall complete its obligations under this Contract by the Task Milestone Dates set out in the following table.

Obligation	Task Milestone Date
<p>Task 1: Analysis of water samples from state park beaches for indicator bacteria Description:</p> <ul style="list-style-type: none"> a) Laboratory analysis shall be completed for <i>Escherichia coli</i> (see Table 4 for a parameter list) on surface water samples collected at up to 40 state park beaches by DNR staff (see Table 1 for a list of these beaches). Samples shall be run at a 1:10 dilution. b) All samples submitted for analysis through this Task shall be coded as IDNR BEACH. c) SHL shall provide sample containers and chain of custody forms for water samples to be collected by DNR staff during the Contract period. 	<p>Contractor shall conduct sample analysis, including sample set-up, on a weekly basis beginning no later than May 19, 2025, and continuing for 15 weeks.</p> <p>Contractor shall make completed data and results available to DNR via the SHL OpenELIS web portal not later than 2 hours after completion of sample analysis.</p>
<p>Task 2: Analysis of QA/QC samples Description:</p> <ul style="list-style-type: none"> a) Laboratory analysis shall be completed for <i>Escherichia coli</i> (see Table 4 for a parameter list) on all QA/QC samples (field blanks and splits) submitted to SHL by DNR as part of the state beach monitoring program. Samples shall be run at a 1:10 dilution. b) All samples submitted for analysis through this Task shall be coded as IDNR BEACH QAQC. c) SHL shall provide sample containers and chain of custody forms for water samples to be collected by DNR staff during the Contract period. 	<p>Contractor shall conduct sample analysis, including sample set-up, on a weekly basis beginning no later than May 19, 2025, and continuing for 15 weeks.</p> <p>Contractor shall make completed data and results available to DNR via the SHL OpenELIS web portal not later than 2 hours after completion of sample analysis.</p>
<p>Task 3: Assemble and ship bacteria sample kits to city/county beaches Description:</p> <ul style="list-style-type: none"> a) SHL shall ship coolers, cold packs, bottles, and chain of custody forms to all beaches participating in the city/county beach monitoring program (see Table 2 for a list of these beaches). b) SHL shall provide return shipping labels to meet required holding times. 	<p>Contractor shall complete the first shipment of this task no later than May 12, 2025.</p> <p>Contractor shall continue to ship supplies outlined in this task on an as needed basis with the last shipment sent no later than August 25, 2025.</p>
<p>Task 4: Return shipping and analysis of city/county beach bacteria samples Description:</p> <ul style="list-style-type: none"> a) Laboratory analysis shall be completed for <i>Escherichia coli</i> (see Table 5 for a parameter list) on surface water samples collected by DNR, or collected and shipped to SHL from up to 35 city/county park beaches (see Table 2 for a list of these beaches). Return shipping by local city/county staff will allow for samples to arrive at SHL and be analyzed within the 30-hour sample holding time. Samples shall be run at a 1:10 dilution. b) Samples received outside of the 30-hour sample holding time shall not be analyzed. SHL shall email the DNR Contract Manager by end of business on date of sample receipt when city/county beach samples are not analyzed. c) SHL shall email the DNR Contract Manager to notify when city/county beach samples are received on a Thursday or Friday. Samples received on a 	<p>SHL shall complete this Task weekly, beginning week of May 19, 2025, and continuing for 15 weeks.</p> <p>SHL shall make completed results available to DNR via the SHL OpenELIS web portal not later than close of business on Thursday of each week of the monitoring season (May 19 - Sept 1, 2025).</p>

<p>Thursday or Friday and within 30-hour sample holding time shall be analyzed.</p> <p>d) All samples submitted for analysis through this Task shall be coded as CO BEACH.</p>	
<p>Task 5: Shipping Materials replacement and repair as needed</p> <p>Description: Contractor shall purchase shipping material and supplies and shall repair existing shipping containers as needed for the Tasks listed above. DNR Shall be notified in advance of required purchases by email for approval.</p>	<p>This task shall be performed on an as needed basis and no later than August 25, 2025.</p>
<p>Task 6: Special Projects</p> <p>Description:</p> <ul style="list-style-type: none"> a) SHL shall complete additional analyses from state park or county beaches for indicator bacteria (see Table 4 for a parameter list) as mutually agreed upon in writing by SHL and DNR. Samples shall be run at a 1:10 dilution. b) All samples submitted for analysis through this task shall be coded as IDNR BEACH SPECIAL. c) SHL shall provide sample containers and chain of custody forms for water samples to be collected by DNR staff during the Contract period. 	<p>Contractor shall conduct sample analysis, including sample set-up, on a as needed basis beginning no later than May 19, 2025, and continuing for 15 weeks.</p> <p>Contractor shall make completed data and results available to DNR via the SHL OpenELIS web portal not later than 2 hours after completion of sample analysis.</p>
<p>Task 7: Data Transfer</p> <p>Description: SHL shall make the data generated pursuant to this Contract available to DNR electronically through the State Hygienic Laboratory OpenELIS database web portal. Data shall be available for download by DNR staff in a mutually agreeable format. The available sample information shall include the STORET station identification number (aka AQuIA SiteID), which will be provided by DNR for all station locations. Data shall be retrievable via the web portal by DNR staff.</p> <p>Analytical reports may be retrieved electronically by DNR staff having the appropriate authorization. SHL shall assist DNR staff in obtaining appropriate authorization when requested.</p> <p>When accessing electronic data, the following information is required:</p> <ul style="list-style-type: none"> • SHL OpenELIS/Telcor Organization ID number: 7002 (IDNR BEACH MONITORING) • SHL Project Code: (IDNR BEACH; IDNR BEACH QAQC; CO BEACH; IDNR BEACH SPECIAL) 	<p>SHL shall make completed data and results available to DNR via the SHL OpenELIS web portal not later than 15 calendar days after the end of each month.</p> <p>If SHL determines that extra time for analysis should be allowed in specific cases, then a written notification shall be made to the DNR Project Manager, stating that analytical results from a sample will be delayed and the reasons for the delay. This notification shall occur as soon as possible but not later than 15 days following receipt of the sample.</p>

7.1 Budget & Submission of Invoices. The budget and submission of invoices for this Contract shall be as follows:

Task*	Total Amount of compensation allotted to Task** (Variable *** Payment)	Task Milestone Date	Invoice Due No Later Than:
Task 1. Analysis of water samples from state park beaches for indicator bacteria (see	No greater than \$12,600.00, at the per sample costs contained in Table 3.	<p>Contractor shall conduct sample analysis including sample set-up, on a weekly basis beginning no later than May 19, 2025, and continuing for 15 weeks.</p> <p>Contractor shall make completed data and results available to DNR via the SHL OpenELIS web portal not</p>	Monthly, no later than thirty (30) days following the end of each month.

Table 4 for a parameter list)		later than 2 hours after completion of sample analysis.	
Task 2: Analysis of QA/QC samples (see Table 4 for a parameter list)	No greater than \$1,680.00, at the per sample costs contained in Table 3.	Contractor shall conduct sample analysis including sample set-up, on a weekly basis beginning no later than May 19, 2025, and continuing for 15 weeks. Contractor shall make completed data and results available to DNR via the SHL OpenELIS web portal not later than 2 hours after completion of sample analysis.	Monthly, no later than thirty (30) days following the end of each month.
Task 3: Assemble and ship bacteria sample kits to city/county beaches	\$ 0	Contractor shall complete the first shipment of this task no later than May 12, 2025. Contractor shall continue to ship supplies outlined in this task on an as needed basis and no later than August 25, 2025.	N/A
Task 4: Return shipping and analysis of city/county beach bacteria samples (see Table 5 for a parameter list)	No greater than \$16,905.00, at the per sample costs contained in Table 3.	SHL shall complete this task weekly, beginning week of May 19, 2025, and continuing for 15 weeks. SHL shall make completed results available to DNR via the SHL OpenELIS web portal not later than close of business on Thursday of each week of the monitoring season (May 19 – September 1, 2025).	Monthly, no later than thirty (30) days following the end of each month.
Task 5: Shipping Materials replacement and repair as needed	No greater than \$2,100.00	This task shall be performed on an as needed basis and no later than August 25, 2025.	Monthly, no later than thirty (30) days following the end of each month.
Task 6: Special Projects (see Table 4 for a parameter list)	No greater than \$315.00, at the per sample costs contained in Table 3.	Contractor shall conduct sample analysis including sample set-up, on an as needed basis beginning no later than May 19, 2025, and continuing for 15 weeks. Contractor shall make completed data and results available to DNR via the SHL OpenELIS web portal not later than 2 hours after completion of sample analysis.	Monthly, no later than thirty (30) days following the end of each month.
Task 7: Data Transfer	N/A	SHL shall make completed data and results available to DNR via the SHL OpenELIS web portal not later than 15 calendar days after the end of each month. If SHL determines that extra time for analysis should be allowed in specific cases, then a written notification shall be made to the DNR Project Manager, stating that analytical results from a sample will be delayed and the reasons for the delay. This notification shall occur as soon as possible but not later than 15 days following receipt of the sample.	N/A
Sub-totals	\$33,600.00		
Facilities and Administrative Costs @ 8%	\$2,688.00		

Total	Not to exceed \$36,288.00		
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*Payment for completion of Tasks where specific payment is allotted shall be dependent upon the timely completion of corresponding items required by Tasks where no specific payment is allotted.

**Payment also shall conform to any pricing Tables contained in this Contract and referenced in the Budget Table above; or to the relevant SHL Pricing Table. Tables contained in this Contract shall take precedence, in the event of any inconsistency.

***Variable payment” shall mean that the number of specific analyses per Task may vary, and the Contractor shall be paid only for the number of specific analyses performed per Task. “Fixed payment” shall mean that the Contractor shall be paid an amount that is fixed in the Contract, with no variations based on analyses per Task actually performed.

Table 1 – List of 40 State Park Beaches (Collected by DNR)

<u>Beach Name</u>	<u>Park</u>	<u>AQuIA SiteID</u>
Backbone Beach	Backbone State Park	21280001
Beed's Lake Beach	Beed's Lake State Park	21350001
Big Creek Beach	Big Creek State Park	21770001
Black Hawk Campground Beach	Black Hawk State Park	21810002
Denison Beach	Black Hawk State Park	21810001
Brushy Creek Beach	Brushy Creek State Recreation Area	21940001
Clear Lake Beach	Clear Lake State Park	21170001
Crandall's Beach	Crandall's Beach	21300005
Emerson Bay Beach	Emerson Bay State Recreation Area	21300004
Geode Beach	Geode State Park	21440001
George Wyth Beach	George Wyth Memorial State Park	21070001
Green Valley Beach	Green Valley State Park	21880001
Gull Point Beach	Gull Point State Park	21300001
Honey Creek Resort Beach	Honey Creek Resort State Park	21040001
Lacey-Keosauqua Beach	Lacey-Keosauqua State Park	21890001
Orleans Beach	Orleans Beach Area	21300007
Lake Ahquabi Beach	Lake Ahquabi State Park	21910001
Lake Anita Beach	Lake Anita State Park	21150001
Lake Darling Beach	Lake Darling State Park	21920001
Lake Macbride Beach	Lake Macbride State Park	21520001
Lake Manawa Beach	Lake Manawa State Park	21780001
Lake of Three Fires Beach	Lake of Three Fires St. Park	21870001
Lake Wapello Beach	Lake Wapello State Park	21260001
Lewis and Clark (Blue Lake) Beach	Lewis & Clark State Park	21670001
Marble Beach	Marble Beach State Rec Area	14000380
McIntosh Woods Beach	McIntosh Woods State Park	21170002
Nine Eagles Beach	Nine Eagles State Park	21270001
Pike's Point Beach	Pike's Point State Park	21300002
Lower Pine Lake Beach	Pine Lake State Park	21420001
Pleasant Creek Lake Beach	Pleasant Creek State Recreation Area	21570001
Prairie Rose Beach	Prairie Rose State Park	21830001
Red Haw Beach	Red Haw State Park	21590001
Rock Creek Beach	Rock Creek State Park	21500001
Springbrook Beach	Springbrook State Park	21390001
Triboji Beach	Triboji Beach	21300003
North Twin Lake East Beach	Twin Lakes State Park	21130002
North Twin Lake West Beach	Twin Lakes State Park	21130001
Union Grove Beach	Union Grove State Park	21860001
Viking Lake Beach	Viking Lake State Park	21690001
Bob White Beach	Bob White State Park	21930001

Table 2 – 35 City/County Park Beaches (Collected by City/County Personnel)

<u>Site</u>	<u>Contact</u>	<u>Street Address/P.O.Box</u>	<u>City</u>	<u>Zip Code</u>	<u>AQuiA SiteID</u>
Mormon Trail Beach	Dominic Johnson, Adair County Conservation Board	705 NE 6th Street	Greenfield	50849	21010001
Hannen Lake Park	Camryn Grubic, Benton County Conservation	5718 20th Ave. Dr.	Vinton	52349	14000158
Rodgers Lake Beach	Ed Hach, Benton County Conservation	5718 20th Ave. Dr.	Vinton	52349	14000236
Don Williams Beach	Chelsie Wilson, Boone County Conservation Director	610 H Ave	Ogden	50212	21080001
Sturchler Pit Beach	Greg Johnson, Buena Vista County Conservation	377 440th Street	Peterson	51047	21110002
Gabrielson Park Beach	Greg Johnson, Buena Vista County Conservation	377 440th Street	Peterson	51047	21110001
Malone Park	Kyle Redmond, Clinton County Conservation Board	3942 291st Street	Camanche	52730	21230001
Little River Recreation Area	Kimberly Miller, Decatur County Conservation	20401 NW Little River Rd	Leon	50144	21270002
Big Hollow Recreation Area	Tanner Grimm, Des Moines County Conservation	11627 Starrs Cave Park Rd	Burlington	52601	21290001
Willow Lake Recreation Area	Byron Vennink, Harrison County Conservation Board	2725 Easton Trail	Woodbine	51579	21430001
Lake Iowa Park	Phil DeJarnatt, Iowa County Conservation	2550 G Ave	Ladora	52251	21480001
Fairfield Waterworks Park	Steve Redinger, The Fairfield Waterworks	700 Waterworks Rd	Fairfield	52556	21510001
Pollmiller Park	Jack Davis, Lee County Conservation	2652 Hwy 61	Montrose	52639	21560001
Deep Lakes Park Beach (Formerly: Muscatine Island)	Ryne Brimeyer, Muscatine CCB	3300 Cedar Street	Muscatine	52761	14000136
Gray's Lake Park	Julie Hempel, Des Moines Parks and Recreation Dept.	1551 E Martin Luther King Jr. Pkwy	Des Moines	50317	21770003
Big Sioux Recreation Area	Jessica Van Oort, Sioux County Conservation	4051 Cherry Ave	Hawarden	51023	21840001
Sandy Hollow Recreation Area	Jessica Van Oort, Sioux County Conservation	3395 400th St	Sioux Center	51250	14000120
Three Mile Lake beach	Michael Hilger, Union County Conservation Board	1577 Creamery Rd	Afton	50830	14000186
Lake Cornelia	Jeremiah Feltz, Wright County Conservation Board	1768 O'Brien Ave	Clarion	50525	21990001
Lake Pahoja	Kyle Ciesielski, Lyon County Conservation Board	1831 Buchanan Ave	Inwood	51240	21600001
Treman Park Beach	Curtis Vanderheiden, Calhoun County Conservation	1228 High St	Rockwell City	50579	21130003
Central Park Lake Beach	John Klein, Jones County Conservation	12515 Central Park Road	Center Junction	52212	21530001
Hickory Grove Park	Story County Conservation, Sara Carmichael, Jake Smith	Jake Smith 67464 250th Street	Colo	50056	21850001
Peterson Park Beach	Story County Conservation - Sara Carmichael, Russ Dewall	Russ DeWall 56461 180th St.	Ames	50010	21850002

Browns Lake Beach	Josh VanVoorst, Woodbury County Conservation Board	722 Bigelow Park Road	Salix	51052	21970002
Little Sioux Park Beach	Nathan Silfies	1746 O'Brien Ave	Correctionville	51016	21970001
West Lake Park	J.B. Graham, Scott County Conservation	14910 110th Avenue	Davenport	52804	21820001
Kent Park Lake	Charles Bray, Johnson County Conservation	2048 Hwy 6 NW	Oxford	52322	22520005
Alwaysis Park*	Kim Woltman, City of Storm Lake	433 Vilas Rd	Storm Lake	50588	21110004
Bel Air Beach*	Kim Woltman, City of Storm Lake	433 Vilas Rd	Storm Lake	50588	21110005
Casino Beach*	Kim Woltman, City of Storm Lake	433 Vilas Rd	Storm Lake	50588	21110006
Chautauqua Park*	Kim Woltman, City of Storm Lake	433 Vilas Rd	Storm Lake	50588	21110007
Frank Starr Beach*	Kim Woltman, City of Storm Lake	433 Vilas Rd	Storm Lake	50588	14000121
Edson Park*	Kim Woltman, City of Storm Lake	433 Vilas Rd	Storm Lake	50588	21110008
Old Water Plant*	Kim Woltman, City of Storm Lake	433 Vilas Rd	Storm Lake	50588	21110009

***Indicates DNR will drop off to SHL**

Table 3 – Breakdown of Costs

<u>Task</u>	<u>Number of Samples</u>	<u>Cost per Sample</u>	<u>Total Cost</u>
Task 1: Analysis of water samples from state park beaches for indicator bacteria	600 (40 state park beaches × 15 weeks)	600 @ \$21.00	\$12,600.00
Task 2: Analysis of QA/QC samples	80 (4 field replicate per week × 15 weeks=60) + (5 equipment blank × 4 (every 4 weeks)=20)	80 @ \$21.00	\$1,680.00
Task 3: Assemble and ship bacteria sample kits to city/county beaches	Outgoing shipments	\$0.00	\$0.00
Task 4: Return shipping and analysis of city/county beach bacteria samples			
Task 4a: Analysis of city/county beach bacteria samples (shipped)	420 (28 beaches × 15 weeks)	420 @ \$21.00	\$8,820.00
	Ground return shipping	420 @ \$14.00	\$5,880.00
Task 4b: Analysis of city/county beach bacteria samples (delivered by DNR)	105 (7 beaches × 15 weeks)	105 @ \$21.00	\$2,205.00
Task 5: Shipping Materials replacement and repair as needed			\$2100.00
Task 6: Special Projects	Up to 15 samples	15 @ \$21.00	\$315.00
Task 7: Data Transfer			\$0.00
Subtotal			\$33,600.00
Facilities and Administrative Costs @ 8%			\$2,688.00
Contract Total			\$36,288.00

Table 4. Water quality sampling parameters, frequency and fee for Tasks 1, 2, and 5.

SHL Bottle # ¹	Parameter	Analytical Method	Reporting Limit ²	Holding Time	Sample Handling	Test Fee	# of Samples	Total Fee
81	<i>E. coli</i> in water ³	SM 9223 B	<10 MPN/100ml ⁴	CWA 8 hours	Sodium thiosulfate, On ice	\$21.00	695	\$14,595.00
¹ Final type and quantity of bottles will be specified in the bottle order and on the test request form (TRF).								
² DNR requires that the analytical method with the lowest reporting limit be used if the parameter is non-detect.								
³ This parameter will be run at a 1:10 dilution.								
⁴ Result may be reported as greater than the maximum measurable value (e. g. >24,000).								

Table 5. Water quality sampling parameters, frequency and fee for Task 4.

SHL Bottle # ¹	Parameter	Analytical Method	Reporting Limit ²	Holding Time	Sample Handling	Test Fee	# of Samples	Total Fee
81	<i>E. coli</i> in water ³	SM 9223 B	<10 MPN/100ml ⁴	30 hours	Sodium thiosulfate, On ice	\$21.00	525	\$11,025.00
¹ Final type and quantity of bottles will be specified in the bottle order and on the test request form (TRF).								
² DNR requires that the analytical method with the lowest reporting limit be used if the parameter is non-detect.								
³ This parameter will be run at a 1:10 dilution.								
⁴ Result may be reported as greater than the maximum measurable value (e. g. >24,000).								

Iowa Department of Natural Resources Environmental Protection Commission

ITEM

#10

DECISION

TOPIC

Derelict Building Grant Program – Grant Recommendations

The Derelict Building Grant Program is a program established by 2011 Legislation for purposes of providing funding assistance to eligible communities to address abandoned buildings by promoting public and environmental health through asbestos abatement and landfill diversion with deconstruction of building components for reuse and recycling. Funding for this program shall not exceed \$400,000.00 per Iowa Code section 455E.11(2)(a)(1)(d).

Eligible communities include a city with a population of 5,000 or fewer. Eligible costs for program assistance include but are not limited to asbestos and other hazardous material abatement and removal, the recovery of recyclable or reusable material through the selective deconstruction of abandoned buildings, and reimbursement for purchased recycled content materials used in the renovation of buildings.

The Department received fifteen applications, requesting \$405,715.35 in financial assistance, for consideration during the February 2025 round of funding. Fourteen projects were selected for funding with a total recommended award amount not to exceed \$400,000.00, based on all deconstruction achieving maximum landfill diversion. Eight of the fourteen projects award recommendations exceed \$25,000.00 and are presented to the Commission for approval.

The review committee is comprised of five people representing: DNR Land Quality Bureau, Iowa Economic Development Authority, Iowa Society of Solid Waste Operations, Iowa Recycling Association, and Keep Iowa Beautiful.

A description of the recommended projects, and the amount and type of funding assistance is attached.

At this time, the Department is requesting Commission approval to enter into agreements with selected applicants whose recommended awards are in excess of \$25,000.00.

Reid Bermel, Environmental Specialist Senior, Land Quality Bureau
Environmental Services Division
April 15, 2025

Attachment

a) Recommended Project Descriptions

DERELICT BUILDING GRANT PROGRAM

PROPOSAL RECOMMENDATIONS

The following provides a description of each project for which Commission approval is requested.

City of Bayard - 313 Main Street

Award: \$32,043.75

Cash Match: \$10,681.25

Contact: Clint Fichter

Total Project Cost: \$42,725.00

frontdesk@smallcity.org

712-307-6461

Description:

The City of Bayard has targeted the use of these grant funds for the following:

- Deconstruction of the existing structure with concrete, brick, and metal separated for reuse and recycling.

The city plans to expand the city library lot with more green space.

City of Chester

Award: \$31,919.85

Cash Match: \$7,004.95

Contact: Jason Passmore

Total Project Cost: \$38,924.80

Jason@howard-county.com

563-547-3434

Description:

The City of Chester has targeted the use of these grant funds toward the following:

- Asbestos Inspection to identify any regulated Asbestos Containing Materials (ACM).
- Abatement and proper disposal of any identified.
- Deconstruction of the existing structures with concrete and metal separated for reuse and recycling.

The fire department will utilize this space for additional trainings and parking.

City of Klemme

Award: \$61,933.50

Cash Match: \$51,933.50

Contact: Colleen Rout

Total Project Cost: \$113,867.00

klemmecityhall@comm1net.net

641-587-2018

Description:

The City of Klemme has targeted the use of Derelict Building grant funds toward the following:

- Abatement and proper disposal of any identified ACM.

The city plans to complete this project in phases over two years. The first is ACM abatement this year, then Deconstruction the following. The end goal is new residential lots for tax-based housing.

City of Lehigh

Award: \$40,187.50

Cash Match: \$18,812.50

Contact: Theresa Grossnickle

Total Project Cost: \$59,000.00

col@lvcta.com

515-359-2311

Description:

The City of Lehigh has targeted the use of these grant funds toward the following:

- Abatement and proper disposal of any identified ACM.
- Deconstruction of the existing structures with concrete and metal separated for reuse and recycling.

The City's plan is to have a farmer's market or flea market site, since the location is in a flood plan and limited options for redevelopment.

City of Richland – 123 N. Richland St.

Award: \$28,750.00

Cash Match: \$6,250.00

Contact: Sarah Claeys

Total Project Cost: \$35,000.00

Cityofrichland@iowatelecom.net

319-456-2511

Description:

The City of Richland has targeted the use of these grant funds toward the following:

- Abatement and proper disposal of any identified ACM.
- Deconstruction of the existing structure with concrete, brick, and metal separated for reuse and recycling.

The city plans to redevelop the site for a community center.

City of Roland

Award: \$30,750.00

Cash Match: \$10,250.00

Contact: Dalton Johnston

Total Project Cost: \$41,000.00

Publicworks.roland@gmail.com

515-215-2861

Description:

The City of Roland has targeted the use of these grant funds toward the following:

- Deconstruction of the existing structure with concrete, brick, metal, and wood separated for reuse and recycling.

The City's plan is to redevelop the site with a Small Business Incubator to allow an avenue for new business to test their ideas before moving into larger, more permanent spaces.

City of Sheffield

Award: \$40,806.65

Cash Match: \$54,953.35

Total Project Cost: \$95,760.00

Contact: Ashley Francis

clerk@sheffieldiowa.com

641-892-4718

Description:

The City of Sheffield has targeted the use of these grant funds toward the following:

- Abatement and proper disposal of any identified ACM.
- Deconstruction of the existing structure with brick and metal separated for reuse and recycling.

The City's plan is to sell it to the neighbor supper club that would allow them to expand with outdoor seating/patio.

City of Shelby

Award: \$30,000.00

Cash Match: \$11,500.00

Total Project Cost: \$41,500.00

Contact: Chris Martin

Smu2@walnutel.net

712-544-2404

Description:

The City of Shelby has targeted the use of these grant funds toward the following:

- Deconstruction of the existing structure with concrete, metal, and wood separated for reuse and recycling.

The City's plan is to have the site redeveloped with a hotel.

Iowa Department of Natural Resources
Environmental Protection Commission

ITEM ***11**

**indicates proposed consent item*

For Decision

Contract with the UNIVERSITY OF NORTHERN IOWA, Iowa Waste Reduction Center (IWRC)

Recommendation:

Commission review is requested for a service contract with the University of Northern Iowa, Iowa Waste Reduction Center (IWRC), at Cedar Falls, Iowa.

Contract Terms:

Amount: Not to exceed \$30,000

Dates: July 1, 2025 to June 30, 2026.

Funding Source(s): the Groundwater Protection Fund, Solid Waste Account where monies are received from the tonnage fee levied under Iowa Code section 455B.310.

Statutory Authority: Iowa Code section 455E.11(2)(a)(2)(c)

Contract Background: Iowa Code section 455E.11(2)(a)(2)(c) Groundwater Protection Fund, says that the DNR shall expend not more than thirty thousand dollars of the moneys appropriated under that division of the subparagraph to contract with the IWRC at the University of Northern Iowa to provide training and other technical services to the Iowa Waste Exchange program.

Contract Purpose: The parties propose to enter into this Contract to retain the IWRC to provide technical assistance and training to the Iowa Waste Exchange program and its representatives.

Contractor Selection Process:

The selection process in this case is not competitive, because the contract with IWRC is mandated by Iowa Code section 455E.11(2)(a)(2)(c), as stated above in the Contract Background.

Contract History:

The DNR, as directed by Iowa Code section 455E.11(2)(a)(2)(c), has entered into a contract with the IWRC on an annual basis every year since 1990. The purpose of the contract with the IWRC is to provide technical assistance and training to the Iowa Waste Exchange program and its representatives. The seven most recent contracts have been:

Contract #1: Timeframe: 7/2018-6/2019; Amount \$30,000

Contract #2: Timeframe: 7/2019-6/2020; Amount \$30,000

Contract #3: Timeframe: 7/2020-6/2021; Amount \$30,000

Contract #4: Timeframe: 7/2021-6/2022; Amount \$30,000

Contract #5: Timeframe: 7/2022-6/2023; Amount \$30,000

Contract #6: Timeframe: 7/2023-6/2024; Amount \$30,000

Contract #7: Timeframe: 7/2024-6/2025; Amount \$30,000

Reid Bermel, Environmental Specialist Senior, Land Quality Bureau
Environmental Services Division
April 15, 2025

Attachment: Contract Statement of Work

STATEMENT OF WORK

The DNR's statutorily directed objective is for the Iowa Waste Reduction Center (IWRC) to provide training and other technical assistance to the Iowa Waste Exchange (IWE) program. The services included below may be amended at any time by the DNR or the IWRC upon prior approval by the DNR.

The IWRC will provide the following tangible products by the Task Milestone Dates set out in the following table:

Deliverables	Task Milestone Dates
Task 1: Assist with, and support, IWE Handbook updates as necessary, and when requested by the DNR or by IWE Resource Specialists.	On-going, over the course of the Contract
Task 2: Coordinate with the DNR and IWE Resource Specialists to provide K-12 schools with food waste audits and cafeteria waste sorts as requested. The IWRC will also coordinate with the DNR in the publishing of data and results from these joint assistance activities.	When requested
Task 3: Provide technical assistance regarding hazardous materials/hazardous waste, and complete joint IWRC/IWE visits when requested. The IWRC will also refer clients to IWE Resource Specialists for assistance when applicable.	On-going, over the course of the Contract
Task 4: IWE marketing assistance: <ul style="list-style-type: none">• Assist with development of marketing plans and/or strategies• Collaboratively brainstorm ideas to meet IWE Resource Specialists' marketing goals• Develop contact lists for outreach• Promotion of IWE events, services, and materials through IWRC marketing outlets (website, newsletter, social media)	On-going, over the course of the Contract
Task 5: Coordinate with the DNR and IWE Resource Specialists to assist with hosting, and support of developing, quarterly IWE meetings as requested, with IWRC training at one meeting on technical resources.	On-going, over the course of the Contract
Task 6: Provide regulatory guidance and training to IWE representatives on the management of solid and universal hazardous waste, as well as inform new IWE Resource Specialists on IWRC resources.	On-going, over the course of the Contract
Task 7: Provide training opportunities to IWE representatives to increase their professional development.	On-going, over the course of the Contract
Task 8: Submit monthly reports that have a narrative discussion of the delivery of the assistance services outlined in Tasks 1 through 7. Monthly reports will also describe any other activities relevant to the DNR and/or IWE Resource Specialists.	Within 3 weeks of the end of each month

CATEGORY	DNR FUNDS
PERSONNEL COSTS	\$27,777.78
INDIRECT COST CHARGES (8% of Personnel Costs)	\$2,222.22
TOTAL PROJECT COSTS	\$30,000.00

**Iowa Department of Natural Resources
Environmental Protection Commission**

Decision Item

12. Chapter 38, “Private Water Well Construction Permits”; and Chapter 49, “Private Water Well Construction Permits, Nonpublic Water Supply Wells” – Final Rules

The Commission is requested to approve the Adopted and Filed rules to rescind and replace Chapter 49 and to rescind and reserve Chapter 38. This rulemaking is the result of the Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 49 is the consolidation of former Chapters 38 and 49. This merger eliminates redundancies, inconsistencies, unnecessary language, and duplicative language. Additionally, combining Chapter 38 with Chapter 49 allows for consistency and efficiencies in the rules related to nonpublic water well permitting and construction programs. New Chapter 49 establishes a schedule and required procedures for private well construction permitting and construction, including standards for private well construction as authorized in Iowa Code sections 455B.172, 455B.187, 455B.190, and 455B.190A. A private well construction permitting program and private well construction standards protect the groundwater of the state by ensuring proper well construction, which in turn protects the use of Iowa’s groundwater resources now and in the future.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8627C. Two public hearings were held on February 3, 2025 and February 4, 2025.

Changes from NOIA: Two public comments were received during the public comment period. There were seven attendees from the public that joined the public hearings. This final rule is nearly identical to the NOIA. A minor modification was made to the language referencing the definitions, references, and abbreviations to be consistent with Chapters 39 and 82, and a minor correction was made to one other reference. Minor modifications were made to rule 49.20 to account for variable frequency drives and pressure tank settings in order to allow for variability based on manufacturer’s recommendations. The superscript language in Table 1 specifying a separation distance exemption between private wells and industries was clarified to prevent confusion; the actual separation distance exemption (200 ft instead of 400 ft) was not changed.

Effective Date of Final Rule: June 18, 2025

Erik Day, Geologist 3
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapters 38, 49 – Final rules

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds and reserves Chapter 38, “Private Water Well Construction Permits,” and rescinds Chapter 49, “Nonpublic Water Supply Wells,” and adopts a new Chapter 49, “Nonpublic Water Wells—Permits and Construction,” Iowa Administrative Code.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3) and 455B.173(9).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.172, 455B.187, 455B.190 and 455B.190A.

Purpose and Summary

New Chapter 49 establishes a schedule and required procedures for private well construction permitting and construction, including standards for private well construction as authorized in Iowa Code sections 455B.172, 455B.187, 455B.190, and 455B.190A. A private well construction permitting program and private well construction standards protect the groundwater of the state by ensuring proper well construction, which in turn protects the use of Iowa’s groundwater resources now and in the future. This chapter has been reviewed and edited consistent with Executive Order 10 (January 10, 2023). The edits to this chapter are minor and include eliminating redundancies, inconsistencies, unnecessary language, and duplicative language.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8627C**.

Two public hearings were held. The first public hearing was held on February 3, 2025 from 10:00 AM to 11:00 AM virtually via Zoom. The second public hearing was held on February 4, 2025 from 2:00 PM to 3:00 PM virtually via Zoom.

Seven people attended the first public hearing, and none provided comment. Three people attended the second public hearing, and none provided comment. One public comment was received during the public comment period. No changes were made based on that comment.

A few minor changes have been made to the NOIA. A minor modification was made to the language referencing the definitions, references, and abbreviations to be consistent with Chapters 39 and 82, and a minor correction was made to one other reference. Minor modifications were made to rule 49.20 to account for variable frequency drives and pressure tank settings in order to allow for variability based on manufacturer's recommendations. The superscript language in Table 1 specifying a separation distance exemption between private wells and industries was clarified to prevent confusion; the actual separation distance exemption (200 ft instead of 400 ft) was not changed.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind and reserve **567—Chapter 38**.

ITEM 2. Rescind 567—Chapter 49 and adopt the following **new** chapter in lieu thereof:

CHAPTER 49

NONPUBLIC WATER WELLS—PERMITS AND CONSTRUCTION

567—49.1(455B) Purpose. The purpose of this chapter is to protect the public health by protecting groundwater supplies from contamination by establishing uniform minimum standards and methods for nonpublic water supply well construction and reconstruction. This chapter provides minimum standards for installation of well pumps or equipment employed in withdrawing or obtaining water from a well for any use, except monitoring wells, including safeguards as may be necessary to protect from contamination the water in an aquifer and water being pumped from a well.

567—49.2(455B) Definitions, references, and abbreviations. In addition to the definitions in 567—Chapter 39, 567—Chapter 40, and 567—Chapter 82; the references and abbreviations in 567—Chapter 40; and Iowa Code sections 455B.101, 455B.171, 455B.190 and 455B.190A, the following definitions and abbreviations shall apply to this chapter:

49.2(1) Definitions.

“Administrative authority” means the county board of supervisors or its designee.

“Agreement” means a signed document between the department and the county board of supervisors with which the department delegates the authority to issue private well drilling permits to the county board of supervisors or its designee.

“Anaerobic lagoon” means an impoundment, the primary function of which is to store and stabilize organic wastes. The impoundment is designed to receive wastes on a regular basis, and the design waste loading rates are such that the predominant biological activity in the impoundment will be anaerobic. An anaerobic lagoon does not include:

1. A runoff control basin that collects and stores only precipitation-induced runoff from an open feedlot feeding operation; or
2. A waste slurry storage basin that receives waste discharges from confinement feeding operations and that is designed for complete removal of accumulated wastes from the basin at least semiannually; or
3. Any anaerobic treatment system that includes collection and treatment facilities for all off-gases.

“Annular space” means the open space between the well hole excavation and the well casing.

“Cesspool” means a covered excavation, lined or unlined, into which wastes from toilets or urinals are discharged for disposal. Cesspools are not an approved method of sewage disposal.

“Compensation for well interference” means payment to the owner of a nonregulated well for damages caused by a lowered water level in the well due to withdrawal of water for a permitted use.

“Confinement building” means a building used in conjunction with a confinement feeding operation to house animals.

“Conforming well” means a well that complies with the standards of this chapter, including wells properly plugged according to 567—Chapter 39.

“Contiguous” means any number of parcels of land that physically touch one another, including tracts of land separated by roads, railroads or streams, except that for the purpose of reporting on other existing wells on the property, the radius of a contiguous piece of land shall be limited to one mile from the site of the newly constructed well.

“Contractor” is defined in Iowa Code section 455B.171(3). For the purposes of this chapter, the term also includes a corporation, partnership, sole proprietorship, association or any other business entity, and any employee or officer of the entity.

“Established grade” means the permanent point of contact of the ground to artificial surface with the casing or curbing of the well.

“GHEX” means ground heat exchange.

“GHEX loop borehole construction” means the borehole excavation, emplacement of the closed loop, grouting of the loop, and installation of the heat exchange fluid.

“GHEX loop boreholes” means ground heat exchange borehole(s); ground-coupled, closed-loop, heat exchange borehole(s); or any excavation 20 feet or greater in depth that is augered, bored, cored, drilled, driven, dug, jetted, washed, or is otherwise constructed into which a closed loop used for ground heat exchange is installed. A GHEX loop borehole is not a water supply well.

“GHEX loop system services” means any construction, installation, rehabilitation, repair, or plugging of the various components of ground heat exchange systems, including the borehole, piping, grout, and heat-exchange fluid.

“Health-related problem” means well water that contains any contaminant at a level that exceeds MCLs (maximum contaminant levels) or HALs (health advisory levels) as adopted by the department.

“Heavy drilling fluid” means water used for drilling that, because of the natural clay content of the borehole or by addition of bentonite grout, has a solids density of at least 10 percent by weight or a mud weight of at least 9.25 lbs/gal.

“Inactive well” means a well that is not currently in use and is capped or sealed to prevent the entrance of contaminants into the well but is in such a condition that it can be activated to produce a safe supply of water.

“Landowner” means an individual, trust, partnership, corporation, government or governmental subdivision or agency, association, or other legal entity that has legal or equitable title to a piece of land.

“Landowner’s agent” means a person who acts for or in place of the landowner by authority from the landowner.

“Low permeability material” means a geological unit of unconsolidated material (usually clay or till) or bedrock (usually shale) that is all or partially saturated and having permeability low enough (10^{-7} cm/sec) to give water in the aquifer artesian head.

“Nonpublic water supply well” means a well that does not supply a public water supply system (PWS).

“Nonregulated well” means a well used to supply water for a nonregulated use (a use of water less than 25,000 gallons per day that is not required to have a water use permit).

“Open feedlot” means an unroofed or partially roofed animal feeding operation in which no crop, vegetation, forage growth, or residue cover is maintained during the period that animals are confined in the operation.

“Permitted use” means a use of water in excess of 25,000 gallons per day that requires a water use permit pursuant to 567—Chapter 50 and Iowa Code chapter 455B, subchapter III, part 4.

“Pitless adapter” means a device designed for attachment to one or more openings through a well casing. It shall be constructed so as to prevent the entrance of contaminants into the well through such openings, conduct water from the well, protect the water from freezing or extremes of temperature, and provide access to water system parts within the well.

“Pitless unit” means an assembly that extends the upper end of the well casing to above grade. It shall be constructed so as to prevent the entrance of contaminants into the well, conduct water from the well, and protect the water from freezing or extremes of temperature, and provide full access to the well and to water system parts within the well. It shall provide a pitless well cap for the top terminal of the well.

“Private well” means a well that does not supply a public water supply system.

“Pumps and pumping equipment” means any equipment or materials, including seals, tanks, fittings and controls utilized or intended for use in withdrawing or obtaining water for any use.

“Runoff control basin” means an impoundment designed and operated to collect and store runoff from an open feedlot.

“Stuffing box” means an approved receptacle in which packing may be compressed to form a watertight or airtight junction between two objects.

“Upper terminus” means the upper ten feet of the well casing as measured from the finished surface grade.

“*Well*” is synonymous with “water well” as defined in Iowa Code section 455B.171. The term does not include heat pump or geothermal heat exchange systems less than 20 feet deep or temporary dewatering wells in place for seven days or less.

“*Well construction*” means constructing a well and installing necessary casing, screen, liners, grout, seals, and other appurtenances.

“*Well liner*” means a pipe used to line the inside of a well hole but not designed to hold hydraulic or structural loading. Liners shall be installed within a casing or in an ungrouted open borehole.

“*Well plugging*” means the closure of an abandoned well with plugging materials by procedures that will permanently seal the well from contamination by surface drainage and permanently seal off the well from contamination into an aquifer. “Well plugging” includes the proper application of filling and sealing materials.

“*Well reconstruction*” means modification of the original construction of a well. “Well reconstruction” includes but is not limited to deepening the well, installing a liner, installing or replacing a screen with one of a different diameter or length, installing a pitless adapter, extending the casing, or hydrofracturing a well. Replacing a screen with one of identical diameter and length or replacing a pitless adapter is considered repair, not reconstruction.

“*Well rehabilitation*” means the physical or chemical cleaning of a well.

“*Well seal*” means a device used to cover or seal a well that establishes or maintains a junction between the well casing well and the piping, electric conduit, or equipment installed, so as to prevent water or other foreign material from entering the well at the uppermost terminal.

1. “Well cap” means a snug-fitting, watertight device used above flood level that excludes dust and vermin and allows for screened venting.

2. “Sanitary seal” means a watertight fitting that uses mechanical compression that is installed on wells that terminate in a wellhouse.

49.2(2) *Abbreviations.*

Abbreviation	Meaning
ABS	acrylonitrile-butadiene-styrene
DR	dimension ratio
FDA	U.S. Food and Drug Administration
HDPE	high-density polyethylene
HTH	high test hypochlorite
psi	pounds per square inch
PVC	polyvinyl chloride
SCH	schedule, as in a SCH 40 rating
SD	separation distance (a.k.a. setback distance)
SDR	standard dimension ratio
USP	United States Pharmacopeia
VFD	variable frequency drive

567—49.3(455B) Applicability. The provisions contained herein apply to the construction and reconstruction of all nonpublic water supply wells 20 feet or greater in depth.

49.3(1) *Nonconforming well construction installations.*

a. Certified well drillers and pump installers shall ensure that the reconstruction of nonconforming wells adheres to all applicable provisions of this chapter or to comparable construction or installation requirements approved by the administrative authority, except for separation distances (SDs).

b. When any construction or reconstruction is done on a nonconforming feature of a well, that feature shall be upgraded and brought into compliance with the material and installation standards in this chapter, except for SDs.

49.3(2) *Nonconforming water system installations.*

a. Certified pump installers shall ensure that the reconstruction or repair of nonconforming water systems adheres to all applicable provisions of this chapter or to comparable construction or installation requirements approved by the administrative authority.

b. When pump services are performed on a well that has a contamination problem, the well shall be upgraded and brought into compliance with the installation standards in this chapter, except for SDs.

c. When pump services are performed on a well that does not have a contamination problem, the well may be put back into service with nonconforming features. However, the certified installer shall notify the well owner in writing of the defects and include recommendations to correct these deficiencies.

49.3(3) *Construction permit required.*

a. In accordance with Iowa Code section 455B.187(2), a landowner or landowner's agent shall not construct a new private well without first obtaining a well construction permit from the department or a county authorized to issue permits pursuant to this chapter. Examples of private wells requiring well construction permits include but are not limited to domestic wells, livestock wells, irrigation wells, recreational-use wells, monitoring wells, heat pump wells, horizontal and lateral geothermal wells, industrial wells, and dewatering wells.

b. A private well construction permit is required for all replacement wells and for modification of the physical dimensions of a well.

49.3(4) *Exemptions.*

a. The permitting and construction rules in this chapter shall not apply to public water supply wells; elevator shafts; underground storage tank monitoring wells covered under 567—Chapter 135; or monitoring wells for solid waste disposal facilities covered in 567—Chapter 113.

b. All dewatering wells are exempt from the construction standards of this chapter, except that a construction permit is required if a dewatering well will be in place for more than seven consecutive days.

c. Private well construction permits are not required for temporary test holes or wells that are in place for seven consecutive days or less; soil borings; mineral, rock, gas, and other non-groundwater wells or exploration boreholes; and all monitoring wells required as part of a permit or a construction approval issued by the department.

567—49.4(455B) General.

49.4(1) *Duties of administrative authority.*

a. The administrative authority shall:

(1) Have the authority to visit well sites during any phase of the work without prior notice, and

(2) Require the issuance of permits and the submission of well logs by rule.

b. The administrative authority may also require posting of performance bonds and the collection and submission of other data.

49.4(2) No well construction or reconstruction shall be initiated until a permit has been issued by the proper authority. Construction permit issuance covered by this chapter shall be coordinated with water withdrawal permits issued by the department, pursuant to 567—Chapter 50.

49.4(3) All well services shall be performed by a certified well contractor or the property owner as specified in 567—Chapter 82.

49.4(4) It is the responsibility of the certified well contractor to ensure that a well construction permit has been issued prior to initiation of well construction or reconstruction and to ensure that all well services are performed in accordance with this chapter.

49.4(5) *Waivers.* Waivers to these rules may be granted by the administrative authority if sufficient information is provided to substantiate equal protection and the need for such action. Waiver requests and reasoning shall be in writing. Waiver approvals or rejections shall also be in writing. Where permitting authority has not been delegated to the county, the department will review and grant or deny any waiver requests within that jurisdiction.

49.4(6) *Noncompliance.* Violations of any of the provisions of this chapter may be addressed by the department pursuant to Iowa Code sections 455B.109, 455B.110, 455B.175 and 455B.191.

567—49.5(455B) Private well construction permit applications and fees.

49.5(1) *Application forms.*

a. An application for a private well construction permit shall be made on forms provided by the department. However, counties that have active delegation of authority to issue new private well construction permits pursuant to rule 567—49.7(455B) may develop and use their own application forms, subject to department approval.

b. Each application shall list all wells, including non-plugged abandoned wells, on the applicant's property contiguous to the well site described in the application and describe the location of each well site. The location(s) shall be given as a legal land description (section, township and range) to the nearest quarter of a quarter of a quarter of a section, or as a latitude and longitude in degrees to four-decimal accuracy.

c. A proper application shall consist of a fully completed form and nonrefundable fee.

49.5(2) *Application fees.*

a. Each application for a private well construction permit shall be accompanied by a nonrefundable fee of \$125 payable to the department of natural resources unless a county is authorized to issue private well construction permits pursuant to rule 567—49.7(455B).

b. In cases where the permitting authority is delegated to a county, it may set a different fee and designate the terms for fee payment and shall submit to the department a permit fee of \$25 per application. This \$25 fee shall be submitted quarterly by the counties in a manner provided by the department.

c. More than one proposed well for the same use on one contiguous piece of property of less than ten acres may be listed on one application and only one fee need be paid irrespective of the number of wells listed on the application form. Additional wells on the same property at a later time shall require another permit. Separate permits are required for individual wells and geothermal systems that are not interconnected and supply or will supply separate domestic or commercial dwellings.

d. The department is exempt from the fee payment requirements to the counties. The department shall remit fees directly to the department's private well permit program fund.

567—49.6(455B) Private well construction permit issuance, conditions, expiration, and denial.

49.6(1) *Issuance.* Upon receipt of a complete application, the department or contracting county shall issue a private well construction permit to the landowner or landowner's agent, except as provided in 49.6(6).

49.6(2) *Not a water withdrawal permit.* Each permit shall include notification that a private well construction permit is not a water withdrawal permit and does not eliminate the necessity of obtaining any water withdrawal permits required in 567—Chapters 50 and 53 through 55 for water withdrawal in excess of 25,000 gallons of water per day from any source or combination of sources in the state of Iowa.

49.6(3) *Construction by certified well contractor.* Each well construction permit shall require that each well be constructed by a certified well contractor in compliance with this chapter and 567—Chapter 82.

49.6(4) *Transferability.* A private well construction permit is not transferable.

49.6(5) *Expiration.* A private well construction permit shall expire one calendar year from the date of issuance. If the well construction is not started prior to the permit expiration date, a new application plus a new nonrefundable fee must be filed with the department or the county pursuant to 49.5(2).

49.6(6) *Permit denial.* The department or contracting county may deny a private well construction permit in the following circumstances:

- a. If granting the permit would lead to the violation of state law, could result in groundwater contamination, or would lead to withdrawal from a protected source;
- b. If the well could threaten public health or the environment; or
- c. If the well would be an underground agricultural drainage injection well.

49.6(7) *Appeal of permit denial.* Any applicant aggrieved by a decision issued under the provisions of this chapter may file a notice of appeal with the director. The notice of appeal must be filed within 30 days of the date of the permit decision. The form of the notice of appeal and appeal procedures are governed by 561—Chapter 7. Appeal of a permit denied by a county that has been delegated authority to issue private well construction permits shall be administered by the county in accordance with its appeal or judiciary review process. Appeal to the department is possible only when the appeal involves well design or construction variances or if delegation to the county is suspended, rescinded, or revoked.

567—49.7(455B) Delegation of construction permitting authority to a county.

49.7(1) *Application.* A county board of supervisors, board of health, or the board's designee, hereafter referred to as a "county," requesting the authority to issue private well construction permits shall enter into an intergovernmental (28E) service agreement with the department in accordance with Iowa Code chapter 28E. The agreement shall be signed by the department and the county and include statements complying with this chapter and 567—

Chapter 39. Additional information supporting an application may be requested by the department. The department may contract for all or part of the private well permitting services in those counties that do not receive or maintain delegation authority or for permit authorities retained by the department.

49.7(2) *Information to the department.* The delegation agreement shall provide for the method, format, and frequency of reporting all permit application information and remission of fees to the department.

49.7(3) *Authority.* After delegation of authority to a county, all applications in that county shall be made to the board or its designee, except that all new private well construction permit applications by state or federal agencies shall be made to the department.

49.7(4) *Delegation term.* A delegation of authority may be for up to five years and may be redelegated at the department's discretion.

49.7(5) *Permit number.* Each permit shall be given a unique number as prescribed by the department. This numbering system shall be consistent throughout the state.

49.7(6) *Emergency permits.* Contracting counties must have policies and procedures in place to accommodate the issuance of permits on an emergency basis for the immediate replacement or reconstruction of wells in response to the sudden and unforeseen loss or serious impairment of a well for its intended use.

49.7(7) *Delegation agreement revocation.* The department may revoke a county delegation agreement if the board of supervisors or the board's designee failed or refused to carry out the provisions of this chapter in a timely manner or violated any of the provisions of the delegation agreement with the department.

567—49.8(455B) Well location and separation distances (SDs).

49.8(1) Wells shall be located with consideration given to the lot size; soil contour, porosity, and absorbency; local groundwater conditions; flooding; publicly available geologic data including but not limited to well logs; and other factors necessary to implement the rules.

a. Frost pits. Wells cannot be located within frost pits. Frost pits that do not contain wells are allowed for the purpose of housing other appurtenances, such as pressure tanks and valves, provided the frost pits are not located closer than ten feet from any well.

b. Relation to buildings. Wells shall be located so that no building interferes with reasonable access for cleaning, treatment, repair, testing, inspection, or other maintenance. Wells cannot be located in basements.

c. Easements. No well shall be located on a property not owned by the well owner unless an easement allowing such placement is reviewed and approved by the administrative authority and the easement is legally recorded.

49.8(2) The following minimum lateral SDs in Table I below from all private wells shall apply for the common structures or sources of contamination listed in the table. The lack of specific distances to other possible sources of contamination, such as refuse disposal sites and high-pressure gas lines, does not minimize their potential hazard. Other possible sources shall be evaluated in each particular situation and a distance arrived at that is based on pertinent facts. The well contractor shall consult the administrative authority for assistance in determining a proper distance in such cases.

TABLE I: Private Well Separation Distances

Structure or Source of Contamination	Required Minimum Lateral Distance, as Measured Horizontally on the Ground Surface, in feet	
	Private Wells	
	Deep Well ¹	Shallow Well ¹
WELLS:		
Public wells:		
Public water supply well – deep or shallow	200	400
Below-ground level finished water storage facility	50	
Private wells:		
Existing private wells that do not conform to 567—Chapter 49	100	

Existing private wells that conform to <u>567—Chapter 49</u>	10	
WASTEWATER DISPOSAL SYSTEMS:		
PSDSs and onsite treatment systems – closed portion ²	50	
PSDSs and onsite treatment systems – open portion ²	100	
Wastewater treatment works ^{3,4,5}	400	
CHEMICALS:		
Transmission pipelines (including but not limited to fertilizer, liquid petroleum, or anhydrous ammonia) ⁶	100	200
Chemical and mineral storage or preparation areas, including areas for spray materials, commercial fertilizers, or chemicals that may contaminate groundwater, except for liquid propane gas (LPG)	150	
Liquid hydrocarbon storage tanks, except for LPG	100	
LPG storage tanks	15	
ANIMALS:		
Animal enclosures (such as confinement buildings or open feedlots)	100	200
Animal Wastes:		
Storage basins or lagoons, or runoff control basins	1000 ⁵	
Solids stockpiles, solids settling facilities, or storage tanks	100	200
WATERBODIES:		
Flowing streams, ponds, lakes, reservoirs, wetlands, or drainage channels ⁷	25	
MISCELLANEOUS		
Anaerobic lagoons ⁵	1000 ⁸	
Solid waste landfills and disposal sites ⁸	1000	
Roadside ditches and road rights-of-way	15	
Cisterns, well pits (containing a well head), yard hydrants, or frost pits	10	
Property lines ⁹	4	
Land application of septage ¹⁰	500	
Land application of sewage sludge	200	
CONVEYANCES: ¹¹		
Gravity sanitary sewers and sanitary sewer force mains including those carrying water treatment plant wastes:		
Water main materials ¹²	25 ¹³	
Standard sanitary sewer materials ¹²	50 ¹³	
Storm sewers, general minimums	10	
Independent clear water drains or pump house floor drains	10	
Building sewer service lines and laterals ¹⁴	10	

¹Deep and shallow wells are defined in rule 567—40.2(455B).

²PSDS (private sewage disposal system) is defined in 567—subrule 69.1(2). For the purposes of this table, “onsite treatment system” includes any wastewater treatment system not included in the definition of a PSDS (i.e., provides treatment or disposal of domestic sewage from more than four dwelling units or 16 or more individuals on a continuing basis) that is utilizing wastewater treatment technologies described in 567—Chapter 69 to treat domestic waste. Closed portion refers to the part of a treatment system that is fully contained and does not allow effluent or pretreated effluent to enter soil or groundwater (e.g., septic tank or impervious vault toilet). Open portion refers to the part of a treatment system that allows effluent or pretreated effluent to discharge into soil or groundwater for treatment or disposal (e.g., soil absorption system or unlined ISSF system). These SDs also apply to septic systems that are not considered privately owned.

³For the purposes of this table, “wastewater treatment works” includes lagoons and mechanical treatment plants as described in this superscript. The term “lagoons” includes aerated lagoon systems, advanced aerated lagoon systems, and waste stabilization lagoons, as defined in 567—subrule 81.1(1), and holding ponds, equalization basins, and sludge digestion or holding tanks, as described in the Iowa Wastewater Facilities Design Standards (IWFDS). The term does not include

lagoons used to dispose of water treatment plant wastes and anaerobic lagoons used for animal wastes (as noted in superscript 5). The SD from lagoons shall be measured from the water surface. The term “mechanical treatment plants” includes activated sludge systems and fixed film biological treatment systems, as defined in 567—subrule 81.1(1), and any other wastewater disposal system that is not a PSDS, an onsite treatment system, or a lagoon.

⁴The SD between an existing, nonpotable, deep or shallow private well and an industrial treatment works may be reduced from 400 feet to 200 feet to accommodate the expansion of an existing industrial treatment works, provided the well and the treatment works share the same ownership.

⁵The 400-foot SD between a private well and an anaerobic lagoon, earthen manure storage basin, earthen manure slurry storage basin, or runoff control basin shall be 1,000 feet. If an applicant for a private well construction permit demonstrates through percolation testing that the seepage loss through the lagoon or basin does not exceed 1/16 inch per day (0.0625 inch/day), the SD shall be 400 feet. The percolation test shall meet the requirements of ASTM D1587/D1587M-15 and 567—subrule 65.15(11).

⁶These private well SDs apply only if a more restrictive setback is not set by the pipeline owner.

⁷Includes drainage channels that may have a direct connection to the groundwater table or a surface water.

⁸Solid waste, when referring to landfills and disposal sites, means garbage, refuse, rubbish, and other similar discarded solid or semisolid materials, including but not limited to such materials resulting from industrial, commercial, agricultural, and domestic activities.

⁹This distance applies unless a mutual easement is signed and recorded by both parties.

¹⁰Septage shall be land applied in accordance with 567—Chapter 68.

¹¹The SDs are dependent upon two factors: the type of piping that is in the existing sewer or drain, as noted in the table, and that the piping was properly installed in accordance with the standards.

¹²These are the type of materials or pipe used to construct the type of sewer, main, or drain as specified, in accordance with 567—subrule 43.3(2) and Section 2.4 of the IWFDS.

¹³The 25- and 50-foot SDs do not apply to private closed-loop geothermal wells. The SD between closed-loop geothermal systems and both gravity sanitary sewers and sanitary sewer force mains shall be 10 feet.

¹⁴The SD for building sewer service lines and laterals shall be considered the minimum distance when constructing sewer lines and shall be increased where possible to provide better protection.

567—49.9(455B) General construction requirements. Wells shall be planned and constructed to adapt to the geologic and groundwater conditions of the proposed well site to ensure both the reasonable utilization of every natural protection against contamination of the water-bearing formation(s) and the exclusion of possible sources of contamination, to attempt to produce bacterially safe water free of health-related problems.

49.9(1) *Water used in construction.* Water used in the construction process shall be obtained from a potable water source that will not result in well contamination. Drilling water shall be treated with 3 pints of 5.25 percent sodium hypochlorite solution per 100 gallons of water, 0.25 pounds of 65 percent calcium hypochlorite per 100 gallons of water, or other additives to produce an equivalent concentration of chlorine residual (50 ppm).

49.9(2) *Wellhead.*

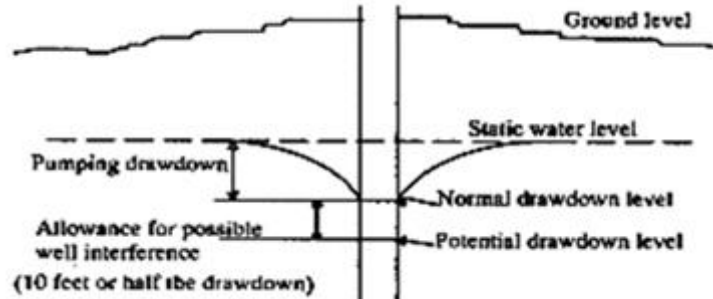
a. The upper terminal casing of all wells shall extend at least 12 inches above established grade or pump house floor, or the 100-year flood level, whichever is higher. A well cap or sanitary seal shall be installed immediately following well completion. A well cap shall be used on an exposed well; a sanitary seal only on a well terminating within a wellhouse. Any openings in the cap or seal, such as for pump wiring or water depth measurement, shall be properly grommeted or sealed, except for properly screened and oriented vent openings.

b. The ground surface immediately adjacent to the well casing shall be compacted and graded so that surface water is diverted away from the casing. Well platforms are not recommended, except those used as pump house floors.

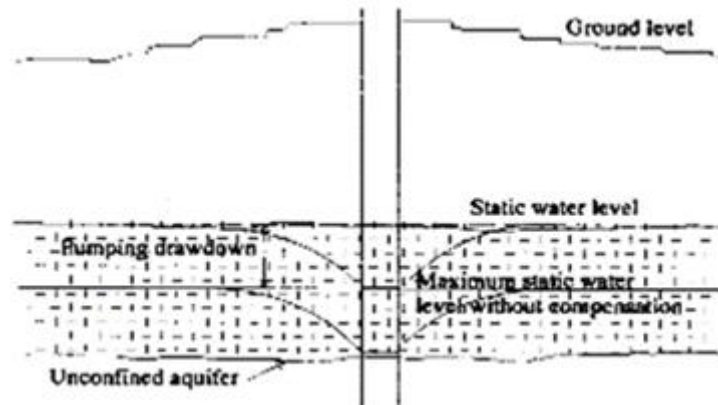
49.9(3) *Criteria for well interference protection.* 567—Chapter 54 provides an administrative process for owners of nonregulated wells to receive compensation for well interference caused by permitted uses. To be eligible for compensation due to well interference, nonregulated wells shall be constructed to allow for some potential well interference.

a. Allowance for potential well interference is accomplished by constructing a nonregulated well to anticipate a lowering of the well's static head, which may be caused by interference from a nearby permitted use well.

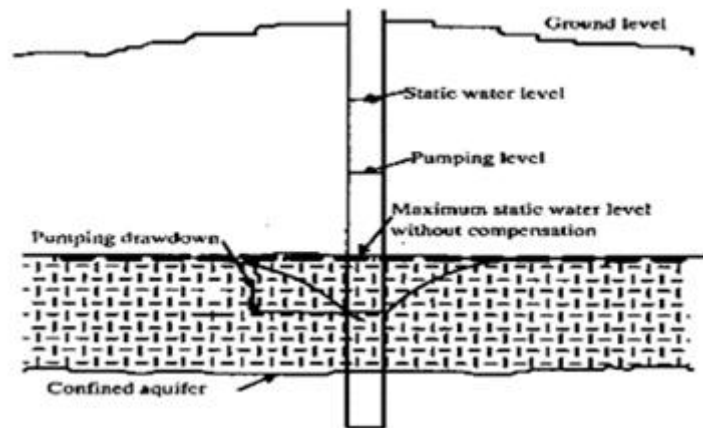
(1) A well shall be drilled deep enough to allow for pump setting at least 10 feet or half the normal pumping drawdown, whichever is greater, below the initial recommended setting depth.



(2) If a well draws from an unconfined aquifer, the static water level may drop to half the saturated thickness of the aquifer before well interference is considered, if the calculation in (1) above should indicate a shallower depth. Shallow aquifers that are only slightly confined may be classified as unconfined aquifers for this purpose.



(3) Where a well penetrates a confined aquifer, the static water level is protected only to the top of the aquifer if the calculation in (1) above should indicate a deeper level.



(4) Protected levels for flowing wells will be considered the top of the confined aquifer or 100 feet below the surface, whichever is higher. Flowing wells shall be constructed to accommodate a pump capable of supplying a sufficient water supply at protected levels.

(5) The well design also needs to consider drought and reduced well efficiency. Additional information is provided in 567—Chapter 54.

b. A well that is used to withdraw more than 25,000 gallons of water per day requires a water use permit from the department. Upon obtaining such a permit, the well is considered a permitted use.

(1) If a permitted use exists prior to the construction of a well without a water use permit, no compensation for well interference will be allowed unless a significant change in the permitted use occurs.

(2) A physical change to withdrawal facilities may be considered a significant change to a permitted use (e.g., moving the withdrawal location, installing a new well, or installing a higher capacity pump).

(3) A person desiring to construct a well not requiring a water use permit should first obtain information concerning nearby permitted use wells. The department shall provide information on permitted use wells upon request.

49.9(4) *Access port for water level measurement.* Permitted use wells shall be equipped with an access port having a minimum diameter of $\frac{3}{4}$ inch. The access port shall be fitted with

a threaded cap or plug and be located to allow insertion of a steel tape or electric probe into the well for water level measurements. When a spool type of pitless adapter is used that obstructs clear access to the water, a ¾-inch pipe shall be attached to the spool and brought to the surface below the well cap to allow water level measurements. Wells not requiring a water use permit should be constructed with an access port for water level measurement for possible future well interference concerns.

49.9(5) *Interconnection of aquifers.* Permitted use wells shall use casing and grouting to maintain a hydraulic separation between distinct aquifers separated by confining intervals. Hydraulic separation of distinct aquifers for non-permitted use wells is not required; however, caution should be taken to prevent aquifer contamination, and the administrative authority shall be consulted for possible local regulations when interconnection of aquifers across confining intervals is anticipated.

567—49.10(455B) Types of well construction.

49.10(1) *Drilled wells.*

a. Non-bedrock wells.

(1) Casing depth. In no case shall less than 20 feet of permanent solid casing be installed in wells drilled in unconsolidated materials. If the alluvial aquifer where the water is to be drawn from is covered by less than 40 feet of low permeability materials, the well screen shall be set at the bottom of the water-bearing aquifer or at least 60 feet from the surface. Deeper depths may be required if nitrate contamination is excessive. If more than 40 feet of low permeability materials are present above the aquifer, the casing shall extend down at least to the top of the aquifer.

(2) Grouting.

1. Grout shall be placed to a minimum depth of 40 feet or along the full length of the casing where less than 40 feet of casing is set. Grouting the full length of the casing below 40 feet may be necessary to isolate any contaminated water lenses or aquifers.

2. If a layer of low permeability material at least 5 feet thick is encountered less than 40 feet from the surface, the grout may be terminated no less than 5 feet below the top of this low permeability material, but in no case less than 20 feet from the ground surface.

3. Grout shall be placed in accordance with 49.11(3), except when driving casing. When driving casing, a cone-shaped depression or temporary outer casing that is filled with bentonite products must be maintained around the well casing. The bottom of the driven casing shall be equipped with a drive shoe.

(3) Annular space.

1. The borehole diameter shall be at least three inches greater than the outside diameter of the well casing to the minimum grouting depth.

2. When steel well casing pipe is installed using percussion methods, the annular space shall be at least five inches greater than the outside diameter of the well casing to a minimum depth of 25 feet.

- (4) If the depth of casing is greater than 40 feet, the annular space below 40 feet may be filled with heavy drilling fluid taken from the borehole as long as the top 40 feet of annular space is properly grouted. In this case, the annular space below 40 feet shall be kept as small as possible to avoid settling.

b. Bored and augered non-bedrock wells with concrete, fiberglass, or clay tile casing. The casing shall be at least 18 inches in diameter and buried-slab construction is required.

(1) Casing.

1. The top of the concrete, fiberglass, or vitrified clay pipe casing shall be terminated not less than 10 feet below ground surface and extend to a minimum depth of 20 feet.

2. Casing shall be fitted with a reinforced concrete, fiberglass, or steel plate, into which a watertight steel or thermoplastic casing is firmly embedded in or connected to a pipe that is cast or welded into the plate.

3. The embedded casing shall be at least 5 inches in diameter and shall extend from the plate to not less than 12 inches above established grade or the 100-year flood level, whichever is higher.

4. A pitless adapter shall be installed below frost depth on newly installed plastic or steel casing.

(2) Grout. A 12-inch grout seal shall be poured over and around the plate.

(3) Annular space. The annular space between the steel or thermoplastic casing and the borehole shall be backfilled with clean compacted soil free of debris or large organic material. During the backfilling process, the earth shall be thoroughly tamped to minimize settling. Grading around the well shall then be accomplished in accordance with 49.9(2).

c. Bedrock wells.

(1) Casing depth. Casing shall extend to a depth of at least 40 feet and be seated in firm rock. When the uppermost bedrock consists of creviced limestone or dolomite that does not produce water, the casing shall extend through the creviced formation, be seated in firm rock, and be properly grouted.

(2) Grouting.

1. For bedrock wells, full-length grouting of the casing is strongly recommended. Grout shall be placed to a minimum depth of 40 feet in accordance with 49.11(3), except when driving casing using percussion or casing-hammer/rotary drilling.

2. When driving casing, a cone-shaped depression or temporary outer casing that is filled with bentonite products shall be maintained around the outside of the casing. The bottom of the driven casing shall be equipped with a drive shoe.

3. If a layer of low permeability material at least 5 feet thick is encountered less than 40 feet from the surface, the grout may be terminated no less than 5 feet below the top of this low permeability material, but in no case less than 20 feet from the ground surface.

4. Where local conditions warrant, the administrative authority may require more extensive grouting to protect any aquifer(s) that are penetrated.

(3) Annular space.

1. The borehole shall be at least three inches greater than the outside diameter of the well casing for the upper 40 feet or the minimum grouting depth.

2. When steel casing pipe is installed using percussion, or casing-hammer/rotary methods, the annular space shall be at least five inches greater than the outside diameter of the well casing to a minimum depth of 25 feet.

3. When bedrock wells are full-length pressure-grouted through the casing, the borehole diameter shall be three inches larger than the outside diameter of the casing for the minimum depth of at least 25 feet.

(4) If the depth of casing is greater than 40 feet, the annular space below 40 feet may be filled with heavy drilling fluid taken from the borehole as long as the top 40 feet of annular space is properly grouted. In this case, the annular space below 40 feet shall be kept as small as possible to avoid settling.

(5) In fractured rock, where circulation of slurry cannot be maintained, grouting may be done with bentonite chips. The chips shall be hydrated with one gallon of water per bag of bentonite.

49.10(2) *Driven, direct push, and sandpoint wells.* Well construction in sandy areas with a high water table is not recommended for potable water supplies. These types of wells shall meet the requirements of this chapter, except for casing depth and grouting requirements.

49.10(3) *Flowing artesian wells.*

a. Drilling operations shall extend into but not through the formation confining the water. The casing shall be installed and the annular space full-length pressure-grouted and allowed to set. After the grout is set, the drill hole shall be extended into the confined water-bearing formation.

b. Flow control from the well shall be provided by valved pipe connections or a receiving tank set at an altitude corresponding to that of the artesian head. Under no circumstances shall the water flow uncontrolled to waste.

c. A direct connection between the discharge pipe and a receiving tank, sewer, or other source of contamination is prohibited.

567—49.11(455B) Material standards. All materials utilized in well water construction shall conform to the standards and guidance of the AWWA, API, ASTM, and NGWA, except as modified by this rule.

49.11(1) *Well casing.*

a. *Steel well casing and couplings.*

(1) Steel well casing pipe shall have the weights and dimensions specified in Table II. Well casing pipe shall be new steel pipe meeting one of the following standards:

1. ASTM A-53-96,
2. ASTM A-106-95,
3. ASTM A-589-95a - Type I, II or III,
4. API SPEC 5CT (5th Edition, 4/1/95),
5. API SPEC 5D (3rd Edition, 8/1/92), or
6. API SPEC 5L (41st Edition, 4/1/95).

(2) Each length of casing shall be legibly marked in accordance with API or ASTM marking specifications with the manufacturer's or processor's name or trademark, size in

inches, weight in pounds per foot, whether seamless or welded (type of weld), and the API or ASTM specification or trade monogram.

(3) All casing pipe joints shall be watertight welded construction or threaded couplings.

(4) Minimum casing pipe and coupling weights and dimensions are shown in Table II below:

Table II - Minimum Casing Pipe and Coupling Weights and Dimensions

Size (inches)	Weight (lbs/ft)		Pipe				Couplings	
	Threads & coupling	Plain end	Thickness (inches)	External diameter (inches)	Internal diameter (inches)	Threads per inch	External diameter (inches)	Length (inches)
1	1.70	1.68	.133	1.315	1.049	11-1/2	1.576	2-5/8
1-1/4	2.30	2.27	.140	1.660	1.380	11-1/2	1.900	2-3/4
1-1/2	2.75	2.72	.145	1.900	1.610	11-1/2	2.200	2-3/4
2	3.75	3.65	.154	2.375	2.067	11-1/2	2.750	2-7/8
2-1/2	5.90	5.79	.203	2.875	2.469	8	3.250	3-15/16
3	7.70	7.58	.216	3.500	3.068	8	4.000	4-1/16
3-1/2	9.25	9.11	.226	4.000	3.548	8	4.625	4-3/16
4	11.00	10.79	.237	4.500	4.026	8	5.200	4-5/16
5	15.00	14.62	.258	5.563	5.047	8	6.296	4-1/2
6	19.46	18.97	.280	6.625	6.065	8	7.390	4-11/16
6-5/8 OD	20.00	19.49	.288	6.625	6.049	8	7.390	4-11/16
7 OD	20.00	19.54	.272	7.000	6.366	8 R	7.657	4-11/16
8	29.35	28.55	.322	8.625	8.071	8	9.625	5-1/16
10	41.85	40.48	.365	10.750	10.136	8	11.750	5-9/16
12	51.15	49.56	.375	12.750	12.090	8	14.000	5-15/16
14 OD	57.00	54.57	.375	14.000	13.250	8	15.000	6-3/8
16 OD	65.30	62.58	.375	16.000	15.250	8	17.000	6-3/4
18 OD	73.00	70.59	.375	18.000	17.250	8	19.000	7-1/8
20 OD	81.00	78.60	.375	20.000	19.250	8	21.000	7-5/8

R = Round Threads

b. Thermoplastic casing and couplings.

(1) Materials. Thermoplastic well casing pipe and couplings shall:

1. Be new PVC or ABS material having a minimum pressure rating of 200 psi and meeting one of the following standards: ASTM F 480-12, ASTM D2241-09, AWWA C-900-16, or ASTM 1785-21; and

2. Have an SDR of 21, 17, or 13.5, a DR of 18 or 14, or a SCH 40 or 80 rating, depending upon the specification.

(2) Potable water standards. The thermoplastic well casing pipe, pipe couplings, cement, primer, and other components shall be approved for well casing pipe in potable water supplies by the NSF 61-2016 or the health effects portion of NSF 14-2012 as they relate to well casing pipe, or an approved equivalent organization.

(3) Markings. Each length of casing shall be legibly marked with the manufacturer's or processor's name or trademark, the size in inches, and the ASTM F 480 specification or trade monogram.

(4) Casing joints. Thermoplastic pipe shall be assembled with either flush-threaded joints, integral-bell, solvent-cemented joints, one-piece solvent-cemented couplings, or a nonmetallic restrained joint system in accordance with ASTM F 480-12.

(5) When cement grout is used with thermoplastic casing, the manufacturer's specifications for use shall be followed, except in the top 40 feet.

(6) Thermoplastic pipe extending above ground shall be protected from ultraviolet light exposure.

(7) Under no circumstances shall thermoplastic well casing be driven.

49.11(2) *Grouting guides.* Casing that is to be grouted shall have a minimum of two sets of centering guides attached to the casing to allow for unobstructed flow and deposition of grout.

49.11(3) *Grouting materials and procedures.*

a. Concrete grout. This mixture shall consist of cement, sand aggregate, and water, in the proportion of one bag cement (94 lbs.) and an equal volume of aggregate to not more than six gallons of clean water. Concrete grout shall not be used below the water table. Admixtures to reduce permeability or control setting time shall meet ASTM C 494-19. Concrete grout may be used with administrative authority permission where large void spaces need to be filled.

b. Neat cement grout. This mixture shall consist of one bag of cement (94 lbs.) to not more than six gallons of clean water. Admixtures to reduce permeability or control setting time shall meet ASTM C 494-19.

c. Bentonite grout. This is a mixture of water and commercial sodium-bentonite clay manufactured for the purpose of well grouting. Mixing shall be per manufacturer's specifications. Sodium-bentonite mixtures that have high viscosity but contain less than 10 percent solids are designed for drilling purposes and shall not be used as grout. Organic polymers used in grout mixtures shall meet NSF 60-2016.

d. Bentonite pellets, chips, or granular bentonite. A layer of bentonite pellets, chips, or granular bentonite not exceeding five feet may be used between the gravel pack and grout. Bentonite pellets are otherwise not permissible.

e. Exclusion. Drilling fluids and cuttings may not be used as grouting material.

f. Application. Grouting shall be performed by pumping the mixture into the annular space from the bottom upward through the casing or through a tremie pipe until the annular space is filled. Grouting shall be done in one continuous operation, if possible. The bottom of the tremie pipe shall remain submerged in grout while grouting.

g. Exceptions. If buried-slab, percussion, or casing-hammer/rotary methods are used to construct a well, grouting shall be performed in accordance with 49.10(1) and 49.10(2). If slurry circulation cannot be maintained, grouting shall be performed in accordance with 49.10(1)“c”(5).

567—49.12(455B) Well reconstruction. All well reconstruction shall meet the requirements of this chapter, except for SDs. If the well feature in need of reconstruction cannot be brought into compliance with these rules, the well shall be properly plugged.

49.12(1) Liner installation. If reconstruction will involve the placement of a liner, a certified well contractor shall determine whether or not the proposed reconstruction is being

done in order to correct a health-related problem. Based on the determination, the reconstruction shall be performed in accordance with either 49.12(1) “a” or “b” below.

a. Standards for liner installation to correct a health-related problem.

(1) The liner shall:

1. Have a minimum of two sets of centering guides to allow the proper placement of grout, and

2. Extend to the ground surface or top of the pitless adapter.

(2) In no case shall the liner be driven into place.

(3) The annular space between the old casing and the liner shall be pressure-grouted in place throughout its entire length using an approved grout.

b. Standards for liner installation to correct a problem that is not health-related.

(1) The liner shall extend at least ten feet above the static water level or, if a caving zone is present, shall extend above this region.

(2) The liner may be pressure-grouted in place if there is a sufficient annular space for proper grout application.

c. Liner materials. Liners shall meet the well casing standards in 49.11(1). Liners may be composed of either steel or thermoplastic with a minimum inside diameter of four inches. Steel liners shall be new and have a minimum wall thickness of .188 inches. Plastic liners shall have an SDR of 26 or less or be SCH 40 or SCH 80. If the installation does not meet the definition of a liner, casing material shall be used.

49.12(2) *Upper terminus.* All well reconstruction performed on the upper terminus of a well shall meet the standards of this chapter, except for SDs.

567—49.13(455B) Drilling mud disposal. Drilling fluid and mud remaining after construction of a well shall not be disposed of in a stream or storm sewer; nor shall these

materials be discharged into a sanitary sewer without permission of the owner and operator of the wastewater treatment facility.

567—49.14(455B) Pumps, pumping equipment, and wiring.

49.14(1) *General pump installation requirements.* Pump installation shall be planned and carried out so the pump will be:

- a. Installed so that it and its surroundings are not exposed to chemical or biological contamination;
- b. Properly sized so as to provide the volume of water necessary, where obtainable, for an adequate water supply;
- c. Designed to meet the well characteristics and not exceed the yield of the well, except for low yield seepage/storage wells;
- d. Installed without repriming or breaking suction;
- e. Installed in a manner that provides adequate protection against contamination of the water supply from any surface or subsurface sources; and
- f. Accessible for maintenance, repair, and removal.

49.14(2) *Lubrication.* Pump motor lubricant or coolant oil shall be NSF H1 approved or be FDA Generally Recognized As Safe (GRAS)-approved for incidental food contact.

49.14(3) *Other power pumps.* Other power pumps located over the well shall be mechanically joined to the casing or on a pump foundation or stand in a manner that effectively seals the top of the well. A sanitary seal shall be used where the pump is not located over the well, and the pump delivery or suction pipe emerges from the top.

49.14(4) *Hand pumps or similar devices.*

- a. A hand pump, hand pump head, hand pump stand, or similar device shall be constructed so that there are no openings into the interior of the pump or well casing where rain or surface water, dirt, insects, or animals, or other foreign matter can enter.

b. Hand pumps shall:

- (1) Be provided with a casing vent as described in 49.17(2);
- (2) Have a closed, downward-directed spout and a sealed pump rod packing assembly; and
- (3) Be attached to a well casing by a sealed flange or other method approved by the administrative authority. The flange shall not be less than 12 inches above a concrete slab or the ground surface.

c. Where a well casing functions as a hand pump cylinder wall, the plunger shall not be less than 25 feet below the ground surface. Casing wall weep holes are not allowed.

49.14(5) Pump wiring. Pump wiring within the well shall be double-jacketed copper wire meeting the NEC specifications for wire sizing unless the pump manufacturer requires a non-jacketed wire. Wire outside of the casing shall meet NEC specifications, at a minimum. Wire shall be secured to the drop pipe at a minimum of 20-foot intervals.

567—49.15(455B) Drop pipe.

49.15(1) Discharge pipe. Galvanized, black, or stainless steel drop pipe shall be minimum SCH 40 wall thickness when threaded. Minimum SCH 10 stainless is allowed with mechanical joint type systems. PVC drop pipe shall be minimum SCH 80 wall thickness. SCH 80 machined PVC, brass, stainless steel couplings, or equivalent thickness cast couplings (including mechanical joints), shall be used with PVC pipe. Polyethylene drop pipe shall meet the minimum specifications of ASTM D3350-21. Only brass or stainless steel fittings can be used on polyethylene drop pipe. If polyethylene drop pipe is used, the outside diameter of the pump shall be at least one inch smaller than the inside diameter of the well casing.

49.15(2) Check valve. For potable water installations, all pumps shall have a check valve within 20 feet of the pump for pump installations without drain-back aeration. For pump installations with drain-back aeration, the check valve shall be below the pitless adapter.

567—49.16(455B) Pitless adapters and pitless units.

49.16(1) Pitless adapters and pitless units conforming to WSC Pitless Adapter Standard—1997 (PAS-97) are considered compliant with these rules.

49.16(2) No well casing shall be cut off or cut into below ground surface except to install a pitless well adapter below the frost level.

49.16(3) A pitless subsurface pipe connection to a well casing pipe shall be made with a weld-on, clamp-on, or bolt-on pitless adapter or weld-on or threaded pitless unit. Aboveground discharge pitless adapters with a drain-back into the well are prohibited on systems under continuous pressure.

49.16(4) If the pitless adapter is gasketed, the opening in the casing shall be sawed to the diameter recommended by the manufacturer with a hole saw and not cut with a torch. The pitless adapter used shall have the correct curvature to fit the diameter of the casing.

567—49.17(455B) Well caps, seals, and vents.

49.17(1) *Caps and seals.*

a. A well cap shall be used on any well not protected by a wellhouse and shall seal tightly against the casing to prevent surface water, dirt, insects, or any foreign matter from entering the well.

b. The well casing shall terminate at least one foot above the finished grade surface.

c. A split-top sanitary seal may only be used on a well terminating within a wellhouse.

d. Any openings in the cap or seal, such as for pump wiring, water depth measurement, or chemical feed, shall be properly grommited or sealed, except for properly screened and oriented vent openings.

e. There shall be no openings through the well cap except for a factory-installed vent, air-line chemical feed, and power supply wiring unless a proposal is submitted to and approved by the administrative authority. To be approved, a proposal shall show that any entrance into

the well cap is watertight, prevents surface water from entering the water supply, is secured in position, is only removable with tools, and is resistant to weathering and corrosion.

f. Well pump systems that are not under continuous pressure and have no pressure tank may discharge out of the top of the well if all connections are watertight welds or grommeted openings. Venting, heights, and other cap requirements shall be met.

49.17(2) Vents. A well cap used on a well that has a pitless adapter or pitless unit shall have a screened vent hole at least ½ inch in diameter, pointing downward, with not less than 24-mesh noncorrosive screen. Vent openings shall terminate at least 12 inches above finished ground surface. Venting is required on all wells, except Class 3 wells or flowing wells.

567—49.18(455B) Underground piping and wiring.

49.18(1) Underground piping from the well casing to the pressure tank shall be a minimum 100 psi pressure rating, NSF Standard 61, and meet ASTM standards for potable water.

49.18(2) Underground wiring from a well shall either be enclosed in a watertight electrical conduit extending from the entrance of the conduit into the casing to a minimum of three feet below ground level, threaded into the well cap, or sealed into the cap or casing in a watertight manner. The internal passage of the conduit shall be sealed around the wire with a nonhardening, pliable sealing compound.

567—49.19(455B) Filters, water treatment equipment, and sampling faucets.

49.19(1) Filters and water treatment equipment shall be installed and operated in accordance with manufacturers' directions.

49.19(2) In all pressure water systems, provision shall be made for collection of water samples directly from the well by installation of a sampling faucet before the pressure tank, prior to encountering any water treatment equipment.

a. The sampling faucet shall be installed at least 12 inches above the floor, have a downturned spout, and be in an accessible location.

b. All sample faucets shall be metal and have a smooth (nonthreaded) outlet.

567—49.20(455B) Hydropneumatic (pressure) tanks.

49.20(1) *Sizing.* With the exception of tanks that utilize VFDs, pressure tanks shall have an effective water volume large enough to allow the well pump to operate at least one minute between low-pressure activation and high-pressure shut off while no water is being used by the system. The minimum pressure shall be set according to the manufacturer's recommendation.

49.20(2) *Constant pressure pump.* Constant pressure/variable speed pumps shall be sized according and operated at the minimum pressure according to manufacturer's recommendation.

49.20(3) *Pressure relief valve.* Tanks shall have a pressure relief valve sized according to the pump capacity, if the pump is capable of developing pressure greater than the working pressure of any system component. The pressure relief valve shall be located prior to any shut-off valve on the distribution system side of the tank.

49.20(4) *Pressure gauge.* Tanks shall have a pressure gauge capable of reading at least 100 psi.

49.20(5) *Tank appurtenances.* If a non-bladder tank is used, it shall be equipped with a means of adding or venting air from the tank to maintain the proper air-water ratio.

49.20(6) *Tank location.* Buried pressure tanks are prohibited. If pressure tanks are not located in a residence or other heated structure, they shall be located in a buried vault or aboveground structure.

a. *Buried vault (frost pit).* The vault and vault opening shall be sized to allow ease of access for the installation and maintenance of necessary equipment. The vault shall be as watertight

as possible, allow for drainage via drain tile or sump pump, and have at least one foot of rock or gravel above the tile. All wiring in the vault shall be in watertight conduit. No buried vault shall be allowed within a 100-year flood plain.

b. Aboveground structure. The structure and access opening shall be sized to allow the installation and maintenance of necessary equipment. The structure shall be insulated and heated to prevent tank freezing. Structures with concrete floors shall be at least four inches above the surrounding ground and be sloped to a drain or to the door to facilitate drainage. If the structure is located over the well, it shall have a hinged roof or removable hatch over the well or have other provisions for pulling the well pump.

567—49.21(455B) Connections.

49.21(1) *Electrical connections.* At a minimum, all electrical installation shall be performed and maintained in accordance with the NEC. A certified pump installer may perform wiring from the pump to the electrical panel unless local ordinances require additional licensing.

49.21(2) *Interconnections and cross connections.* No connection between a well or boring and another well, boring, water supply system, any chemical injection, or contamination source is allowed unless the connection is:

- a.* Protected by an air gap;
- b.* Protected by a backflow preventer as approved by the department;
- c.* Inspected upon completion, and inspected annually by a certified backflow prevention assembly tester in accordance with 641—Chapter 26; or
- d.* Between wells or borings that meet the construction standards of this chapter, are used for the same purpose, and have equivalent quality water supply.

567—49.22(455B) Backflow prevention for chemical injection systems for nonpotable wells.

49.22(1) Backflow prevention for irrigation. Where a chemical injection system is connected directly to a well used for irrigation that is not used as a potable water supply, a single-check spring-loaded backflow preventer shall be installed between the point of chemical injection on the pump discharge piping and the well, in accordance with the manufacturer's instructions. The check valve shall withstand a minimum hydraulic pressure of 150 psi without leaking. The backflow device shall be provided with:

- a. Valving so that water can be drained from the system to prevent freezing;
- b. A vacuum relief valve to prevent backsiphoning of chemicals into the well;
- c. An automatic low-pressure drain at least $\frac{3}{4}$ inches in diameter, positioned so that when draining occurs liquid will flow away from the well. This drain shall be at least six inches above grade, and shall quickly drain the check valve water when operation of the well pump is discontinued;
- d. A watertight seal around the check valve; and
- e. An inspection port four inches in diameter to allow inspection of check valve operation.

49.22(2) Pump control interconnection. The well pump and the chemical injection pump shall be electrically connected so that, when the well pump stops, the chemical pump will shut off automatically.

567—49.23(455B) Ground heat exchange (GHEX) closed-loop borehole systems. In addition to the other provisions of this chapter, the following provisions apply to the construction of GHEX loop systems 20 feet or greater in depth.

49.23(1) Piping shall be a minimum of 160 psi pressure-rated HDPE and be pressure-tested with air or potable water for 15 minutes at a pressure of 1.5 times the system operating pressure, after installation in the borehole.

49.23(2) Connection to piping shall use socket fusion or butt fusion joining methods.

49.23(3) Only potable water, or food-grade or USP-grade propylene glycol or calcium chloride, may be used as heat transfer fluid.

a. Heat transfer fluids containing additives shall be NSF certified as HT1 in the NSF White Book.

b. Any other materials or additives shall be NSF 60 certified.

c. Additives shall be mixed only in concentrations recommended by the manufacturer.

d. A permanent sign shall be attached to the heat pump specifying the exact mixture of heat transfer fluid contained and stating that only approved heat transfer fluids may be used.

49.23(4) A flow measurement device shall be installed on each system.

49.23(5) Water make-up lines to the vertical heat exchanger shall be protected with a backflow prevention device.

49.23(6) Grouting shall be performed for the full length of the borehole via tremie pipe from the bottom upwards with the tremie submerged in grout during the entire process. The grout shall be checked for subsidence at least 24 hours after the initial grouting. If subsidence has occurred, the grouting process shall be repeated and rechecked until the borehole is fully grouted and subsidence has stopped.

49.23(7) All buried piping, including the top of vertical boreholes and the full length of horizontal piping, shall be permanently marked with magnetic tape, magnetic wire, or survey pins to allow for underground detection or utility location at the ground surface.

49.23(8) Within 30 days of GHEX borehole system installation, an as-built aerial map or engineering document shall be submitted to the permitting authority with the well record form showing the location and GPS coordinates of each vertical and horizontal borehole and all horizontal piping from the borehole into the building and vault. The permitting authority shall upload the document to the department's private well database.

567—49.24(455B) Well disinfection. Wells and water systems shall be disinfected by the contractor following construction completion and whenever any well services are performed.

49.24(1) Prior to disinfection, all new, repaired or rehabilitated wells shall be pumped to waste until the water is free of drilling mud, drill cuttings, and sand, and the water is clear.

49.24(2) A chlorine solution, such as a sodium or calcium hypochlorite, shall be used for well disinfection. Chlorine compounds and any additives shall be NSF 60 (2016) certified.

49.24(3) Disinfectant shall:

- a. Be dispersed throughout the entire water column in the well,
- b. Be brought into contact with the inside of the well casing pipe above the static water level, and
- c. Remain in the well for a minimum of two hours if a concentration of at least 100 mg/L chlorine is achieved, or a minimum of 24 hours if at least 50 mg/L is achieved.

49.24(4) For emergency situations, a contact time of a minimum of 30 minutes shall be provided at a chlorine concentration of at least 200 mg/L.

49.24(5) The amount of HTH or household bleach required for a chlorine concentration of 200 mg/L is given in Table III below:

Table III - Amount of chlorine disinfectant required for every 25 feet of water in well

Well casing diameter (in inches)	4	6	8	12	18	24	30	36
Amount of pelleted HTH (in ounces containing approx. 70 percent $\text{Ca}(\text{OCl})_2$)	0.7	1.5	2.6	5.6	13	23	36	52
Amount of chlorine bleach (in pints containing 5.25 percent NaOCl)	0.5	1.2	2.1	4.7	10.6	18.8	29.3	42.2

49.24(6) Dry disinfectant shall be dissolved in a separate container of water before introduction into the well. The solution shall contain not more than eight ounces of pelleted HTH disinfectant per five gallons of water.

567—49.25(455B) Water sampling and analysis.

49.25(1) The owner of a new, reconstructed, or rehabilitated well shall submit a water sample to a certified laboratory for coliform bacteria and nitrate analysis, or allow the

administrative authority to collect this water sample. The water sample shall be collected at least 10 days after, but not more than 30 days after, a well is put into service following construction, reconstruction, or rehabilitation. The analysis results shall be submitted to the administrative authority.

49.25(2) If the water sample analysis detects the presence of bacteria, the disinfection procedure described in rule 567—49.24(455B) shall be repeated.

567—49.26(455B) Well abandonment. Abandoned wells are a contamination hazard to the water bearing formation as well as a physical hazard for people.

49.26(1) *Plugging rules.* Abandoned wells shall be properly plugged as required in 567—Chapter 39.

49.26(2) *Waste disposal prohibition.* Under no circumstances shall abandoned wells be used for the disposal of debris, solid waste, septic tank sludge or effluents; for any other type of unauthorized disposal of waste materials; or as a receptacle for field tile drainage.

These rules are intended to implement Iowa Code chapter 455B.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item (**indicates proposed consent item*)

***13. Chapter 39, “Requirements for Properly Plugging Abandoned Wells” – Final Rule**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 39. This rulemaking is the result of the Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 39 establishes a schedule and required procedures for the proper plugging of abandoned wells consistent with Iowa Code section 455B.190. The proper plugging of abandoned wells protects the groundwater of the state by permanently sealing off contamination to individual aquifers. The well plugging procedures are tailored to the type of well. This chapter was reviewed and edited consistent with Executive Order 10. The edits to this chapter are minor and include eliminating redundancies, inconsistencies, unnecessary language, and duplicative language.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8614C. Two public hearings were held on February 3, 2025 and February 4, 2025.

Changes from NOIA: 10 people attended the public hearings but no public comments were received. No changes were made. The final rule is identical to the NOIA.

Effective Date of Final Rule: June 18, 2025

Erik Day, Geologist 3
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 39 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission hereby rescinds Chapter 39, “Requirements for Properly Plugging Abandoned Wells,” Iowa Administrative Code and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3) and 455B.173(9).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.172 and 455B.190 and Executive Order 10.

Purpose and Summary

New Chapter 39 establishes a schedule and required procedures for the proper plugging of abandoned wells as authorized in Iowa Code section 455B.190. The proper plugging of abandoned wells protects the groundwater of the state by permanently sealing off contamination to individual aquifers. The well plugging procedures are tailored to the type of well. This chapter was reviewed and edited consistent with Executive Order 10.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as ARC 8614C.

Two public hearings were held. The first public hearing was held on February 3, 2025 from 10:00 AM to 11:00 AM virtually via Zoom. The second public hearing was held on February 4, 2025 from 2:00 PM to 3:00 PM virtually via Zoom.

Seven people attended the first public hearing, and none provided comment. Three people attended the second public hearing, and none provided comment. Additionally, no public comments were received during the public comment period.

The final rule is identical to the Notice of Intended Action.

Adoption of Rulemaking

This rulemaking was adopted by the Environmental Protection Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the state of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 39 and adopt the following **new** chapter in lieu thereof:

CHAPTER 39

REQUIREMENTS FOR PROPERLY PLUGGING ABANDONED WELLS

567—39.1(455B) Purpose and applicability. This chapter implements Iowa Code section 455B.190 by providing a schedule and required procedures for the proper plugging of abandoned wells to protect the groundwater by permanently sealing off contamination to individual aquifers.

39.1(1) Wells covered by these rules are those accessing groundwater (withdrawing water from or injecting water into the groundwater) and can include but are not limited to public and nonpublic water wells, test wells, observation wells, monitoring wells, agricultural drainage wells, heat pump recirculation wells, and cooling water wells.

39.1(2) Wells or subsurface structures not covered by these rules include small-diameter (2-inch or less) test holes, observation wells or monitoring wells installed for a limited time that can be sealed by withdrawing the casing and allowing the hole to collapse; soil borings; septic tanks; underground storage tanks; and cisterns, if not used for accessing groundwater.

39.1(3) For additional guidance and background information, refer to “Guidelines for Plugging Abandoned Water Wells,” Technical Information Series 15, Geological Survey Bureau, Iowa DNR, 1988, available on the department’s website at www.iowadnr.gov.

567—39.2(455B) Definitions. In addition to the definitions in 567—Chapter 40, 567—Chapter 49, 567—Chapter 82, and Iowa Code sections 455B.101, 455B.171, 455B.190 and 455B.190A, the following definitions shall apply to this chapter:

“Agricultural lime” means all calcium and magnesium products sold for agricultural purposes in the carbonate form, not including quicklime or hydrated lime, of a size comparable with that of crushed stone, gravel, or pea gravel.

“Approved” means accepted or acceptable under an applicable specification stated or cited in these rules.

“Aquifer” means a water-bearing geologic formation capable of yielding a usable quantity of water to a well or spring.

“Bentonite” means a naturally occurring, highly plastic, colloidal clay composed largely of the mineral montmorillonite that expands upon wetting.

“Bentonite grout” or *“slurry”* means a mixture of 10 percent processed bentonite (by weight) and water that is free of contaminants, turbidity, and settleable solids.

“Bentonite pellets” means a form of processed bentonite that can be used directly for sealing applications in well plugging operations.

“Bentonite products” means the forms of bentonite that can be used for sealing material in wells, including graded bentonite, bentonite pellets, and bentonite grout.

“Capped” means the application of a layer of sealing material at the top of the well casing.

“Casing” means a tubular retaining structure installed in an excavated hole to maintain the well opening.

“Concrete” means a mixture of one sack (94 pounds) of Portland cement, up to but not exceeding an equal amount by volume of sand and up to but not exceeding an equal amount by volume of gravel or crushed stone and not more than six gallons of water that is free of contaminants, turbidity, and settleable solids.

“Confined aquifer” means an aquifer in which the groundwater is under pressure greater than atmospheric pressure. The static water level in a well tapping a confined aquifer rises to a level above the top of the aquifer.

“Crushed stone” means stone (predominantly limestone), crushed and well graded, with 100 percent passing a 1-inch sieve, in accordance with the 1984 edition of Iowa Department of Transportation (DOT) specification No. 4120.04 for Class A crushed stone.

“Frost pit” means a sunken area located directly over or within four feet of a well and used to house the equipment for discharging water from a well into the water system.

“Graded bentonite” means bentonite that is crushed and sized for pouring and easy handling. Like processed bentonite, it swells when hydrated with water and will form a plastic, essentially impermeable mass.

“Gravel” means stone screened from river sand or quarried, with 100 percent passing a ¾-inch sieve, in accordance with the 1984 edition of the Iowa DOT specification No. 4120.02 for Class B gravel.

“Groundwater” means any water beneath the surface of the earth.

“Grout” means a material used to seal the annular space between the casing and borehole or between casings, or to seal wells during plugging. Approved grouts include bentonite products, concrete, neat cement, or sand cement grout.

“Limestone” means sedimentary rock that contains greater than 50 percent calcium carbonate and has a strong reaction with hydrochloric acid (HCL).

“Neat cement” means a mixture of one sack (94 pounds) of Portland cement to not more than six gallons of water that is free from contaminants, turbidity, or settleable solids. Bentonite up to 2 percent by weight of cement may be added to reduce shrinkage.

“Pea gravel” means gravel sized from ⅛ inch to ⅜ inch in diameter.

“Processed bentonite” means bentonite that has been kiln-dried and processed into pellets for direct use in well sealing applications or into powder or coarse granules for use in bentonite grout for sealing.

“Rock” means stone screened from river sand or quarried, free of debris, foreign matter, and any toxic or agricultural chemical residue, up to 2½ inches in diameter.

“Sand” means clean, medium-textured quartz (concrete sand), at least 25 percent with diameters between 0.25 and 2.0 mm, less than 35 percent with diameters between 0.05 and 0.25 mm, and less than 5 percent with diameters between 0.002 and 0.05 mm.

“Sand cement grout” means a mixture of one sack (94 pounds) of Portland cement, an equal amount by volume of sand and not more than six gallons of water that is free from contaminants, turbidity, and settleable solids.

“Sandpoint well” means a small-diameter water well constructed by joining a screened drive point with lengths of pipe and driving the assembly into a shallow sand and gravel aquifer.

“*Sealing*” means the proper placement of sealing materials into an abandoned well to seal off flow into, out of, or between aquifers.

“*Standby well*” means a water well that is temporarily taken out of service with the expectation of being returned to service at a future date.

“*Static water level*” means the water level in a water well or aquifer when the well is not flowing or being pumped, sometimes referred to as the water line. The static water level for an abandoned well is determined just prior to commencing plugging operations.

“*Tremie pipe*” means a device, usually a small-diameter pipe, that carries grouting materials to the bottom of the hole and that allows pressure grouting from the bottom up without introduction of air pockets.

“*Unconfined aquifer*” means an aquifer in which the static water level does not rise above the top of the aquifer (i.e., the pressure of the water in the aquifer is approximately equal to that of the atmosphere).

567—39.3(455B) Abandoned well plugging schedule. All classes of wells that are abandoned must be properly plugged within 90 days of the date of abandonment.

567—39.4(455B) Abandoned well owner responsibilities.

39.4(1) *Plugging requirements.* The well owner is responsible for ensuring an abandoned well is plugged pursuant to this chapter.

39.4(2) *Record.* It is the responsibility of the owner to complete, certify, and submit to the department, or the local county health department when seeking private well grant funds, the well plugging form documenting that an abandoned well has been plugged in accordance with the requirements in this chapter, within 30 calendar days of the completed plugging. The well plugging form shall include confirmation of the well plugging by the designated agent for the county or a certified well contractor. The form is available on the department’s website at www.iowadnr.gov.

567—39.5(455B) Abandoned well plugging materials.

39.5(1) *Sealing materials.* Approved sealing materials are bentonite products (graded bentonite, bentonite pellets, and bentonite grout), neat cement, sand cement grout, and concrete. If graded bentonite or bentonite pellets are used, they may be added by pouring in place and agitating to avoid bridging.

39.5(2) *Filling materials.* Approved filling materials include agricultural lime, sand, pea gravel, gravel, and crushed stone. Soil may only be used to backfill the top four feet above the final sealing cap. The filling materials shall be free of debris, foreign matter, and any toxic or agricultural chemical residue. Filling materials are not required for well plugging.

567—39.6(455B) Abandoned well plugging procedures.

39.6(1) *Freedom from obstructions.* Abandoned wells must be checked before they are plugged in order to ensure there are no obstructions that may interfere with plugging operations. Drop pipes, check valves, pumps, and other obstructions shall be removed if practical.

39.6(2) *Removal of casing and housing for all wells.* Casing pipe and any curbing, frost pit, or pump house structure shall be removed to a depth of four feet below the ground surface. The remaining depth shall be sealed, as specified based on well type, backfilled with soil, and graded so that surface water is directed away from the abandoned well location.

39.6(3) *Class 1 wells.*

a. Class 1 wells may be plugged by pouring filling and sealing materials from the top of the well or by using tremie pipes or dump bailers. Sand cement grout or concrete placed below the static water level shall be placed by tremie pipe or dump bailer.

b. Filling materials shall be placed up to one foot below the static water level. A minimum of one foot of sealing materials shall be placed on top of the filling material up to the static water level as a seal. Filling material may then be added up to four feet below the ground surface.

c. A minimum of one foot of sealing materials shall be placed where the casing, curbing, frost pit, or pump house structure is removed. The sealing materials shall extend six or more inches beyond the outside diameter of the top of the remaining well casing and shall terminate three feet

below the ground surface. The remaining three feet (below the ground surface) shall then be backfilled with soil and graded so that surface water is directed away from the abandoned well location.

39.6(4) *Class 2 wells other than bedrock wells.*

a. If the details of well construction are unknown or obstructions that may interfere with well plugging cannot be removed, the well shall be tremied full of neat cement or bentonite grout up to four feet below the ground surface. If bentonite grout is used from the static water level to the top of the well, it should be capped by neat cement, sand cement grout, or concrete terminating four feet below the ground surface.

b. Filling material shall be placed in the bottom of the well up to four feet below the static water level. Sealing materials consisting of any bentonite products or neat cement shall be added above the filling material up to four feet below ground surface. If bentonite grout or neat cement is used, it shall be placed by tremie pipe. Concrete and sand cement grout are permissible starting at the static water level.

39.6(5) *Class 2 bedrock wells.* If the details of well construction are unknown or obstructions that may interfere with well plugging cannot be removed, the well shall be tremied full of neat cement or bentonite grout up to four feet below the ground surface. If bentonite grout is used from the static water level to the top of the well, it should be capped by neat cement, sand cement grout, or concrete terminating four feet below the ground surface.

a. *Bedrock wells completed in a single confined aquifer.*

(1) Before the well is plugged, a bridge plug or packer shall be placed at or below the bottom of the casing to stop the flow of water where the pressure in the confined aquifer causes the water to flow from the well to the surface. In such cases, filling materials shall be placed in the lower portion of the well before the bridge plug or packer is set.

(2) Filling material shall be placed from the bottom of the well up to ten feet below the bottom of the casing or uncased confining layer, whichever is lower. Sealing materials consisting of any

bentonite products, sand cement grout, or neat cement shall be placed from either the top of the filling material to at least ten feet above the bottom of the casing or uncased confining layer or to the static water level, whichever is higher.

1. If bentonite grout, neat cement, or sand cement grout is used, it shall be placed by tremie pipe. The casing shall then be filled up to four feet below the ground surface with sealing materials.

2. If bentonite grout is used from the static water level to the top of the well, it should be capped by neat cement, sand cement grout, or concrete terminating four feet below the ground surface.

- (3) It is preferable to omit filling materials and use approved sealing materials to fill the entire well up to four feet below the ground surface.

b. Bedrock wells completed in a single unconfined aquifer. The plugging procedure for these wells is the same as for bedrock wells completed in a single confined aquifer, except that a bridge plug or packer is not required to stop the flow of water since this problem will not exist in this type of well.

c. Bedrock wells completed in multiple aquifers.

- (1) For the lowest aquifer, filling material shall be placed from either the bottom of the well up to ten feet below the bottom of the casing or uncased confining layer, whichever is lower. Neat cement tremied in place shall then be placed as a sealing material on top of the fill and extend upward at least 20 feet. Sealing materials shall then be placed in at least the top ten feet of each subsequent aquifer and extend at least ten feet into either the confining layer or casing above, whichever is higher. The same type of filling materials and sealing procedures shall apply for each subsequent aquifer.

- (2) Filling material may be placed from the top of the uppermost aquifer seal up to the static water level of the well. The casing shall then be filled with sealing materials to four feet below the ground surface. If bentonite grout is used from the static water level to the top of the well, it

should be capped by neat cement, sand cement grout, or concrete terminating four feet below the ground surface.

(3) It is preferable to omit filling materials and use approved sealing materials to fill the entire well up to four feet below the ground surface. Sand cement grout or concrete shall be applied with a tremie pipe or dump bailer when applied below the static water level.

39.6(6) *Class 3 wells.* The preferred method of plugging a sandpoint well is to pull the casing and sandpoint out of the ground, allowing the hole to collapse and fill. If the sandpoint and casing cannot be extracted, they shall be tremied full of neat cement or completely sealed with bentonite products.

567—39.7(455B) Designation of standby wells.

39.7(1) *Standby wells.* All standby wells shall:

- a. Be disinfected prior to being taken out of use for a long period of time and when placed back in service, in accordance with rule 567—49.24(455B);
- b. Be checked for bacteria and nitrates, as a minimum, when placed back in service;
- c. Not be subject to contamination by surface drainage or from other causes;
- d. Be provided with an airtight well casing cover when the well is not in use; and
- e. Be repaired so that there is no degradation of groundwater and it is suitable for use prior to being classified as a standby well.

39.7(2) *Caveat.* Nothing in these rules shall be construed as exempting public water supply wells from any other requirements set forth in state rules.

567—39.8(455B) Waivers. A waiver to these rules may be granted by the department provided sufficient information substantiating the need for a waiver is submitted in accordance with the department's waiver procedures in 561—Chapter 10. When satisfactory justification has been submitted to the director demonstrating that a waiver to these rules will result in equivalent or improved effectiveness and equivalent protection of all aquifers penetrated by the affected well,

a waiver to these rules may be granted by the director. A waiver denial may be appealed to the commission pursuant to 567—Chapter 7.

These rules are intended to implement Iowa Code sections 455B.172 and 455B.190.

**Iowa Department of Natural Resources
Environmental Protection Commission**

Decision Item

14. Chapter 40, “Scope of Division, Definitions, Forms, Public Notice and Education, Consumer Confidence Reports, Reporting, and Record Maintenance”; and Chapter 42, “Public Notification, Public Education, Consumer Confidence Reports, Reporting, and Record Maintenance” – Final Rules

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 40 and to rescind and reserve Chapter 42. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 40 establishes the rules of practice for the Department’s administration of the water supply programs and provides definitions used in the administration of those programs. Chapters 40 and 42 were consolidated consistent with Executive Order 10. Accordingly, new Chapter 40 incorporates rule language from Chapter 42, which is rescinded. More specifically, new Chapter 40 includes rules formerly in Chapter 42 regarding public notice, public education, consumer confidence reports, reporting, and record maintenance for the public water system supervision program, all of which are necessary elements of the federal Safe Drinking Water Act.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 11, 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8616C. Two public hearings were held on January 30, 2025 and January 31, 2025.

Changes from NOIA: Four people attended the first public hearing, and four attended the second hearing. No public comments were received at the hearings. Two email comments and one comment letter were received during the public comment period. This final rule is substantially identical to the NOIA. Minor corrections were made to the final rule to address minor omissions from the NOIA and to correct rule references. No changes were made in response to the comments.

Effective Date of Final Rule: June 18, 2025

Carmily Stone, MPH, Water Supply Engineering Supervisor
Water Quality bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapters 40, 42 – Final rules

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 40, “Scope of Division—Definitions—Forms—Rules of Practice”; and adopts a new Chapter 40, “Scope of Division, Definitions, Forms, Public Notice and Education, Consumer Confidence Reports, Reporting, and Record Maintenance”; and rescinds and reserves Chapter 42, “Public Notification, Public Education, Consumer Confidence Reports, Reporting, and Record Maintenance,” Iowa Administrative Code.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3), 455B.173, 455B.173(5) and 455B.173(6).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192 and the Safe Drinking Water Act (SDWA) as amended (42 U.S.C. §300f et seq.).

Purpose and Summary

New Chapter 40 establishes the rules of practice for the Department’s administration of the water supply programs in the State and provides definitions used in the administration of those programs. The programs with definitions in Chapter 40 are the public water supply program (including the federal Safe Drinking Water Act (SDWA)), the private well program, the water use and allocation program, the water supply and well contractor operator certification programs, the drinking water laboratory certification program, the Drinking Water State Revolving Fund loan program, the water supply construction standards, and the water supply construction permitting program.

Former Chapters 40 and 42 were consolidated consistent with Executive Order 10. Accordingly, new Chapter 40 incorporates rule language from Chapter 42, which is rescinded. More specifically, new Chapter 40 includes rules formerly in Chapter 42 regarding public notice, public education, consumer confidence reports, reporting, and record maintenance for the public water system supervision program, all of which are necessary elements of the SDWA.

Public Comment and Changes to Rulemaking

Notice of Intended Action (NOIA) for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8616C**.

Two public hearings were held. The first public hearing was held on January 30, 2025 from 2:00 PM to 3:00 PM virtually via Zoom. The second public hearing was held on January 31, 2025 from 9:00 AM to 10:00 AM virtually via Zoom.

Four people attended the first public hearing, and four attended the second hearing. No public comments were received at the hearings. Two email comments and one comment letter were received during the public comment period.

This final rule is substantially identical to the NOIA. The definition of the SDWA was modified to allow for rule-specific date references. Abbreviations for project priority list and separation distance were added, as they were mistakenly omitted in the NOIA. Erroneous rule references were corrected in the final rule. No changes were made in response to the comments.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 40 and adopt the following **new** chapter in lieu thereof:

DIVISION B

DRINKING WATER

CHAPTER 40

SCOPE OF DIVISION, DEFINITIONS, FORMS, PUBLIC NOTICE AND EDUCATION,

CONSUMER CONFIDENCE REPORTS, REPORTING, AND RECORD MAINTENANCE

567—40.1(455B) Scope of division.

40.1(1) The department conducts the public water supply program and establishes minimum standards for private water supply system construction. The public water supply program includes the following: establishing drinking water standards, including maximum

contaminant levels, treatment techniques, maximum residual disinfectant levels, action levels, monitoring, viability assessment, consumer confidence reporting, public notice, public water supply system (PWS) operator certification standards, environmental drinking water laboratory certification program, a state revolving fund loan program consistent with the federal Safe Drinking Water Act (SDWA), and establishing construction standards. The construction, modification, and operation of any PWS requires a permit from the department. Certain construction permits are issued upon certification by a licensed professional engineer that a project meets standards, and in certain instances, permits are issued by local authorities. Private water supplies are regulated by local boards of health.

40.1(2) The chapters listed below contain the requirements and provisions for the noted portions of the public water supply program.

567—Chapter 39: proper well closure or abandonment.

567—Chapter 40: scope of division, public notice and education, consumer confidence reports, reporting, and recordkeeping requirements.

567—Chapter 41: drinking water standards and monitoring requirements.

567—Chapter 43: design, construction, fee, operating, and operation permit requirements.

567—Chapter 44: drinking water state revolving fund program.

567—Chapter 49: nonpublic water supply wells.

567—Chapter 50: water use, withdrawals, and diversions.

567—Chapter 53: protected water sources.

567—Chapter 54: water use permit restrictions and well interference compensation.

567—Chapter 55: aquifer storage and recovery.

567—Chapter 81: operator certification.

567—Chapter 82: water well contractor certification.

567—Chapter 83: laboratory certification.

567—40.2(455B) Definitions, references, and abbreviations. The terms, references, and abbreviations defined in this rule are applicable to this division and the chapters listed in rule 567—40.1(455B), unless otherwise specified.

40.2(1) *Defined terms.*

“Action level” or *“AL”* means the lead or copper concentration(s) in water that determine, in some cases, the treatment requirements that a water system is required to complete.

“Acute health effect” means the health effect of a contaminant that is an immediate rather than a long-term risk to health.

“Animal confinement” means a lot, yard, corral, or similar structure in which the concentration of livestock or poultry is such that a vegetative cover is not maintained.

“Animal pasturage” means a fenced area where vegetative cover is maintained and animals are enclosed.

“Animal waste” means animal wastes consisting of excreta, leachings, feed losses, litter, washwaters or other associated wastes.

“Animal waste stockpiles” means the stacking, composting or containment of animal wastes.

“Animal waste storage basin or lagoon” means a fully or partially excavated or diked earthen structure used for containing animal waste, including earthen side slopes or floor.

“Animal waste storage tank” means a completely fabricated structure, with or without a cover, either formed in place or transported to the site, used for containing animal wastes.

“Antisiphon device” means a device that prevents back siphonage by means of a relief valve that automatically opens to the atmosphere, preventing the creation of subatmospheric pressure within a pipe, thereby preventing water from reversing its flow.

“Authority” means the Iowa finance authority (IFA) as established by Iowa Code chapter 16.

“Backflow” means the flow of water or other liquids, mixtures, or substances into a potable water supply’s distribution system from any source other than its permitted source.

“Backflow preventer” is a device or means to prevent backflow into a potable water system.

“Back siphon” means the flowing back of used, contaminated, or polluted water from a plumbing fixture or vessel as a result of negative or subatmospheric pressure within the distribution system.

“Best available technology” or *“BAT”* means the best technology, treatment techniques, or other means that the state finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available after taking cost into consideration.

“CFR” or *“Code of Federal Regulations”* means the federal administrative rules adopted by the United States in effect as of July 1, 2024. The amendment of the date contained in this definition shall constitute the amendment of all CFR references contained in Division B unless a date of adoption is set forth in a specific rule.

“Cistern” means a tank that stores rainwater from roofs.

“Clean compliance history” means, for the purposes of 567—paragraph 41.2(1) “e”(4)“2,” a record of no monitoring violations and no coliform treatment technique trigger exceedances or treatment technique violations under 567—subrule 41.2(1).

“Combined filter effluent” or *“CFE”* is generated when the effluent water from the individual filters in operation is combined into one stream. Representative samples of the combined filter effluent are monitored to determine compliance with treatment technique requirements.

“Composite correction program” or *“CCP”* is a systematic procedure that identifies and corrects the unique factor combinations in the areas of design, operation, maintenance and administration that limit the performance of a filtration plant. A CCP includes a

comprehensive performance evaluation (CPE) and comprehensive technical assistance (CTA).

“*Comprehensive technical assistance*” or “*CTA*” is a CCP’s performance improvement phase that is implemented if the CPE results indicate improved performance potential by a filtration plant, in which the system must identify and address plant-specific factors.

“*Consecutive PWS*” means an active PWS that purchases or obtains all or a portion of its water from another PWS, also called a wholesale system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

“*Conservation easement*” means an interest in land that entitles a person to use the land possessed by another (affirmative easement), or to restrict uses of the land subject to the easement (negative easement). A conservation easement restricts the landowner to uses that are compatible with resource conservation.

“*Contiguous*” means directly adjacent along all or most of one side of a legally defined piece of property. Tracts of land involved in the same operation or water supply and separated only by roads, railroads, or bike trails are deemed contiguous tracts.

“*Corrosive water*” means a water that, due to its physical and chemical characteristics, may cause leaching or dissolving of the constituents of the transporting system in which it is contained.

“*Cross connection*” means any actual or potential connection between a potable water supply and any other source or system through which it is possible to introduce into the potable system any used water, industrial fluid, gas, or other substance other than the intended potable water with which the system is supplied.

“*CT*” means the product of the residual disinfectant concentration (C, in mg/L) determined before or at the first customer and the corresponding disinfectant contact time (T, in minutes), $C \times T$. If a PWS applies disinfectants at more than one point prior to the first customer, it must

determine the CT for each disinfectant sequence at or before the first customer to determine the total inactivation ratio (also known as total percent inactivation). When determining the total inactivation ratio, a PWS must determine C for each disinfection sequence and the corresponding T before any subsequent disinfection application point(s). The CT is dependent upon the microorganism to be inactivated and is affected by the disinfectant type, pH, and water temperature.

“Customers” in consumer confidence reports are defined as billing units or service connections to which a CWS delivers water.

“Deep well” means a well located and constructed such that there is a continuous layer of low permeability soil or rock at least 5 feet thick located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

“Disinfection profile” is defined in 40 CFR §141.2. The procedure for developing a disinfection profile is contained in 567—paragraph 43.9(2) “b” and 567—subrule 43.10(2).

“Drinking water state revolving fund” or *“DWSRF”* means the department-administered fund intended to develop drinking water revolving loans to help finance drinking water infrastructure improvements, source water protection, system technical assistance, and other activities intended to encourage and facilitate PWS rule compliance and public health protection.

“DWSRF funds” means the combination of a particular fiscal year’s federal capitalization grant appropriation plus the 20 percent state of Iowa match, and any additional funds made available through the program.

“Eligible cost” means the cost of all labor, material, machinery, equipment, loan initiation and loan service fees, project planning, design and construction engineering services, legal fees and expenses directly related to projects, capitalized interest during the construction of projects, and all other expansion, construction, and rehabilitation of all or part of projects

included in the funding request placed on the draft intended use plan as a fundable project, subject to commission approval.

“Emergency/standby well or connection” means a well or a connection to another PWS that is used less than 30 calendar days per calendar year.

“Federal cross-cutters” means the federal laws and authorities that apply to projects funded through the DWSRF.

“Federal fiscal year” or *“FFY”* means the federal fiscal year starting October 1 and ending September 30.

“First draw sample” means a one-liter tap water sample, collected in accordance with 567—paragraph 41.4(1) “c,” that has been standing in plumbing pipes at least six hours and is collected without flushing the tap.

“GAC10” means granular activated carbon filter beds with an empty-bed contact time of ten minutes based on average daily flow and a 180-day carbon reactivation frequency, except that the reactivation frequency for GAC10 is 120 days when used as a BAT for compliance with the MCL locational running annual average for TTHMs and HAAs.

“Health advisory” or *“HA”* means a group of levels set by the EPA below which no harmful health effect is expected from a given contaminant in drinking water. The HAs used by the department are listed in the most current edition of the EPA’s Drinking Water Regulations and Health Advisories, available at www.epa.gov/sdwa/drinking-water-health-advisories-has. The lifetime HA is the concentration of a chemical in drinking water that is not expected to cause any adverse noncarcinogenic effects over a lifetime of exposure, with a margin of safety. The long-term HA is the concentration of a chemical in drinking water that is not expected to cause any adverse noncarcinogenic effects up to approximately seven years (10 percent of an individual’s lifetime of exposure), with a margin of safety.

“Human consumption” means water used as part of or in connection with drinking; washing; food processing; incidental to commercial food preparation, such as water used in beverages or other food items; ice used in drinks or in salad bars; water for washing of food; water used for washing dishes, pans or utensils used in food preparation or service; water used for cleanup and washing of food preparation or service areas; or water for bathing, showering, hand washing, or oral hygiene purposes. Human consumption does not include water for production of packaged or bulk food products regulated by other state or federal regulatory agencies, such as livestock slaughtering or bottled or canned food and beverages; cooling water; industrial or commercial wash waters used for nonfood products; irrigation water; or water used in toilets or urinals.

“Impoundment” means a reservoir, pond, or lake in which surface water is retained for a period of time, ranging from several months upward, created by constructing a barrier across a watercourse and used for water storage, regulation, or control.

“Individual filter effluent” or *“IFE”* means the effluent water from a specific filter. Representative samples of the IFE are monitored to determine compliance with TT requirements.

“Influenced groundwater” or *“IGW,”* also known as groundwater under the direct influence (GWUDI) of surface water, means any groundwater that is under the direct or indirect influence of surface water, as determined by the presence of (1) significant occurrence of insects or other macroorganisms, algae or large-diameter pathogens such as *Cryptosporidium* or (2) significant and relatively rapid shifts in water characteristics such as turbidity, temperature, conductivity, or pH that correlate to climatological or surface water conditions or other parameters as specified in 567—43.5(455B).

“Initial compliance period” means the first full three-year compliance period of a compliance cycle.

“Intended use plan” or *“IUP”* means a plan identifying the intended uses of funds available for loans in the DWSRF for each fiscal year as described in Section 1452 of the SDWA.

“Lead free,” when used with respect to solder and flux, refers to solders and flux containing not more than 0.2 percent lead and not more than a weighted average of 0.25 percent lead when used with respect to the wetted surfaces of pipes, pipe fittings, plumbing fittings, and fixtures in accordance with 42 U.S.C. 300-g-6. The following requirements of 40 CFR 143, Subpart B, that pertain to PWSs are adopted by reference: 40 CFR §143.10, 40 CFR §143.11, and 40 CFR §143.12(b-f).

“Lead service line” or *“LSL”* means a service line made of lead that connects the water main to the building inlet and any lead pigtail, gooseneck, or other fitting that is connected to such a lead line. A lead gooseneck is not considered a lead service line unless it exceeds ten feet.

“Level 2 assessment” is defined in 40 CFR §141.2. A Level 2 assessment is conducted by a department water supply inspector and will typically include the system operator. The department may tailor specific assessment elements with respect to a system’s size and type and a distribution system’s size, type and characteristics. A system must comply with any expedited actions or additional actions required by the department in the case of an *E. coli* MCL violation.

“Maintenance” means the replacement of equipment or materials that are necessary to maintain the operation of a PWS but do not alter capacity, water quality or treatment method, or effectiveness.

“Nonacute health effect” means the health effect of a contaminant which is a long-term rather than immediate risk to health.

“Nontransient noncommunity water system” or *“NTNC”* means a PWS, other than a CWS, that regularly serves at least 25 of the same persons four hours or more per day, for four or more days per week, for 26 or more weeks per year. Examples of NTNCs are schools, day-care centers, factories, offices and other PWSs that provide water to a fixed population of 25 or more people. In addition, other service areas, such as hotels, resorts, hospitals and restaurants, are considered as NTNCs if they regularly serve at least 25 or more of the same persons for four or more hours per day, for four or more days per week, for 26 or more weeks of the year.

“Point-of-use treatment device” or *“POU”* is a treatment device applied to a single tap or multiple taps that reduces contaminants in drinking water at those taps but is not intended to treat all of the water in the facility.

“Population served” means the total number of persons served by a PWS that provides water intended for human consumption. For municipalities that serve only the population within their incorporated boundaries, it is the last official (or officially amended) U.S. census population. For all other CWSs, it is either the actual counted population that is verifiable by the department or the population calculated by multiplying the number of service connections by an occupancy factor of 2.5 persons per service connection. For municipalities that also serve outside their incorporated boundaries, the served population must be added to the official census population as determined either by verifiable count or by the 2.5 persons per service connection occupancy factor. For NTNC and TNC systems, it is the average number of daily employees plus the average number of other persons served, such as customers or visitors during the peak month of the year, regardless of whether each person actually uses the water for human consumption. Where a system provides water to another PWS (consecutive PWS) that is required to have an operation permit, the population of the recipient

PWS shall not be counted as a part of the system providing the water. CWSs and NTNCs will pay their operation permit fees based upon the population served.

“Potable water” means water that is suitable for human consumption. Drinking water that meets the requirements of 567—Chapters 40, 41, and 43 is considered to be potable water.

“Privy” means a structure used for the deposition of human body wastes.

“Project” includes the planning, design, construction, alteration or extension of any PWS but does not include the maintenance of a system.

“Project priority list” or *“PPL”* means the list of projects in priority order that may qualify for DWSRF loan assistance contained in the IUP document prepared pursuant to 567—44.8(455B). The priority list identifies all projects eligible for funding and the points assigned to each project pursuant to 567—44.7(455B).

“Public water supply system” or *“PWS”* means a system that provides water to the public for human consumption through pipes or other constructed conveyances, if such a system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. This includes any collection, treatment, storage, and distribution facilities under the system operator’s control and used primarily in connection with such a system and any collection or pretreatment storage facilities not under such control that are used primarily in connection with such a system. The term does not include any special irrigation district. A PWS is either a community water system (CWS) or a noncommunity water system (NCWS).

“Public water supply system control” is defined as one of the following forms of authority over a service line: authority to set standards for construction, repair, or maintenance of the service line; authority to replace, repair, or maintain the service line; or ownership of the line. Contaminants added to the water under circumstances controlled by the water consumer or

user, with the exception of those contaminants resulting from the corrosion of piping and plumbing caused by water quality, are excluded from this definition.

“Regional water system” means a PWS in which the projected number of service connections, in at least 50 percent of the distribution system’s length, does not average more than eight service connections per linear mile of water main.

“Sanitary sewer pipe” means a sewer complying with the department’s standards for sewer construction.

“Sanitary survey” means a review and on-site inspection conducted by the department of a PWS’s water source(s), facilities, equipment, operation and maintenance (O&M), and records for the purpose of evaluating the adequacy of such source(s), and facilities, equipment, and O&M for producing and distributing safe drinking water, in order to identify improvements necessary to maintain or improve drinking water quality pursuant to 567—subrule 43.1(7).

“SDWA” or *“Act”* means the Safe Drinking Water Act as amended (42 U.S.C. 300f et seq.), unless a date of adoption is set forth in a specific rule.

“Sedimentation” means a water treatment process for solid particle removal from a suspension before filtration by gravity or separation.

“Septic tank” means a watertight structure into which wastewater is discharged for solids separation and digestion.

“Service connections” means the total number of active and inactive service lines originating from a water distribution main for the purpose of delivering water intended for human consumption. For municipalities, rural water districts, mobile home parks, housing developments, and similar facilities, this includes, but is not limited to, occupied and unoccupied residences and buildings, provided that there is a service line connected to the water main (or another service line), and running onto the property. For rental properties

which are separate PWSs, this includes, but is not limited to, the number of rental units. Connections to a system that delivers water by a constructed conveyance other than a pipe are excluded from this definition if:

1. The water is used exclusively for purposes other than human consumption;
2. The department determines that alternative water to achieve the equivalent level of public health protection provided by the applicable national primary drinking water regulation is provided for human consumption; or
3. The department determines that the water provided for human consumption is centrally treated or treated at the entry point by the provider, a pass-through entity, or the user to achieve the equivalent level of protection provided by the applicable national primary drinking water regulations.

“Service line sample” means a sample of water, one liter in volume, that has been standing for at least six hours in a service line, collected in accordance with 567—paragraph 41.4(1) “c,” and used to determine a lead or copper concentration.

“Shallow well” means a well located and constructed such that there is not a continuous layer of low permeability soil or rock (or equivalent retarding mechanism acceptable to the department) at least 5 feet thick, the top of which is located at least 25 feet below the normal ground surface and above the aquifer from which water is to be drawn.

“Significant deficiency” includes a defect in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the department determines to be causing, or has the potential for causing the introduction of contamination into the water delivered to consumers.

“Significant noncompliance” or *“SNC”* means the failure to comply with any national primary drinking water standard as adopted by the state of Iowa according to criteria established by the EPA administrator.

“Source/entry point” or *“SEP”* means the entry point of water into the distribution system that is representative of each source after application of all treatment and before the first service connection. This point is used for the collection of certain compliance samples. If a representative sample of all water sources cannot be obtained, as determined by the department, separate SEPs with the appropriate monitoring requirements will be assigned by the department.

“Special irrigation district” means an irrigation district in existence prior to May 18, 1994, that provides primarily agricultural service through a piped water system with only incidental residential or similar use where the system or the residential or similar users of the system comply with numbered paragraphs “2” and “3” in the definition of “service connections.”

“Standard specifications” means specifications submitted to the department for use as a reference in reviewing future plans for proposed water main construction.

“Ten States Standards” means the “Recommended Standards for Water Works,” 2022 edition, a report of the Great Lakes—Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, available on their website at www.health.state.mn.us/communities/environment/water/tenstates/standards.html.

“Transient noncommunity water system” or *“TNC”* is defined in 40 CFR §141.2.

“Treatment technique” or *“TT”* means a treatment process required to minimize the level of a contaminant in drinking water. A treatment technique is specified in cases where it is not technically or economically feasible to establish an MCL, and it is an enforceable procedure or level of technological performance which PWSs must follow to ensure control of a contaminant.

“Uncovered finished water storage facility” is defined in 40 CFR §141.2. Such facilities are prohibited.

“Unregulated contaminant” means a contaminant for which no MCL has been set, but which does have federal monitoring requirements for certain PWSs set forth in 40 CFR §141.40, and additional reporting requirements in 567—40.7(455B).

“Viability” means the technical, financial, and managerial ability to comply with applicable national primary drinking water standards as adopted by the state of Iowa. Viability is the ability of a system to remain in compliance insofar as the requirements of the SDWA.

“Waterborne disease outbreak” means the significant occurrence of acute infectious illness, epidemiologically associated with the ingestion of water from a PWS that is deficient in treatment, as determined by the Iowa department of health and human services.

“Water distribution system” is defined in Iowa Code section 455B.211. The term includes any storage facilities and pumping stations.

“Water main pipe” means a water main complying with the department’s standards for water main construction.

40.2(2) *Definitions in Iowa Code and the CFR.* The following terms are defined in the referenced locations.

- a. Iowa Code section 455B.101: “commission,” “department,” and “director.”
- b. Iowa Code section 455B.171: “maximum contaminant level.”
- c. 40 CFR §141.2: “bag filters,” “bank filtration,” “cartridge filters,” “coagulation,” “combined distribution system” or “CDS,” “community water system” or “CWS,” “compliance cycle,” “compliance period,” “comprehensive performance evaluation” or “CPE,” “confluent growth,” “contaminant,” “conventional filtration treatment,” “corrosion inhibitor,” “diatomaceous earth filtration,” “direct filtration,” “disinfectant,” “disinfection,” “dose equivalent,” “effective corrosion inhibitor residual,” “enhanced coagulation,” “enhanced softening,” “filter profile,” “filtration,” “finished water,” “flocculation,” “flowing stream,” “GAC20,” “gross alpha particle activity,” “gross beta particle activity,” “haloacetic

acids” or “HAA5,” “halogen,” “lake” or “reservoir,” “large water system,” “legionella,” “level 1 assessment,” “locational running annual average” or “LRAA,” “man-made beta particle and photon emitters,” “maximum contaminant level” or “MCL,” “maximum contaminant level goal” or “MCLG,” “maximum residual disinfectant level” or “MRDL,” “maximum residual disinfectant level goal” or “MRDLG,” “medium-size water system,” “membrane filtration,” “noncommunity water system” or “NCWS,” “optimal corrosion control treatment,” “performance evaluation sample,” “picocurie” or “pCi,” “plant intake,” “point of disinfectant application,” “point-of-entry treatment device” or “POE,” “presedimentation,” “rem,” “repeat compliance period,” “residual disinfectant concentration,” “sanitary defect,” “seasonal system,” “single-family structure,” “slow sand filtration,” “small water system,” “standard sample,” “supplier of water,” “surface water” or “SW,” “SUVA,” “too numerous to count,” “total organic carbon” or “TOC,” “total trihalomethanes” or “TTHM,” “trihalomethane” or “THM,” “two-stage lime softening,” “virus,” and “wholesale system.”

40.2(3) *References and abbreviations.*

a. References. The abbreviated name of the professional associations and societies whose standards are referenced in this division and the websites where the standards, methods, or guidance documents may be obtained are listed in the following table. Unless otherwise noted in a specific rule of this division, the effective date of the specific standards, editions, or volumes is September 1, 2024.

Abbreviated Name	Association/Society Name	Standards/Publications Website
ANSI	American National Standards Institute	webstore.ansi.org
APHA	American Public Health Association	www.apha.org
API	American Petroleum Institute	www.api.org/products-and-services/standards
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers	www.ashrae.org/technical-resources/standards-and-guidelines
ASME	American Society of Mechanical Engineers	www.asme.org/codes-standards

ASTM	Annual Book of Standards published by ASTM International	www.astm.org/products-services/standards-and-publications.html
AWS	American Welding Society	www.aws.org/Standards-and-Publications
AWWA	American Water Works Association	www.awwa.org/Publications/Standards
Iowa DOT	Iowa department of transportation	iowadot.gov/specifications
NACE	National Association of Corrosion Engineers International, part of the Association for Materials Protection and Performance (AMPP)	www.ampp.org/standards/ampp-standards/about-ampp-standards
NARA	National Archives and Records Administration	www.archives.gov
NEC	National Electrical Code, part of the National Fire Codes published by the National Fire Protection Association (NFPA)	www.nfpa.org
NEMI	National Environmental Methods Index	www.nemi.gov
NGWA	National Ground Water Association	www.ngwa.org/publications-and-news/industry-resource-library
NSF	National Sanitation Foundation	www.nsf.org/nsf-standards
NTIS	National Technical Information Service, a bureau of the U.S. Department of Commerce	www.ntis.gov
Standard Methods, SM, or SM Online	Standard Methods for the Examination of Water and Wastewater, published by the American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF)	www.standardmethods.org
USGS	United States Geological Survey	www.usgs.gov
WSC	Water Systems Council	www.watersystemscouncil.org/resources/well-standards

b. Abbreviations. In addition to the abbreviations listed in the definitions in 40.2(1), the following abbreviations are used in this division.

Abbreviation	Meaning
ALE	action level exceedance
ASR	aquifer storage and recovery
CCR	consumer confidence report
CCT	corrosion control treatment
CDC	Centers for Disease Control and Prevention
CEU	continuing education unit
DBP	disinfection byproduct
DIT	direct integrity test
DOC	dissolved organic carbon
DRC	direct responsible charge
EPA	U.S. Environmental Protection Agency
FDA	U.S. Food and Drug Administration
ft	foot
GAC	granular activated carbon
GW	groundwater
HAA	haloacetic acids
HAL	health advisory level
HPC	heterotrophic plate count

ID	identification (number)
IDSE	initial distribution system evaluation
IFA	Iowa finance authority
IGS	Iowa geological survey
IOC	inorganic chemical
IWFDS	Iowa Wastewater Facilities Design Standards
L	liter
LRV	log removal value
LSLR	lead service line replacement
MDL	method detection limit
µg/L	microgram per liter
mg/L	milligram per liter
mL	milliliter
mm	millimeter
MOR	monthly operating report
mrem	1/1000 of a rem
MRT	maximum residence time
MS	matrix spike
NRCS	Natural Resources Conservation Service (part of the U.S. Department of Agriculture)
NTU	nephelometric turbidity units
O&M	operation and maintenance
OCC	optimal corrosion control
OCCT	optimal corrosion control treatment
OEL	operational evaluation level
OWQP	optimal water quality parameter
OXID	oxidation
P/A	presence-absence
PAC	powdered activated carbon
PCB	polychlorinated biphenyl
pCi/L	picocuries per liter
PE	public education
PN	public notice
PQL	practical quantification level
psi	pounds per square inch
PTA	packed tower aeration
PVC	polyvinyl chloride
QCRV	quality control release value
RAA	running annual average
RDC	residual disinfectant concentration
SCH	schedule (as in schedule 40 rating)
SD	separation distance
SDR	standard dimension ratio
SEP	source/entry point
SMP	standard monitoring plan
SMR	self-monitoring requirement
SOC	synthetic organic chemical
SW/IGW	surface water/influenced groundwater
SRF	state revolving fund (see DWSRF)
TRC	total residual chlorine
U.S.C.	United States Code
URTH	unacceptable risk to health
UV	ultraviolet
VOC	volatile organic chemical
WCP	watershed control program

567—40.3(17A,455B) Forms. All forms used by the public to apply for department approvals and to report on activities related to the department’s public water supply program may be obtained on the department’s website at www.iowadnr.gov or upon request. Properly completed forms shall be submitted to the department as noted in the form instructions.

40.3(1) *Construction permit application forms.* The required public water supply construction permit application forms (also known as schedules) and other forms are listed below.

Schedule No.	Form Name	Form Number
-	Water Supply Service Agreement	542-3121
1a	General Information	542-3178
1b	Minor Water Main Construction Permit	542-3151
1c	Fee Calculations	542-3179
2a	Water Mains, General	542-3030
2b	Water Mains, Specifications	542-3031
2c	Notification of Minor Water Main Construction	542-3152
3a	Water System, Design Capacity Data	542-3032
3b	Source Information	542-3029
3c	Water Quality Data	542-3028
4	Site Approval	542-3078
5a	Well Construction	542-3027
5b	Well Appurtenances	542-3026
5c	Well Profile	542-3077
5d	Surface Water Supply	542-3139
6a	Distribution Water Storage Facilities	542-3140
7	Schematic Flow Diagram	542-3142
8	Aeration	542-3143
9	Clarification-Sedimentation	542-3144
10	Suspended Solids Contact	542-3145
11	Ion Exchange	542-3146
12	Filters	542-3147
13a	Chemical Addition	542-3241
13b	Dry Chemical Addition	542-3130
13c	Gas Chlorination	542-3131
13d	Fluoridation	542-3132
13e	Sampling and Testing	542-3133
14	Pumping Station	542-3134
15	Water Storage Facilities	542-3135
16a	Wastewater General	542-3136
16b	Waste Treatment Ponds	542-3137
16c	Filtration and Mechanical	542-3138
16d	Discharge to Sewer	542-3103
-	Notification of Completion of Construction	542-3019

40.3(2) *Operation permit and public water supply forms.* The required public water supply sampling forms and the operation permit application and monthly operating report (MOR) forms are available from the department.

567—40.4(17A,455B) PWS construction permit application procedures.

40.4(1) *General procedures.* Applications for written department approval for any new construction or for reconstruction pursuant to 567—Chapter 43 shall consist of complete plans and specifications, an application fee, and appropriate water supply construction permit application schedules.

a. The department will review a construction permit application and issue a construction permit for project approval if the review shows that a project meets all construction standards, in accordance with 567—Chapter 43. Projects that do not meet all construction standards will not be approved unless a waiver pursuant to 567—paragraph 43.3(2) “b” is granted. A waiver may be requested when plans and specifications are submitted or after a design discrepancy is pointed out to the applicant.

b. The department may review project plans and specifications and provide comments or recommendations to the applicant. Departmental comments and recommendations are advisory, except when departmental review determines that a facility does not comply with department-approved plans or specifications or the construction standards, pursuant to the criteria for project design certification. The system owner must correct any deficiencies in a timely manner, as set forth by the department.

40.4(2) *Site survey.* For public water sources and for below-ground level finished water storage facilities, a site survey and approval must be made by the department. The manner and procedures for applying for and processing a site survey are the same as in 40.4(1), except that the following information must be submitted by the applicant’s engineer.

a. A preliminary engineering report or cover letter containing a brief description of the proposed source or storage facility and assurance that the project is in conformance with the long-range planning of the area.

b. Completed Schedules 1a and 4.

c. A detailed map showing all potential sources of contamination (567—Chapter 43, Table A, contains more information) within:

- (1) 1,000 feet of a proposed well location, with a scale no smaller than one inch = 200 feet;
- (2) 200 feet of a proposed below-ground level finished water storage facility;
- (3) 2,500 feet from a proposed surface water source, with a scale no smaller than one inch = 660 feet;
- (4) 2,500 feet from an impoundment (within the drainage area), with a scale no smaller than one inch = 660 feet; or
- (5) Six miles upstream of a proposed river intake.

40.4(3) *Modifications of an approved construction project.* Persons seeking to modify a water supply construction project after receiving a construction permit from the department shall submit the appropriate fee and either an addendum to plans and specifications, a change order, or revised plans and specifications at least 30 days prior to the planned modification. The department shall review the submitted material within 30 days of submission and shall issue a supplemental permit if the proposed modifications meet department standards.

40.4(4) *Certification of project design.* A permit shall be issued for the construction, installation, or modification of a PWS or for a water supply distribution system extension if a qualified, licensed professional engineer certifies that the plans and specifications comply with federal and state laws and regulations or that a waiver to standards has been granted by the department.

567—40.5(455B) Public notice (PN).

40.5(1) *Applicability.* Each owner or operator of a public water supply system (PWS) must give notice for all violations of public drinking water rules and for other situations, as listed in this subrule. The term “violations” includes violations of, or failure to comply with, the maximum contaminant level (MCL), maximum residual disinfection level (MRDL), treatment technique (TT), monitoring requirements, and testing procedures in 567—Chapters 40, 41, and 43. The term “other situations” includes all situations determined by the department to require a PN, including the violations and situations listed in 40.5(2), 40.5(3), and 40.5(4), and any other situation where the department determines that PN is needed. PN is not required for ammonia monitoring conducted pursuant to 567—subrule 41.11(2).

a. PN tiers. PN requirements are divided into three tiers to account for the seriousness of a violation or situation and of any potential adverse health effects that may be involved. The PN requirements for each violation or situation are determined by the tier to which it is assigned.

(1) Tier 1 PN is required for all drinking water violations and situations with significant potential to have serious adverse effects on human health as a result of short-term exposure.

(2) Tier 2 PN is required for all other drinking water violations and situations with potential to have serious adverse effects on human health.

(3) Tier 3 PN is required for all other drinking water violations and situations not included in Tier 1 or Tier 2.

b. General PN requirements. Each PWS must provide PN to persons served by the system, in accordance with this rule. A copy of the notice must also be sent to the department, in accordance with 40.8(1) “c. ”

(1) Consecutive systems. PWSs that sell or otherwise provide drinking water to other PWS (i.e., to consecutive systems) are required to provide PN to the owner or operator of the

consecutive system. The consecutive system is responsible for providing PN to the persons it serves and must meet the appropriate tier requirements for the violation.

(2) Physically or hydraulically isolated distribution systems. If a PWS has a violation in a portion of the distribution system that is physically or hydraulically isolated from other parts of the distribution system, the department may allow the system to limit distribution of the PN only to persons served by that portion of the system that is out of compliance. Department permission to limit distribution of the notice must be granted in writing.

40.5(2) *Tier 1 PN requirements.*

a. Tier 1 PN—when required. The following violations or situations require Tier 1 PN:

(1) Violation of the *E. coli* MCL, as specified in 567—paragraph 41.2(1) “a.”

(2) Violation of either the nitrate or nitrite MCL, as defined in 567—subparagraph 41.3(1) “b”(1).

(3) Failure by the system to collect a confirmation sample within 24 hours of its receipt of the first sample result showing a nitrate or nitrite MCL exceedance, when directed by the department, as specified in 567—paragraph 41.3(1) “c”(7)“2.”

(4) Exceedance of the nitrate MCL by NCWSs, where permitted to exceed the MCL by the department under 567—paragraph 41.3(1) “a,” as required in 40.5(7) “c.”

(5) Violation of the chlorine dioxide MRDL when one or more samples, taken in the distribution system on the day following an MRDL exceedance in the sample collected at the entrance to the distribution system, exceeds the MRDL, as defined in 567—paragraph 43.6(1) “b.”

(6) Failure by the system to collect the required chlorine dioxide samples in the distribution system on the day following an MRDL exceedance in the sample collected at the entrance to the distribution system.

(7) Violation of the TT requirement by a surface water (SW) or influenced groundwater (IGW) PWS resulting from an exceedance of the maximum allowable turbidity limit, as specified in 567—Chapter 43, where the department determines, after consultation with the system, that a Tier 1 PN is required or where the department consultation does not take place within 24 hours after the system learns of the violation.

(8) Occurrence of a waterborne disease outbreak or other waterborne emergency, such as a failure or significant interruption in key water treatment processes, a natural disaster disrupting the water supply or distribution system, or a chemical spill or unexpected loading of possible pathogens into the source water that significantly increases the potential for drinking water contamination.

(9) Other violations or situations with significant potential to have serious adverse effects on human health as a result of short-term exposure, as determined by the department either in its rules or on a case-by-case basis.

(10) Detection of *E. coli*, enterococci, or coliphage in source water samples, as specified in 567—paragraphs 41.7(3) “a” and “b.”

b. Tier 1 PN—timing. PWSs must:

(1) Provide PN as soon as practical but no later than 24 hours after learning of the violation;

(2) Initiate consultation with the department as soon as practical, but no later than 24 hours after learning of the violation or situation, to determine additional PN requirements. For consultation after normal business hours, use the department’s Environmental Emergency Reporting Hotline, 515.725.8694; and

(3) Comply with any additional PN requirements established as a result of department consultation. Additional requirements may include the timing, form, manner, frequency, and content of repeat PNs (if any) and other actions designed to reach all persons served.

All NTNCs must notify the parent or legal guardian of each child under 18 years of age and any nursing home resident of the Tier 1 violation as soon as possible and within 72 hours, including the PN content in 40.5(5).

c. Tier 1 PN—form and manner. PWSs must provide PN within 24 hours in a form and manner reasonably calculated to reach all persons served. The form and manner used must fit the specific situation and must be designed to reach residential, transient, and nontransient users of the system. To reach all persons served, systems shall use one or more of the following forms of delivery. The department may require multiple forms of delivery in specific situations.

- (1) Appropriate broadcast media, such as radio or television;
- (2) Posting of the PN in conspicuous locations throughout the area served;
- (3) Hand delivery of the PN to persons served; or
- (4) Another delivery method approved in writing by the department.

40.5(3) *Tier 2 PN requirements.*

a. Tier 2 PN—when required. The following violations or situations require Tier 2 PN:

- (1) All violations of the MCL, MRDL, and TT requirements, except where a Tier 1 PN is required under 40.5(2);
- (2) Violations of the monitoring and testing procedure requirements, where the department determines that a Tier 2 rather than a Tier 3 PN is required, accounting for potential health impacts and persistence of the violation;
- (3) Failure to comply with any compliance schedule in an operation permit, administrative order, or court order pursuant to 567—subrule 43.2(5);
- (4) Failure to comply with an HA as determined by the department; and

(5) Failure to take corrective action or failure to maintain at least 4-log virus treatment (using inactivation, removal, or a department-approved combination of 4-log virus inactivation and removal) before or at the first customer under 567—paragraph 41.7(4) “a. ”

b. Tier 2 PN—timing. PWSs must:

(1) Provide the initial PN as soon as practical but no later than 30 days after learning of a violation. If PN is posted, it must remain in place for as long as the violation or situation persists but in no case for less than seven days, even if the violation or situation is resolved. The department may allow additional time for the initial notice of up to three months from the date the system learns of the violation; however, such an extension must be made in writing on a case-by-case basis.

(2) Repeat the PN every three months as long as the violation or situation persists unless the department determines that circumstances warrant a different repeat frequency. A determination that a repeat PN frequency of longer than every three months is allowed must be made in writing on a case-by-case basis. The repeat PN frequency may not be less than once per year. Repeat PNs for an *E. coli* MCL violation, a TT violation under 567—paragraph 41.2(1) “a” or “l,” or a turbidity TT violation under 567—43.9(455B) or 567—43.10(455B) must be made every three months or more frequently.

(3) A PWS using SW or IGW with a TT violation resulting from a single exceedance of the maximum allowable turbidity limit, pursuant to 567—43.9(455B) or 567—43.10(455B), must consult with the department as soon as practical, but no later than 24 hours after learning of the violation, to determine whether a Tier 1 or Tier 2 PN is required to protect public health. For consultation after normal business hours, use the department’s Environmental Emergency Reporting Hotline, 515.725.8694. If the consultation does not occur within the 24-hour period, the PWS must distribute a Tier 1 PN within the next 24 hours, or no later than 48 hours after learning of the violation, following the requirements of 40.5(2) “b” and “c. ”

c. Tier 2 PN—form and manner. PWSs must provide the initial PN and any repeat PN in a form and manner that is reasonably calculated to reach persons served in the required time period. The PN form and manner may vary based on the specific situation and type of PWS, but the PN must meet the requirements of this paragraph unless directed otherwise in writing by the department.

d. Tier 2 PN—CWS PN methods. CWSs must provide PN by the following methods:

(1) Mail or other direct delivery to each customer receiving a bill and to other service connections receiving water from the PWS; and

(2) Any other method reasonably calculated to reach other persons regularly served by the system if they would not normally be reached by mail or direct delivery. Such persons may include those who do not pay water bills or do not have service connection addresses, such as renters, students, nursing home residents, or prison inmates. Other methods may include:

1. Publication in a local newspaper;
2. Delivery of multiple copies for distribution by customers that provide their drinking water to others, such as apartment building owners or large private employers;
3. Posting in public places served by the system or on the internet; or
4. Delivery to community organizations.

e. Tier 2 PN—NCWS PN methods. NCWSs (TNCs or NTNCs) must provide PN by the following methods:

(1) Posting PN in conspicuous locations throughout the distribution system frequented by persons served by the system or by mail or direct delivery to each customer and service connection (where known); and

(2) Any other method reasonably calculated to reach other persons served who would not normally be reached by posting, mail, or direct delivery. Such persons may include those who

may not see a posted PN because it is not in a location they routinely visit. Other methods may include:

1. Publication in a local newspaper or newsletter distribution to customers;
2. Use of email to notify employees or students; or
3. Delivery of multiple copies in central locations, such as community centers.

In addition to the previous requirements, NTNCs that serve children under 18 years of age (such as child care facilities, schools, and hospitals) or nursing home residents (including elder care facilities) must provide PN in writing to the parent or legal guardian of each person within the department-specified time period. The PN content must meet the requirements of 40.5(5).

40.5(4) *Tier 3 PN requirements.*

a. Tier 3 PN—when required. The following violations or situations require Tier 3 PN:

- (1) Monitoring violations or a failure to comply with a department-required testing procedure, except where a Tier 1 PN is required under this rule or where the department determines that a Tier 2 PN is required;
- (2) Availability of unregulated contaminant monitoring results, as required of certain PWSs by 40 CFR §141.40, in accordance with 40.5(7) “a”;
- (3) Exceedance of the fluoride level of 2.0 mg/L and not exceeding the MCL of 4.0 mg/L, in accordance with 40.5(7) “b”;
- (4) Failure to report required data or analytical results to the department;
- (5) Failure to meet the requirements of this chapter for PN, PE, or the development and distribution of the Consumer Confidence Report (CCR);
- (6) Failure to retain a certified operator in accordance with 567—subrule 43.1(5), where the department determines that PN is required;
- (7) Failure to maintain department-required records; and

(8) Any other situation where the department determines PN is needed.

b. Tier 3 PN—timing.

(1) Initial PN.

1. For violations or situations listed in 40.5(4) “a”(1), 40.5(4) “a”(4), or 40.5(4) “a”(5), PWSs must provide the initial PN within 12 months after learning of the violation or situation. If the violation pertains to a contaminant that could have acute health effects as determined by the department, such as coliform bacteria, nitrate, nitrite, or turbidity, the initial notice must be provided within three months. If the PN is posted, it must remain in place for as long as the violation or other situation persists, but in no case less than seven days, even if the violation or situation is resolved.

2. For availability of unregulated contaminant monitoring results pursuant to 40.5(4) “a”(2), the system must provide the initial PN within 12 months of receiving the results.

3. For 40.5(4) “a”(3), 40.5(4) “a”(6), or 40.5(4) “a”(7), the initial PN timing is at the department’s discretion but the notice must be made within 12 months of the violation or situation.

(2) Repeat PN.

1. For violations or situations listed in 40.5(4) “a”(1), 40.5(4) “a”(3), 40.5(4) “a”(4), or 40.5(4) “a”(5), PWSs must repeat the PN every 12 months in which the violation or situation persists. If the violation pertains to a contaminant that could have acute health effects, such as coliform bacteria, nitrate, nitrite, or turbidity, the system must repeat the PN every three months in which the violation or situation persists. If the PN is posted, it must remain in place for as long as the violation or other situation persists, but in no case less than seven days, even if the violation or situation is resolved.

2. For availability of unregulated contaminant monitoring results pursuant to 40.5(4) “a”(2), the system is not required to repeat the PN once the initial PN requirement has been met.

3. For 40.5(4) “a”(3), 40.5(4) “a”(6), or 40.5(4) “a”(7), the requirement for and timing of the repeat PN is at the department’s discretion. If required, the repeat PN must be made within 12 months of the initial PN.

c. Tier 3 PN—form and manner. PWSs must provide the initial PN and any repeat PN in a form and manner that is reasonably calculated to reach persons served in the required time period. The PN form and manner may vary based on the specific situation and type of system, but it must meet the requirements of this paragraph unless directed otherwise in writing by the department.

d. Tier 3 PN—CWS PN methods. CWSs must provide PN by:

(1) Mail or other direct delivery to each customer receiving a bill and to other service connections receiving water from the PWS; and

(2) Any other method reasonably calculated to reach other persons regularly served by the system if they would not normally be reached by mail or direct delivery. Such persons may include those who do not pay water bills or do not have service connection addresses, such as renters, students, nursing home residents, or prison inmates. Other methods may include:

1. Publication in a local newspaper;
2. Delivery of multiple copies for distribution by customers that provide their drinking water to others, such as apartment building owners or large private employers;
3. Posting in public places or on the internet; or
4. Delivery to community organizations.

(3) Use of the CCR for initial and repeat PNs. For CWSs, the CCR required under 567—40.7(455B) may be used as a vehicle for initial and repeat Tier 3 PNs as long as:

1. The CCR is provided to persons served within the time frames under 40.5(4) “b”;
2. The Tier 3 PN in the CCR follows the content requirements under 40.5(5); and
3. The CCR is distributed following the delivery requirements under 40.5(4) “c”(1) and 40.5(4) “c”(2).

e. Tier 3 PN—NCWS PN methods. NCWSs (TNCs and NTNCs) must provide PN by:

(1) Posting PN in conspicuous locations throughout the distribution system frequented by persons served by the system or by mail or direct delivery to each customer and service connection (where known); and

(2) Any other method reasonably calculated to reach other persons served if they would not normally be reached by the posted, mailed, or delivered notice. Such persons may include those who may not see a posted PN because it is not in a location they routinely visit. Other methods may include:

1. Publication in a local newspaper or newsletter distributed to employees;
2. Use of email to notify employees or students; or
3. Delivery of multiple copies in central locations, such as community centers.

40.5(5) PN content.

a. Required elements. Each PN must contain the following:

(1) A description of the violation or situation, including the contaminant(s) of concern and, as applicable, the contaminant level(s);

(2) When the violation or situation occurred;

(3) Any potential adverse health effects from the violation or situation, including the standard language in 40.5(5) “c”(1) or 40.5(5) “c”(2), where applicable;

(4) The population at risk, including subpopulations particularly vulnerable if exposed to the contaminant in their drinking water;

(5) Whether alternative water supplies or bottled water should be used or require a boil-water order;

(6) What actions consumers should take, including when they should seek medical help, if known;

(7) What the system is doing to correct the violation or situation;

(8) When the system expects to return to compliance or resolve the situation;

(9) The name, business address, and telephone number of the PWS owner, operator, or designee as a source of additional information concerning the PN; and

(10) A statement to encourage the PN recipient to distribute the notice to other persons served, using the standard language under 40.5(5) “c”(3), where applicable.

b. Appearance and presentation.

(1) Each PN must:

1. Be displayed in a conspicuous way when printed or posted;
2. Not contain overly technical language or very small print;
3. Not be formatted in a way that defeats the purpose of the notice; and
4. Not contain language that nullifies the purpose of the notice.

(2) Each PN must comply with multilingual requirements, as follows:

1. For PWSs serving a large proportion of non-English speaking consumers, as determined by the department, a PN must contain information about its importance in the appropriate language(s) or contain a telephone number or address where persons served may contact the system to obtain a translated copy of the notice or to request assistance in the appropriate language.

2. In cases where the department has not determined what constitutes a large proportion of non-English speaking consumers for a PWS, a PN must contain the same information as in

40.5(5) “b”(2)“1” above, where appropriate, to reach a large proportion of non-English speaking persons served by the system.

c. Standard language. PWSs must include the following statements in PNs:

(1) Health effects for MCL, MRDL, or TT violations. Each PN must include the health effects language in Appendix B to 40 CFR Part 141, Subpart Q, for the specific contaminant, disinfectant residual, or TT that incurred the violation.

(2) Monitoring and testing procedure violations. Each PN must include the following statement, including the bracketed language necessary to complete the notice, for all monitoring and testing procedure violations:

“We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During [compliance period], we [use either the phrase “did not monitor or test” or “did not complete all monitoring or testing,” whichever is more applicable] for [contaminant(s)], and therefore cannot be sure of the quality of your drinking water during that time.”

(3) Language to encourage PN distribution to all persons served. Each PN must include the following statement, where applicable:

“Please share this information with all the other people who drink this water, especially those who may not have received this notice directly, such as people in apartments, nursing homes, schools, and businesses. You can do this by posting this notice in a public place or distributing copies by hand or mail.”

40.5(6) *PN for new billing units or new customers.*

a. Community water systems (CWSs). CWSs must give a copy of the most recent PN for any continuing violation or other ongoing situations requiring PN to all new billing units or new customers prior to or at the time service begins.

b. Noncommunity water systems (NCWSs). NCWSs (TNCs and NTNCs) must continuously post the PN in conspicuous locations in order to inform new consumers of any continuing violation or other situation requiring PN for as long as the violation or other situation persists.

40.5(7) *Special PNs.*

a. Availability of unregulated contaminant monitoring results.

(1) Applicability. The owner or operator of a CWS or NTNC required to monitor under the federal unregulated contaminant monitoring rule must notify persons served by the system of the availability of such sample results no later than 12 months after the monitoring results are known.

(2) Form and manner. The special PN must follow the Tier 3 PN requirements in 40.5(4)“c” and must identify a person and provide the telephone number to contact for information on the monitoring results.

b. Fluoride level between 2.0 and 4.0 mg/L at CWSs or NTNCs.

(1) Applicability. CWSs and NTNCs that exceed the fluoride level of 2.0 mg/L as determined by the last single sample taken in accordance with 567—paragraph 41.3(1)“c” but do not exceed the MCL of 4.0 mg/L must provide the special PN in accordance with this paragraph to persons served. If the NTNC is a school or child care facility serving children under nine years of age, the system shall provide the PN in writing to the legal guardians of each child within the department-specified time period.

(2) Initial PN. A fluoride PN must be provided as soon as practical but no later than three months from the day the system learns of the exceedance. A copy of the notice must also be sent to all new billing units and new customers at the time service begins and to the Public Health Dental Director, Iowa Department of Health and Human Services, Lucas State Office Building, Des Moines, Iowa 50319-0075.

(3) Repeat PN. The PWS must repeat the fluoride PN at least every three months for as long as the fluoride level exceeds 2.0 mg/L. If the PN is posted, it must remain in place for as long as the fluoride level exceeds 2.0 mg/L but in no case less than seven days (even if the exceedance is eliminated). The department may require the repeat PN to be conducted more frequently.

(4) Form and manner. The form and manner of the fluoride PN, including repeat PNs, must follow the Tier 3 PN requirements in 40.5(4) “c.”

(5) Mandatory language. A fluoride PN must contain the following language, including the bracketed language necessary to complete the notice:

“This is an alert about your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth, called dental fluorosis. The drinking water provided by your public water system [PWS name] has a fluoride concentration of [analytical result] mg/L.”

“Dental fluorosis, in its moderate or severe forms, may result in a brown staining and pitting of the permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.”

“Drinking water containing more than 4.0 mg/L of fluoride (the U.S. Environmental Protection Agency’s drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4.0 mg/L of fluoride, but we are

required to notify you when we discover that the fluoride levels in your drinking water exceed 2.0 mg/L because of this cosmetic dental problem.”

“For more information, please call [PWS contact person] of [PWS name] at [telephone number]. Some home water treatment units are also available to remove fluoride from drinking water. In Iowa, home water treatment units are regulated under 641—Chapter 14, and the water treatment unit registration program is administered by the Health & Safety Division of the Iowa Department of Inspections, Appeals, and Licensing. In addition, you may call the National Sanitation Foundation (NSF) International at 1-877-867-3435.”

c. Nitrate level between 10 and 20 mg/L for NCWSs, where allowed by the department.
NCWSs granted permission by the department under 567—paragraph 41.3(1) “a” to exceed the nitrate MCL must:

(1) Provide PN to persons served according to the Tier 1 PN requirements under 40.5(2) “a” and “b.”

(2) Provide continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effects of exposure, according to the Tier 1 PN delivery requirements under 40.5(2) “c” and the content requirements under 40.5(5).

d. Repeated failure to conduct source water monitoring for Cryptosporidium.

(1) Applicability. The owner or operator of any PWS that is required to monitor source water under 567—43.11(455B) must notify persons served by the system that required monitoring has not been completed no later than 30 days after the system has failed to collect samples in any three months of monitoring, as specified in 567—paragraph 43.11(3) “a.” This special PN must be repeated as specified in 40.5(3).

(2) Form and manner. This special PN must follow the Tier 2 PN requirements in 40.5(3) and be presented as required in 40.5(5) “b.”

(3) Mandatory language. This special PN must contain the following language, including the language necessary to fill in the brackets.

“We are required to monitor the source of your drinking water for *Cryptosporidium*. Results of the monitoring are to be used to determine whether water treatment at the [treatment plant name] is sufficient to adequately remove *Cryptosporidium* from your drinking water. We are required to complete this monitoring and make this determination by [required bin determination date]. We [“did not monitor or test” or “did not complete all monitoring or testing”] on schedule and, therefore, we may not be able to determine by the required date what treatment modifications, if any, must be made to ensure adequate *Cryptosporidium* removal. Missing this deadline may, in turn, jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of [date]. For more information, please call [PWS contact person] of [PWS name] at [telephone number].”

(4) Each special PN must include a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.

e. Failure to determine bin classification or mean Cryptosporidium level.

(1) Applicability. The owner or operator of a PWS that is required to determine a bin classification under 567—subrule 43.11(5) must notify persons served by the system that the required determination has not been made no later than 30 days after the system has failed to report the determination, as specified in 567—paragraph 43.11(5) “c.” This special PN must be repeated as specified in 40.5(3). This PN is not required if the system is in compliance with a department-approved schedule to address the violation.

(2) Form and manner. This special PN must follow the Tier 2 PN requirements in 40.5(3) and be presented as required in 40.5(5) “b.”

(3) Mandatory language. This special PN must contain the following language, including the language necessary to fill in the brackets.

“We are required to monitor the source of your drinking water for *Cryptosporidium* in order to determine by [date] whether water treatment at the [treatment plant name] is sufficient to adequately remove *Cryptosporidium* from your drinking water. We have not made this determination by the required date. Our failure to do this may jeopardize our ability to have the required treatment modifications, if any, completed by the required deadline of [date]. For more information, please call [PWS contact person] of [PWS name] at [telephone number].”

(4) Each special PN must include a description of what the system is doing to correct the violation and when the system expects to return to compliance or resolve the situation.

40.5(8) *PN by department on behalf of a PWS.* The department may provide PN on behalf of a PWS owner or operator in compliance with this rule. However, the PWS owner or operator remains responsible for ensuring the PN requirements of this rule are met.

40.5(9) *Small water system—operation permit PN requirements.* When the department determines that a small PWS cannot promptly comply with one or more MCLs pursuant to 567—Chapter 41 and that there is no immediate, unreasonable health risk to persons served by the system, an operation permit will be drafted with interim contaminant levels or a compliance schedule. The department may require the applicant to present the reasons the small water system cannot come into immediate compliance. Prior to issuance of a final permit with a compliance schedule, notice and opportunity for public participation must be given in accordance with this subrule. The PN shall be circulated in a manner designed to inform interested and potentially interested persons of any proposed interim contaminant level or compliance schedule.

a. Small water system—PN preparation. A PN shall be prepared by the department and circulated by the applicant within its geographical area through publication in a local newspaper with general circulation or through mail or direct delivery to the system’s customers. The PN shall be mailed by the department to any person upon request.

b. Small water system—public comment period. The department shall provide a period of at least 30 days following the PN date during which time interested persons may submit their written views on the tentative determinations with respect to the operation permit. All written comments submitted during the 30-day comment period shall be retained by the department and considered in the formulation of the department's final determination with respect to the operation permit. The department may extend the comment period.

c. Small water system—PN content. A PN of a proposed operation permit shall contain at least the following:

- (1) The name, address, website, and telephone number of the department.
- (2) The name and address of the applicant.
- (3) A statement of the department's tentative determination to issue the operation permit.
- (4) A brief description of each applicant's operations that necessitate the proposed permit conditions.
- (5) A brief description of the procedures for the formulation of final determinations, including the 30-day comment period required by 40.5(9) "b."
- (6) The right to request a public hearing pursuant to 40.5(9) "d" and any other means by which interested persons may influence or comment upon those determinations.
- (7) The website location where interested persons may obtain further information, request a copy of the proposed operation permit prepared pursuant to this subrule, and inspect and copy the application forms and related documents.

d. Small water system—public hearings. The applicant or any interested agency, person or group of persons may request or petition for a public hearing with respect to a proposed operation permit.

- (1) Any such request or petition shall:
 1. Clearly state the issues to be addressed at a hearing;

2. Be filed with the department within the 30-day period prescribed in 40.5(9) “b”; and
3. Indicate the interest of the party filing the petition or request and the reasons why a hearing is warranted.

(2) The department shall hold an informal and noncontested case hearing if there is a significant public interest in holding a hearing, including the filing of requests or petitions for a hearing. Frivolous or insubstantial hearing requests may be denied by the department. Instances of doubt should be resolved in favor of holding a hearing.

(3) Any hearing held pursuant to this subrule shall be held in the geographical area of the system, or other appropriate area, at the department’s discretion.

(4) The department may, as appropriate, consider related groups of permit applications at a hearing.

e. Small water system—PN for public hearings. PN of any hearing held pursuant to this subrule shall:

(1) Be circulated at least as widely as the notice under 40.5(9) “a” at least 30 days in advance of the hearing.

(2) Contain at least the following:

1. The name, address, website, and telephone number of the department;
2. The name and address of each applicant whose application will be considered at the hearing;
3. A brief reference to the previously issued PN, including identification number and date of issuance;
4. The time and location for the hearing;
5. The purpose of the hearing;
6. A concise statement of the issues raised by the person requesting the hearing;

7. The website location where interested persons may obtain further information, request a copy of the draft operation permit or modification prepared pursuant to this subrule, and inspect and copy the application forms and related documents; and

8. A brief description of the nature of the hearing, including the rules and procedures to be followed.

f. Small water system—operation permit decision. The department shall issue or deny an operation permit within 30 days after a public hearing held pursuant to this subrule, or, if no public hearing is held, within 30 days after the end of the period for requesting a hearing.

567—40.6(455B) Lead consumer notice and public education (PE) for lead action level exceedance (ALE).

40.6(1) *Lead consumer notice.*

a. Reporting. All CWSs and NTNCs must provide a consumer notice of the individual lead tap water monitoring results required by 567—paragraph 41.4(1) “c” to the persons served at the tested sites (taps). Any system with a lead ALE shall also implement the PE requirements of 40.6(2).

b. Consumer notice timing. A system must provide the notice as soon as practical but no later than 30 days after the system learns of the tap monitoring results.

c. Consumer notice content. A consumer notice must contain the following:

- (1) Results of the lead tap water monitoring for the tested tap,
- (2) An explanation of the health effects of lead,
- (3) A list of steps consumers can take to reduce exposure to lead in drinking water,
- (4) PWS contact information, and
- (5) The lead MCLG of 0 mg/L, the 90th percentile lead AL of 0.015 mg/L, and the definitions for these two terms from 567—40.2(455B).

d. Consumer notice delivery. The notice must be provided to persons served at the tested tap either by mail or by another department-approved method. For example, upon department approval, an NTNC could post results on a bulletin board in the facility. Systems must provide the notice to customers at sample taps tested, including consumers who do not receive water bills.

e. Inclusion of copper results. Systems may also include copper testing results in the consumer notice, along with the 90th percentile copper ALE of 1.3 mg/L, copper MCLG of 1.3 mg/L, and copper health effects language.

40.6(2) Lead PE for lead ALE. Systems with a lead ALE based on tap water samples collected in accordance with 567—paragraph 41.4(1)“c” shall prepare and deliver PE materials and sample the tap water of any customer who requests it in accordance with this subrule.

a. Content of materials. Systems must include the following statements in written PE materials in the same order as listed in this paragraph. Language in 40.6(2)“a”(1), 40.6(2)“a”(2), and 40.6(2)“a”(5) must be included exactly as written, except for the bracketed text for which the system must substitute system-specific information. Any additional information presented by a system must be consistent with this paragraph and be in plain language that can be understood by the general public. Systems must submit all PE materials to the department prior to delivery. The department may require a system to obtain approval of the content of PE materials prior to delivery. PE materials must:

(1) Include the following statements exactly as written.

“IMPORTANT INFORMATION ABOUT LEAD IN YOUR DRINKING WATER.
[Insert system name] found elevated levels of lead in drinking water in some homes/buildings.
Lead can cause serious health problems, especially for pregnant women and young children.

Please read this information closely to see what you can do to reduce lead in your drinking water.”

“Health effects of lead. Lead can cause serious health problems if too much enters your body from drinking water or other sources. It can cause damage to the brain and kidneys, and can interfere with the production of red blood cells that carry oxygen to all parts of your body. The greatest risk of lead exposure is to infants, young children, and pregnant women. Scientists have linked the effects of lead on the brain with lowered IQ in children. Adults with kidney problems and high blood pressure can be affected by low levels of lead more than healthy adults. Lead is stored in the bones, and it can be released later in life. During pregnancy, the child receives lead from the mother’s bones, which may affect brain development.”

(2) Discuss lead and sources of lead, as follows:

1. Explain what lead is.
2. Explain possible sources of lead in drinking water, explain how lead enters drinking water, and include information on home/building plumbing materials and service lines that may contain lead.
3. Discuss other important sources of lead exposure in addition to drinking water (e.g., paint).

(3) Discuss steps the consumers can take to reduce their exposure to lead in drinking water, as follows:

1. Encourage running the water to flush out the lead.
2. Explain concerns with using hot water from the tap and specifically caution against the use of hot water for preparing baby formula.
3. Explain that boiling the water does not reduce lead levels.

4. Discuss other options consumers can take to reduce exposure to lead in drinking water, such as alternative sources or water treatment.

5. Suggest that parents have their child's blood tested for lead.

(4) Explain why there are elevated levels of lead in the system's drinking water (if known) and what the system is doing to reduce the lead levels in homes/buildings in this area.

(5) Include the following statement exactly as written.

"For more information, call us at [insert your telephone number] or visit our website at [insert your website link here]. For more information on reducing lead exposure around your home/building and the health effects of lead, visit EPA's website at www.epa.gov/lead or contact your health care provider."

(6) Include the following if the system is a CWS:

1. Tell consumers how to get their water tested.
2. Discuss lead in plumbing components and the difference between low lead and lead free.

b. Outreach to non-English speaking consumers. For PWSs serving a large proportion of non-English speaking consumers, as determined by the department, the PE materials must contain information about the importance of PE in the appropriate language(s) or contain a telephone number or address where persons served may contact the system to obtain a translated copy of the PE materials or to request assistance in the appropriate language.

c. PE materials delivery by CWS. A CWS that exceeds the lead ALE on the basis of tap water samples collected in accordance with 567—paragraph 41.4(1) "c" must conduct the following PE tasks within 60 days of the date of notification of the ALE. All PE materials must meet the content requirements of paragraph 40.6(2) "a. "

- (1) Deliver PE materials to all bill-paying customers.

(2) Contact customers who are most at risk by delivering PE materials to local public health agencies, even if they are not located within the system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or the CWSs users. Systems must contact the local public health agencies directly by phone or in person. The local public health agencies may provide a specific list of additional community-based organizations serving target populations, which may include organizations outside the system's service area. If such lists are provided, systems must deliver PE materials to all organizations on the provided lists.

(3) Contact customers who are most at risk by delivering PE materials to the following organizations that are located within the system's service area, along with an informational notice that encourages distribution to all the organization's potentially affected customers or the CWSs users:

1. Public and private schools or school boards;
2. Women, Infants, and Children (WIC) and Head Start programs;
3. Public and private hospitals and medical clinics;
4. Pediatricians;
5. Family planning clinics; and
6. Local welfare agencies.

(4) Make a good-faith effort to locate the following organizations within the service area and deliver PE materials, along with an informational notice encouraging distribution to all potentially affected customers or users. This effort to contact at-risk customers may include requesting a contact list of these organizations from the local public health agencies, even if the agencies are not located within the system's service area:

1. Licensed child care centers;
2. Public and private preschools;

3. Obstetricians, gynecologists, doulas, and midwives.

(5) No less often than quarterly, provide information with each water bill as long as the system exceeds the lead AL. The water bill must include the following statement exactly as written, except for the text in brackets for which the system must substitute system-specific information:

“[Insert system name] found high levels of lead in drinking water in some homes. Lead can cause serious health problems. For more information, please call [insert system telephone number] or visit [insert system website link here].”

The message or delivery mechanisms can be modified in consultation with the department; specifically, the department may allow a separate mailing of PE materials to customers if the system cannot place the information on water bills.

(6) Post PE material on the system’s website if the system serves a population greater than 100,000.

(7) Submit a press release to newspaper, television, and radio stations.

(8) In addition to those items previously listed, systems must implement at least three activities from one or more of the following categories. The educational content and appropriate activities must be determined in consultation with the department.

1. Public service announcement;
2. Paid advertisement;
3. Public area information displays;
4. Emails to customers;
5. Public meetings;
6. Household deliveries;
7. Targeted individual customer contact;
8. Direct material distribution to all multifamily homes and institutions; and

9. Other department-approved methods.

d. Continuing and special population PE by a CWS.

(1) As long as a CWS exceeds the AL, it must repeat the following activities:

1. Repeat the tasks in 40.6(2) “c”(1), 40.6(2) “c”(2), and 40.6(2) “c”(8) every 12 months.
2. Repeat the tasks in 40.6(2) “c”(5) with each billing cycle.
3. A CWS serving a population greater than 100,000 shall post and retain PE materials on a publicly accessible website pursuant to 40.6(2) “c”(6).
4. Repeat the task in 40.6(2) “c”(7) twice every 12 months on a schedule agreed upon with the department. The department can allow activities in 40.6(2) “c” to extend beyond the 60-day requirement on a case-by-case basis; however, this extension must be approved in writing by the department in advance of the 60-day deadline, and the system must already have initiated PE activities prior to the end of the 60-day deadline.

(2) A CWS meeting either of the following criteria may apply to the department in writing for reduced PE and community notice requirements:

1. The CWS is a facility, such as a prison or hospital, where the population served is not capable of or is prevented from making improvements to plumbing or installing POU treatment devices; or
2. The CWS provides water as part of the cost of services provided and does not separately charge for water consumption.

If the department approves the request in writing, the CWS is not required to include the language in 40.6(2) “a”(6) and must deliver the PE materials in accordance with 40.6(2) “e,” in lieu of 40.6(2) “c” and “d.”

(3) A CWS serving 3,300 or fewer people may limit certain aspects of its PE programs as follows:

1. The system must implement at least one of the activities in 40.6(2) “c”(8).

2. The system may limit the distribution of the PE materials in 40.6(2)“c”(2) and 40.6(2)“c”(3) to facilities and organizations served by the system that are most likely to be visited regularly by pregnant women and children.

3. The department may waive the requirements of 40.6(2)“c”(7) for the system provided it distributes notices to every household served.

e. Delivery of and continuing PE by an NTNC.

(1) PE delivery by an NTNC. Within 60 days of the date of notification of the ALE, an NTNC shall deliver the specified PE materials as follows:

1. Post informational posters on lead in drinking water in a public place or common area in each of the buildings served by the system; and

2. Distribute informational pamphlets or brochures on lead in drinking water to each person served by the NTNC. The department may allow the system to utilize electronic transmission in lieu of or combined with printed materials as long as at least the same coverage is achieved. If the system serves children 18 years of age and under, such as a school or child care facility, the PE materials must be provided to the parents or legal guardians of the children.

(2) Continuing PE by an NTNC. An NTNC shall repeat the tasks in 40.2(2)“e”(1) at least once during each calendar year in which the system exceeds the lead AL. The department can allow activities in 40.2(2)“e”(1) to extend beyond the 60-day requirement on a case-by-case basis; however, this extension must be approved in writing by the department in advance of the 60-day deadline, and the system must already have initiated PE activities prior to the end of the 60-day deadline.

f. Discontinuation of PE activities. A CWS or NTNC may discontinue delivery of PE materials if it has met the lead AL during the most recent six-month monitoring period conducted pursuant to 567—paragraph 41.4(1)“c.” Such systems shall recommence PE in

accordance with this subrule if it subsequently exceeds the lead AL during any monitoring period.

g. Supplemental monitoring and notification of results. A system that fails to meet the lead AL on the basis of tap samples collected in accordance with ~~567—~~paragraph 41.4(1) “c” shall offer to sample the tap water of any customer who requests it. The system is not required to pay for collecting or analyzing the sample, nor is the system itself required to collect and analyze the sample.

~~567—~~40.7(455B) Consumer confidence reports (CCRs).

40.7(1) *Applicability and purpose.* This rule applies to all CWSs and establishes the requirements for the content of annual CCRs that CWSs must deliver to their customers. These CCRs must contain information on the quality of the water delivered by the systems and characterize the risks (if any) from exposure to contaminants in the drinking water in an accurate and understandable manner. The department may assign PN requirements and assess administrative penalties to any CWS that fails to fulfill the requirements of this rule.

40.7(2) *CCR delivery frequency.*

- a. Existing CWSs.* Existing CWSs must deliver CCRs annually by July 1.
- b. New CWSs.* New CWSs must deliver their first CCR by July 1 of the year after their first full calendar year in operation and annually thereafter.
- c. CWSs that sell water to another CWS.* A CWS that sells water to another CWS must deliver the applicable information in 40.3(7) to the buyer (or consecutive) system:

- (1) Annually by April 1, or
- (2) On a date mutually agreed upon by the seller and the purchaser and specifically included in a contract between the parties.

When a consecutive system sells water to another CWS, the seller must provide all applicable information in 40.3(7) to the CWS buying the water from them.

40.7(3) *CCR content—source water identification and definitions.* Each annual CCR must contain the following information.

a. Source water identification. A CCR must identify the source(s) of water delivered by the CWS, including:

- (1) Type of water (e.g., SW, groundwater (GW), GW purchased from another PWS).
- (2) Commonly used name of the aquifer, reservoir, or river (if any) and location of the body(ies) of water.
- (3) The availability of a source water assessment and the means to obtain it if an assessment has been completed. Systems are encouraged to highlight significant sources of contamination in the source water area if information is available. Where a system has received a source water assessment from the department, the CCR must include a brief summary of the system's susceptibility to potential sources of contamination using language provided by the department or its designee or written by the owner or operator.

b. Definitions. Each CCR using any of the following terms must include the applicable definitions of MCL, MCLG, MRDL, and MRDLG from 40 CFR §141.153.

(1) A CCR that contains data on a contaminant for which EPA has set a TT or an AL must include the applicable definitions from 40 CFR §141.153.

(2) A CCR that contains information regarding a Level 1 or Level 2 assessment required under 567—subrule 41.2(1) must include the applicable assessment definitions from 40 CFR §141.153.

40.7(4) *CCR content—information on detected contaminants.* This subrule specifies the information required in each CCR for contaminants subject to mandatory monitoring as follows: regulated contaminants subject to an MCL, AL, MRDL, or TT; contaminants for which monitoring is required by either 40 CFR §141.40 (unregulated contaminants), 567—subrule 41.9(1) (sodium), or 567—41.13(455B) (other contaminants); and, except as provided

under 40.7(6) “a,” contaminants with department-required monitoring that are detected in the finished water (disinfection byproducts (DBPs) or microbial contaminants), and *Cryptosporidium*. Ammonia monitoring conducted pursuant to 567—subrule 41.9(2) is not subject to this paragraph. For the purposes of this subrule, “detected” means at or above the levels prescribed as follows: inorganic contaminants in 567—subparagraph 41.3(1)“e”(1); VOCs and SOCs in 567—paragraph 41.5(1)“b”; radionuclide contaminants in 567—paragraph 41.8(1)“c”; DBPs in 567—paragraph 83.6(7)“a”(6)“3”; and other contaminants with HAs, as assigned by the department.

a. Contaminant data must be displayed in one or more tables. Any additional monitoring results that a CWS chooses to include in its CCR must be displayed separately.

(1) Contaminant data must be derived from data collected to comply with departmental monitoring and analytical requirements. Where a system is allowed to monitor for contaminants less often than once a year, the CCR table(s) must include the results, the most recent sampling date, and a brief statement indicating that the data in the CCR are from the most recent testing done in accordance with the regulations. No data older than five years need be included.

(2) For detected regulated contaminants listed in Appendix A to 40 CFR Part 141, Subpart O, the table(s) must contain:

1. The contaminant MCL, expressed as a number equal to or greater than 1.0 (as provided in Appendix A to 40 CFR Part 141, Subpart O);
2. The contaminant MCLG, expressed in the same units as the MCL;
3. If there is no MCL for a detected contaminant, the table(s) must indicate that there is a TT, or specify the AL applicable to that contaminant, and the CCR must include the definition for TT or AL, as appropriate.

(3) For contaminants subject to an MCL, except turbidity and *E. coli*, the table(s) must contain the highest contaminant level used to determine compliance with a primary drinking water standard and the range of detected levels, expressed in the same units as the MCL, as follows:

1. When MCL compliance is determined annually or less frequently: the highest detected level at any sampling point and the range of detected levels.

2. When MCL compliance is determined by calculating a running annual average (RAA) of all samples taken at a sampling point: the highest average of any of the sampling points and the range of all sampling points. For TTHM and HAA5 MCLs, systems must include the highest locational running annual average (LRAA) for TTHM and HAA5 and the range of individual sample results for all monitoring locations. If more than one location exceeds the TTHM or HAA5 MCL, the system must include the LRAAs for all locations that exceed the MCL.

3. When MCL compliance is determined on a systemwide basis by calculating an RAA of all samples at all sampling points: the average and range of detection. When rounding of results to determine MCL compliance is allowed by the regulations, rounding should be done prior to multiplying the results by the factor in Appendix A to 40 CFR Part 141, Subpart O.

(4) For turbidity: The highest single measurement and the lowest monthly percentage of samples meeting the turbidity limits specified in 567—43.5(455B), 567—43.9(455B), or 567—43.10(455B) for the filtration technology being used when turbidity is being reported pursuant to the cited rules. The CCR should include an explanation of the reasons for measuring turbidity.

(5) For lead and copper: the 90th percentile value of the most recent round of sampling and the number of sampling sites exceeding the AL.

(6) For *E. coli* analytical results under 567—subrule 41.2(1): the total number of positive samples.

(7) The likely source(s) of detected contaminants to the best of the owner's or operator's knowledge. If specific contaminant information is in sanitary surveys or source water assessments, it should be used. If the owner or operator lacks specific information on the likely contaminant source, the CCR must include one or more of the typical contaminant sources (from Appendix A to 40 CFR Part 141, Subpart O) that are most applicable to the system.

(8) If a CWS distributes water to its customers from multiple hydraulically independent distribution systems that are fed by different raw water sources, the CCR should identify each separate distribution system and the table(s) should contain a separate column for each service area. Alternatively, systems may produce separate CCRs tailored to include data for each service area.

(9) The table(s) must clearly identify any data indicating MCL, MRDL, or TT violations, and the CCR must contain a clear and readily understandable explanation of the violation, including:

1. The length of the violation;
2. The potential adverse health effects;
3. Actions taken by the system to address the violation; and
4. The relevant language from Appendix A to 40 CFR Part 141, Subpart O, describing the potential health effects.

(10) For detected unregulated contaminants for which monitoring is required, except *Cryptosporidium*, the table(s) must contain the average and range at which the contaminant was detected. The CCR may include a brief explanation of the reasons for monitoring for unregulated contaminants.

(11) CWSs may list the most recent results of the special sodium monitoring requirement, according to 567—subrule 41.11(1), in the CCR instead of providing a separate PN.

(12) If a contaminant that does not have an MCL, MRDL, TT, or AL is detected in the water, the PWS must contact the department for the specific health effects language, health advisory level (HAL), and contamination sources.

b. If monitoring indicates that *Cryptosporidium* may be present in the source water or the finished water, or that radon may be present in the finished water, the CCR must include:

- (1) A summary of the *Cryptosporidium* monitoring results;
- (2) The radon monitoring results; and
- (3) An explanation of the results' significance.

c. If a system has performed additional monitoring that indicates the presence of other contaminants in the finished water, it must report any results that may indicate a health concern. To determine if results may indicate a health concern, a CWS can inquire about a current or proposed MCL, MRDL, TT, AL, or HA by contacting the department or by calling the National Safe Drinking Water Hotline (800.426.4791). The department considers the detection of a contaminant above a proposed MCL or HAL to indicate possible health concerns. For such contaminants, the CCR should include:

- (1) The monitoring results; and
- (2) An explanation of the results' significance, noting the existence of an HA or a proposed regulation.

d. If a system was required to comply with the federal Information Collection Rule pursuant to 40 CFR Part 141, it must include the results of monitoring in compliance with 40 CFR §141.142 and 40 CFR 141.143. These results need only be included for five years from the date of the sample or until any of the detected contaminants become regulated and subject to routine monitoring requirements, whichever comes first.

40.7(5) *CCR content—compliance with 567—Chapters 41 and 43.* In addition to the requirements of 40.7(4) “a”(8), the CCR must note any violation of a requirement listed below that occurred during the year covered by the report and include a clear and readily understandable explanation of the violation, any potential adverse health effects, and the steps the system has taken to correct the violation. The system must note any violation of the following:

a. Monitoring and reporting of compliance data pursuant to 567—Chapters 41 and 43, including any contaminant with a MCL, TT, AL, or HA;

b. The following TTs:

(1) Filtration and disinfection prescribed by 567—43.5(455B). For systems that have failed to install adequate filtration or disinfection equipment or processes, or have had a failure of such equipment or processes that constitutes a violation, the CCR must include the following statement with the explanation of potential adverse health effects:

“Inadequately treated water may contain disease-causing organisms. These organisms include bacteria, viruses, and parasites which can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.”

(2) Lead and copper control requirements. For systems that fail to take one or more actions prescribed by 567—Chapters 41 and 43 pertaining to lead and copper, the CCR must include the relevant language from Appendix A to 40 CFR Part 141, Subpart O.

(3) Acrylamide and epichlorohydrin control technologies. Systems in violation of 567—subparagraph 41.5(1) “b”(3) must include the relevant language from Appendix A to 40 CFR Part 141, Subpart O, in their CCR.

c. Recordkeeping of compliance data pursuant to 567—Chapters 41 and 43;

d. Special monitoring requirements; and

e. Violation of an operation permit compliance schedule, administrative order, or judicial order.

40.7(6) *CCR content—operation permit or administrative order with a compliance schedule.* If a system has been issued a compliance schedule with an extension for compliance, the CCR must contain:

- a. An explanation of the reasons for the extension;
- b. The date on which the extension was issued;
- c. A brief status report on the steps the system is taking to install treatment, find alternative sources of water, or otherwise comply with the compliance schedule; and
- d. A notice of any opportunity for public input in the review or renewal of the compliance schedule.

40.7(7) *CCR content—mandatory CCR language explaining contaminant occurrence.* CCRs must contain a brief explanation regarding contaminants that may reasonably be expected to be found in drinking water, including bottled water. This explanation may include the statements in 40.7(7) “a” through 40.7(7) “c”. Paragraph 40.7(7) “d” is provided as a minimal alternative to 40.7(7) “a”(1) through 40.7(7) “c”(3). Systems may also develop their own comparable language. A CCR must include the language of 40.7(8).

a. “The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive material, and can pick up substances resulting from the presence of animals or from human activity.”

b. “Contaminants that may be present in source water include:”

(1) “Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.”

(2) “Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.”

(3) “Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.”

(4) “Organic chemical contaminants, including synthetic and volatile organics, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.”

(5) “Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.”

c. “In order to ensure that tap water is safe to drink, the department prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.”

d. “Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the National Safe Drinking Water Hotline ((800)426-4791).”

40.7(8) *Required additional health information.*

a. All systems.

(1) All CCRs must prominently display the following statement:

“Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or

other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the national Safe Drinking Water Hotline ((800)426-4791).”

(2) Systems may write their own educational statements for arsenic in 40.7(8)“b”(1), nitrates in 40.7(8)“c,” and lead in 40.7(8)“d” but only in consultation with the department.

b. Arsenic.

(1) A CWS that detects arsenic at levels above 0.005 mg/L and less than or equal to 0.010 mg/L must include in its CCR a short information statement about arsenic, using language such as:

“While your drinking water meets EPA’s standard for arsenic, it does contain low levels of arsenic. EPA’s standard balances the current understanding of arsenic’s possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.”

(2) A CWS that detects arsenic above 0.010 mg/L and less than or equal to 0.05 mg/L must include in its CCR the arsenic health effects language in Appendix A to 40 CFR Part 141, Subpart O.

c. Nitrates.

(1) A system that detects nitrate at levels above 5.0 mg/L (half the MCL) but below the MCL must include in its CCR a short informational statement about the impacts of nitrate on children, using language such as:

“Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant you should ask advice from your health care provider.”

(2) A system that detects nitrite at levels above 0.50 mg/L (half the MCL) but below the MCL must include in its CCR a short informational statement about the impacts of nitrite on children, using language such as:

“Nitrite in drinking water at levels above 1 ppm is a health risk for infants of less than six months of age. High nitrite levels in drinking water can cause blue baby syndrome. If you are caring for an infant you should ask advice from your health care provider.”

d. Lead. All systems must include in their CCR a short informational statement about lead in drinking water and the effects it has on children, using language such as:

“If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from material and components associated with service lines and home plumbing. [Insert name of system] is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the National Safe Drinking Water Hotline (800)426-4791 or at www.epa.gov/safewater/lead.”

e. Total trihalomethanes (TTHMs). A CWS that detects TTHMs above 0.080 mg/L but below the MCL in 567—subrule 41.5(1) as an annual average, monitored and calculated under

the provisions of ~~567—~~paragraph 41.5(1)“e,” must include in its CCR the health effects language for total trihalomethanes listed in Appendix A to 40 CFR Part 141, Subpart O.

40.7(9) *Additional mandatory CCR requirements.*

a. The CCR must include the telephone number of the owner, operator, or designee of the CWS as a source of additional information concerning the report.

b. In communities with a large proportion of non-English speaking residents, as determined by the department, the CCR must contain information regarding the importance of the CCR in the appropriate language(s) or contain a telephone number or address where such residents may contact the system to obtain a translated copy of the report or assistance in the appropriate language.

c. The CCR must include information (e.g., time and place of regular board meetings) about opportunities for public participation in decisions that may affect the quality of the water.

d. Systems may include such additional information as they deem necessary for the PE, consistent with, and not detracting from, the purpose of the CCR.

e. Systems required to comply with the GW rule (~~567—~~41.7(455B)) must include the following in the CCR, when applicable:

(1) Any GW system that receives notice from the department of a significant deficiency must inform its customers of any significant deficiency that is uncorrected at the time of the next CCR. The system must continue to inform the public annually until the department determines that particular deficiency is corrected. Each CCR must include the following:

1. The nature of the particular significant deficiency and the date the deficiency was identified by the department; and

2. For each significant deficiency, the department-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed.

If directed by the department, a system with one or more significant deficiencies that have been corrected before the next CCR must inform its customers of the deficiencies, how the deficiencies were corrected, and the date(s) of correction.

(2) Any GW system that receives notice from the department or laboratory of a fecal indicator-positive GW source sample that is not invalidated under 567—paragraph 41.7(3) “d” must inform its customers of such a sample in the next CCR. The system must continue to inform the public annually until the department determines that the fecal contamination in the GW source is addressed under 567—paragraph 41.7(4) “a.” Each CCR must include the following:

1. The fecal contamination source (if known) and the dates of the fecal indicator-positive GW source samples;

2. Whether the fecal contamination in the GW source has been addressed under 567—paragraph 41.7(4) “a” and the date of such action;

3. For each fecal contamination in the GW source that has not been addressed under 567—paragraph 41.7(4) “a,” the department-approved plan and schedule for correction, including interim measures, progress to date, and any interim measures completed; and

4. The potential health effects, using the “Fecal coliform or *E. coli*” or “Fecal Indicators (enterococci or coliphage)” health effects language in Appendix A to 40 CFR Part 141, Subpart O.

f. Pursuant to 567—subrule 41.2(1), any system required to conduct a Level 1 or Level 2 assessment that is not due to an *E. coli* MCL violation must include in the CCR the statements below in 40.7(9) “f”(1) through 40.7(9) “f”(3), as appropriate, filling in the blanks accordingly and including the appropriate statements in 40.7(9) “f”(4).

- (1) “Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that the

potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.”

(2) “During the past year, we were required to conduct [insert number of required Level 1 assessments] Level 1 assessment(s). [Insert number of completed Level 1 assessments] Level 1 assessment(s) were completed. In addition, we were required to take [insert number of required corrective actions] corrective actions, and we completed [insert number of completed corrective actions] of these actions.”

(3) “During the past year, [insert number of required Level 2 assessments] Level 2 assessments were required to be completed for our water system. [Insert number of completed Level 2 assessments] Level 2 assessment(s) were completed. In addition, we were required to take [insert number of required corrective actions] corrective actions, and we completed [insert number of completed corrective actions] of these actions.”

(4) Any system that has failed to complete all the required assessments or correct all identified sanitary defects is in violation of the TT requirement and must also include one or both of the following statements in its CCR, as appropriate:

1. “During the past year, we failed to conduct all of the required assessment(s).”
2. “During the past year, we failed to correct all identified defects that were found during the assessment.”

g. Pursuant to 567—subrule 41.2(1), any system required to conduct a Level 2 assessment due to an *E. coli* MCL violation must include the statements in 40.7(9)“g”(1) and 40.7(9)“g”(2) in its CCR as appropriate, filling in the blanks accordingly and including the appropriate text in 40.7(9)“g”(3).

(1) “*E. coli* are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.”

(2) “We were required to complete a Level 2 assessment because we found *E. coli* bacteria in our water system. In addition, we were required to take [insert number of required corrective actions] corrective actions, and we completed [insert number of completed corrective actions] of these actions.”

(3) Any system that has failed to complete the required assessment or correct all identified sanitary defects is in violation of the TT requirement and must also include one or both of the following statements in its CCR, as appropriate:

1. “We failed to conduct the required assessment.”
2. “We failed to correct all sanitary defects that were identified during the assessment that we conducted.”

h. Pursuant to 567—subrule 41.2(1), if a system detects *E. coli* and has violated the *E. coli* MCL, in addition to completing the CCR table(s) as required in 40.7(4), the system must include in its CCR one or more of the following statements to describe any noncompliance, as applicable:

- (1) “We had an *E. coli*-positive repeat sample following a total coliform-positive routine sample.”
- (2) “We had a total coliform-positive repeat sample following an *E. coli*-positive routine sample.”

(3) “We failed to take all required repeat samples following an *E. coli*-positive routine sample.”

(4) “We failed to test for *E. coli* when any repeat sample tested positive for total coliform.”

i. Pursuant to 567—subrule 41.2(1), if a system detects *E. coli* and has not violated the *E. coli* MCL, in addition to completing the CCR table(s) as required in 40.7(4), the system may include in its CCR a statement that explains that although the system has detected *E. coli*, the system is not in violation of the *E. coli* MCL.

40.7(10) CCR delivery.

a. Required CCR recipients. Each CWS must mail or otherwise directly deliver one copy of the CCR to each customer.

(1) Systems must make a good-faith effort to reach consumers who do not get water bills, using department-recommended means. An adequate good-faith effort will be tailored to the consumers who are served by the system but are not bill-paying customers. A good-faith effort would include a mix of methods appropriate to the particular system. Reports could be:

1. Posted on the internet;
2. Mailed to postal patrons in metropolitan areas;
3. Advertised in the news media;
4. Published in a local newspaper;
5. Posted in public places;
6. Delivered for distribution by single-billed customers such as apartment buildings or large private employers;
7. Delivered to community organizations.

(2) No later than the date the system is required to distribute the CCR to its customers, each CWS must provide the CCR to the department, followed within three months by a

certification that the CCR has been distributed to customers and that it is correct and consistent with the previously submitted compliance monitoring data.

(3) No later than the date the system is required to distribute the CCR to its customers, each CWS must deliver the report to any other agency or clearinghouse identified by the department, such as the Iowa department of health and human services or county board of health.

b. CCR availability. Each CWS must make its CCR available to the public upon request. Each CWS serving 100,000 or more persons must post its current year's CCR to a publicly accessible website.

c. CCR mailing requirement waiver for systems serving 10,000 or fewer in population. All CWSs serving fewer than 10,000 persons will qualify for a mailing waiver, except for those systems that have one or more exceedances of a MCL, TT, AL, or HA; an administrative order; a court order; significant noncompliance with monitoring or reporting requirements; or an extended compliance schedule in an operation permit. Even if a PWS qualifies for a mailing waiver, 40.7(10)“a” and “b” still apply to all CWSs. A mailing waiver is not allowed for the CCR covering the year during which one of the previously listed exceptions occurred. Systems qualifying for a mailing waiver must:

(1) Publish their CCR in one or more local newspapers serving the area where the system is located;

(2) Inform customers that their CCR will not be mailed, either in the newspapers in which the CCR is published or by other department-approved means; and

(3) Make their CCR available to the public upon request.

d. CCR mailing requirements waiver for systems serving 500 or fewer in population. All CWSs serving 500 or fewer persons will qualify for a mailing waiver, except for those systems that have one or more exceedances of an MCL, TT, AL, or HA; an administrative order; a

court order; significant noncompliance with monitoring or reporting requirements; or an extended compliance schedule in an operation permit. Systems serving 500 or fewer persons that qualify for the waiver may forego the requirements of 40.7(10) “c”(1) and 40.7(10) “c”(2) if they provide notice at least once per year to their customers that the CCR is available upon request, by mail, door-to-door delivery, or by posting in conspicuous places within the service area acceptable to the department. A mailing waiver is not allowed for the CCR covering the year during which one of the previously listed exceptions occurred. Even if a PWS serving 500 or fewer persons qualifies for a mailing waiver, 40.7(10) “a”(2), 40.7(10) “a”(3) and 40.7(10) “b” still apply.

567—40.8(455B) Reporting.

40.8(1) *Reporting requirements other than for lead and copper.*

a. When required by the department, a PWS shall report to the department within ten days following a test, measurement, or analysis required by this chapter and 567—Chapters 41 and 43, the results of that test, measurement, or analysis in the form and manner prescribed by the department. This shall include reporting of all positive detects within the same specific analytical method.

b. Except where a different reporting period is specified in this rule or 567—Chapters 41 and 43, a PWS shall report to the department within 48 hours after any failure to comply with the monitoring requirements in 567—Chapters 41 and 43. The PWS shall also notify the department within 48 hours of failure to comply with any primary drinking water regulations.

c. The PWS, within ten days of completion of each initial and repeat PNs required in 567—40.5(455B), shall submit to the department a certification that it has fully complied with the PN rules. The certification must include a representative copy of each type of notice distributed, published, posted, or made available to the persons served by the system or to the media.

d. Additional reporting requirements for the GW rule are listed in 567—paragraph 41.7(6) “a.”

e. Additional reporting requirements for the coliform rule are listed in 567—paragraph 41.2(1) “n.”

40.8(2) *Lead and copper reporting requirements.* All PWSs shall report all of the following to the department.

a. Reporting for tap water monitoring and water quality parameter (WQP) monitoring.

(1) Except as provided below in 40.8(2) “a”(1)“6,” a system shall report the information specified below for all tap water samples specified in 567—paragraph 41.4(1) “c” and all WQP samples specified in 567—paragraph 41.4(1) “d” within the first ten days following the end of each applicable monitoring period specified in 567—41.4(455B). For monitoring periods with a duration of less than six months, the end of the monitoring period is the last date samples can be collected during that period.

1. The results of all tap samples for lead and copper, including the location of each site and the site selection criteria;

2. Documentation for each tap water lead or copper sample for which the system requests invalidation pursuant to 567—paragraph 41.4(1) “c”(6)“2”;

3. The 90th percentile lead and copper concentrations measured from among all lead and copper tap water samples collected during each monitoring period (calculated in accordance with 567—subparagraph 41.4(1) “b”(3));

4. With the exception of initial tap sampling conducted pursuant to 567—paragraph 41.4(1) “c”(4)“1,” the system shall designate any site that was not sampled during previous monitoring periods and include an explanation of why sampling sites have changed;

5. For samples collected under 567—subparagraphs 41.4(1)“d”(2) through 41.4(1)“d”(5), tap sample results for pH; where applicable, alkalinity, calcium, conductivity, temperature, and orthophosphate or silica; and SEP sample results for applicable WQPs; and

6. The results of all WQP samples collected under 567—subparagraphs 41.4(1)“d”(3) through 41.4(1)“d”(6) during each six-month monitoring period in 567—subparagraph 41.4(1)“d”(4) within the first ten days following the end of the monitoring period unless the department has specified a more frequent reporting requirement.

(2) Certain systems that do not have enough taps that can provide first-draw samples and that have met the six-hour stand time criteria, such as an NTNC with 24-hour operation or a CWS meeting the criteria of 40.6(2)“d”(2), must either:

1. If the department has not approved the non-first-draw sample sites, provide written documentation to the department identifying stand times and locations for enough non-first-draw samples to make up its sampling pool under 567—paragraph 41.4(1)“c”(2)“5” by July 1, 2003; or

2. If the department has already approved the non-first-draw sample sites, identify each site that did not meet the six-hour minimum stand time and the length of stand time for that particular substitute sample (collected pursuant to 567—paragraph 41.4(1)“c”(2)“5.”) Certain systems already include this information in writing with the lead and copper tap sample results required by 567—paragraph 41.4(1)“d”(1)“1.”

(3) At a time specified by the department or, if no specific time is specified, then as early as possible prior to the addition of a new source or any long-term change in water treatment, a system subject to this subparagraph shall send written documentation to the department describing the addition or change. The department must review and approve the addition or change before it is implemented by the system.

1. Systems subject to this subparagraph are those that have optimized corrosion control under 567—subparagraph 43.7(1)“b”(3), are subject to reduced monitoring pursuant to 567—paragraph 41.4(1)“c”(4)“4,” or are subject to a monitoring waiver pursuant to 567—subparagraph 41.4(1)“c”(7).

2. Examples of long-term treatment changes include the addition of a new treatment process or modification of an existing process. Long-term changes can include dose changes to existing chemicals but do not include chemical dose fluctuations associated with daily water quality changes.

3. Examples of modifications include the switching of secondary disinfectants, coagulants, or corrosion inhibitor products. In those instances where prior department approval of a new source addition or long-term treatment change is not required, systems are encouraged to provide notification to the department beforehand to minimize the risk that the new source addition or treatment change will adversely affect optimal corrosion control (OCC).

(4) Any small system applying for or subject to a monitoring waiver under 567—subparagraph 41.4(1)“c”(7) shall provide the following information to the department in writing by the specified deadline:

1. By the start of the first applicable monitoring period in 567—subparagraph 41.4(1)“c”(4), any small system applying for a monitoring waiver shall provide documentation demonstrating that it meets the waiver criteria of 567—paragraphs 41.4(1)“c”(7)“1” and “2.”

2. No later than nine years after the monitoring previously conducted pursuant to 567—paragraph 41.4(1)“c”(7)“2” or 41.4(1)“c”(7)“4,” first bulleted paragraph, each small system desiring to maintain its monitoring waiver shall provide the information required by 567—paragraph 41.4(1)“c”(7)“4,” first and second bulleted paragraphs.

3. No later than 60 days after the system becomes aware that it is no longer free of lead- or copper-containing materials, as appropriate, each small system with a monitoring waiver shall provide written notification, setting forth the circumstances resulting in the lead- or copper-containing materials being introduced into the system and what corrective action, if any, the system plans to remove these materials.

(5) Each GW system that limits WQP monitoring to a subset of entry points under 567—paragraph 41.4(1) “d”(3)“3” shall provide, by the commencement of such monitoring, written correspondence to the department that identifies the selected entry points and includes information sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system.

b. Source water monitoring reporting.

(1) Systems shall report the sampling results for all source water samples collected within the first ten days following the end of each source water monitoring period in accordance with 567—paragraph 41.4(1) “e.”

(2) With the exception of the first round of source water sampling conducted pursuant to 567—subparagraph 41.4(1) “e”(2), the system shall specify any site that was not sampled during previous monitoring periods and include an explanation of why the sampling point has changed.

c. Corrosion control treatment (CCT) reporting. By the applicable dates in 567—subrule 43.7(1), systems shall report the following:

(1) For systems demonstrating that they have already optimized corrosion control, information required in 567—subparagraph 43.7(1) “b”(2) or 43.7(1) “b”(3).

(2) For systems required to optimize corrosion control, their recommendation regarding optimal corrosion control treatment (OCCT) under 567—paragraph 43.7(2) “a.”

(3) For systems required to evaluate the effectiveness of CCTs under 567—paragraph 43.7(2) “c,” the information required by that paragraph.

(4) For systems required to install OCC designated by the department under 567—paragraph 43.7(2) “d,” a letter certifying that the system has completed installing that treatment.

d. Source water treatment reporting. By the applicable dates in 567—subparagraph 43.7(3) “b”(1), systems shall provide the following to the department:

(1) If required under 567—subparagraph 43.7(3) “b”(1), their recommendation regarding source water treatment; and

(2) For systems required to install source water treatment under 567—subparagraph 43.7(3) “b”(1), a letter certifying that the system has completed installing the designated treatment within 24 months of the department designation.

e. Lead service line replacement (LSLR) reporting. Systems shall report the following to the department to demonstrate compliance with 567—subrule 43.7(4):

(1) No later than 12 months after the end of a monitoring period in which a system exceeds the lead AL when sampling pursuant to 567—paragraph 43.7(4) “a,” the system must submit written documentation of the material evaluation pursuant to 567—subparagraph 41.4(1) “c”(1), identify the initial number of lead service lines (LSLs) in its distribution system at the time it exceeds the lead AL, and provide its schedule for replacing annually at least 7 percent of the initial number of LSLs in its distribution system.

(2) No later than 12 months after the end of a monitoring period in which a system exceeds the lead AL when sampling pursuant to 567—paragraph 43.7(4) “a,” and every 12 months thereafter, the system shall demonstrate in writing that it has either:

1. Replaced in the previous 12 months at least 7 percent of the initial LSLs (or a greater number of lines specified by the department under 567—paragraph 43.7(4)“e” in its distribution system), or

2. Conducted sampling that demonstrates that the lead concentration in all service line samples from individual line(s), taken pursuant to 567—paragraph 41.4(1)“c”(2)“3,” is less than or equal to 0.015 mg/L. In such cases, the total number of lines replaced plus those lines meeting the criteria in 567—paragraph 43.7(4)“c” shall either equal at least 7 percent of the initial number of lead lines identified under 40.8(2)“e”(1) above or equal the percentage specified by the department under 567—paragraph 43.7(4)“e.” An LSL meeting the criteria of 567—paragraph 43.7(4)“c” may only be used to comply with the 7-percent criteria for a specific year and may not be used again to calculate compliance with the 7-percent criteria in future years.

(3) The annual letter submitted under 40.8(2)“e”(2) above shall contain the following:

1. The number of LSLs scheduled to be replaced during the previous year of the system’s replacement schedule;

2. The number and location of each LSL replaced during the previous year of the system’s replacement schedule; and

3. If measured, the water lead concentration and location of each LSL sampled, the sampling method, and the sampling date.

(4) Any system that collects LSL samples following partial LSL replacement required by 567—subrule 43.7(4) shall report the results within the first ten days of the month following the month in which the system receives the laboratory results or as specified by the department. Systems shall also submit any additional requested information in a time and manner prescribed by the department to verify that all partial LSL replacement activities have taken place.

f. PE program reporting.

(1) Any system subject to the PE requirements in 40.6(2) shall, within ten days after the end of each period in which the system is required to perform PE, send written documentation to the department containing:

1. A demonstration that the system has delivered the PE materials that meet the content and delivery requirements in 40.6(2); and

2. A list of all the newspapers, radio stations, television stations, facilities, and organizations to which the system delivered PE materials during the PE period.

(2) Unless required by the department, a system that previously submitted the information required by 40.8(2) “f”(1) “2” need not resubmit the same information, provided there have been no changes in the distribution list and the system certifies that the PE materials were distributed to the same list previously submitted. This certification is due within ten days after the end of each period in which the system is required to perform PE.

(3) No later than three months following the end of the monitoring period, each system must mail a sample copy of the consumer notice of tap results to the department along with a certification that the notice has been distributed in a manner consistent with 40.6(1).

g. Additional monitoring data reporting. A system that collects sampling data in addition to that required by 567—Chapters 41 and 43 shall report the results to the department within the first ten days following the end of the applicable monitoring period under 567—paragraphs 41.4(1) “c,” “d,” and “e” during which the samples are collected.

40.8(3) *PWS operation and maintenance.*

a. Required operation records.

(1) Monthly operation records (MORs) shall be completed by all PWSs on forms provided by the department or on similar forms unless a PWS meets all of the following conditions:

1. Supplies an annual average of not more than 25,000 gpd or serves no more than an average of 250 individuals daily;

2. Is a CWS and does not provide any type of treatment, or is a NCWS (NTNC or TNC) that has only a cation-exchange softening or iron/manganese removal treatment unit, and meets the requirements of 40.8(3) “a”(4)“7”;

3. Does not utilize either a SW or an IGW, either in whole or in part, as a water source;

4. Does not use a TT such as blending to achieve compliance with an MCL, TT, AL, or HA.

(2) MORs shall be completed as described in 40.8(3) “a”(4), submitted to the department within ten days after the end of each month the system serves water to the public, and maintained at the facility for department inspection for a period of five years. For CWSs and NTNCs, the MOR must be signed by the certified operator in charge. For TNCs, the MOR, if required by the department, must be signed by the owner or the owner’s designee.

(3) In addition to the requirements of this paragraph, all PWSs using a SW or IGW source must also comply with the applicable recordkeeping requirements in 567—Chapter 43.

(4) MORs shall be completed as follows. Daily monitoring is seven days a week unless otherwise specified by the department.

1. Pumpage or flow. NCWS shall measure and record the total water used each week. Daily measurement and recording is recommended. CWS shall measure and record the total water used each day. Pumpage or flow reporting may be required in an operation permit where needed to verify MCL compliance.

2. General treatment effectiveness. Where treatment is practiced, the intended effect of the treatment shall be measured and recorded at locations and by methods which best indicate effectiveness of the treatment process, at a frequency specified in Appendix A of this chapter.

3. Primary standard treatment effectiveness. Where the raw water quality does not meet the requirements of 567—Chapters 41 and 43 and treatment is practiced to comply with an MCL, AL, TT, or HA, the primary standard constituent or an appropriate department-designated indicator constituent shall be measured and recorded daily. Reporting of these results will be required in the operation permit to verify MCL compliance.

4. Secondary standard treatment effectiveness. Where treatment is practiced to achieve the recommended level of any constituent designated in the federal secondary standards, measurements shall be conducted and recorded at a frequency specified in Appendix A of this chapter.

5. Chemical application. Chemicals, such as fluoride, iodine, bromine, and chlorine, that are potentially toxic in excessive concentration shall be measured and recorded daily. Recording shall include the amount of chemical applied each day. Where the PWS is attempting to maintain a residual of the chemical throughout the system, the residual in the system shall be measured and recorded daily. The quantity of all other chemicals applied shall be measured and recorded at least once each week.

6. Static and pumping water levels must be measured and recorded once per month for all GW sources. More or less frequent measurements may be approved by the department where historical data justifies it.

7. NCWS are exempt from the self-monitoring requirements for cation-exchange softening and iron/manganese removal if the treatment unit:

- Is a commercially available “off-the-shelf” unit designed for home use;
- Is self-contained, requiring only a piping connection for installation;
- Operates throughout a range of 35 to 80 psi; and
- Has not been installed to remove a contaminant that has an MCL, TT, AL, or HA.

b. Chemical quality and application. Any chemical added to raw, partially treated, or finished water must be suitable for the intended use in a potable water system. The chemical must be certified by an ANSI-accredited third party for conformance with the ANSI/NSF Standard 60, if such certification exists for the particular product, unless certified chemicals are not reasonably available for use, in accordance with department guidelines. If the chemical is not certified for conformance with the ANSI/NSF Standard 60 or no certification is available, the person seeking to supply or use the chemical must prove to the department's satisfaction that the chemical is not toxic or otherwise a potential hazard in a potable PWS. PWSs shall keep a record of all chemicals used. This record should include a clear identification of the chemical by brand or generic name and the dosage rate. When chemical treatment is applied with the intent of obtaining an in-system residual, the residuals will be monitored regularly. When chemical treatment is applied and in-system residuals are not expected, the treatment effectiveness will be monitored through an appropriate indicative parameter.

(1) Continuous disinfection.

1. When required. Continuous disinfection must be provided at all PWSs, except for GW supplies that either have no treatment facilities or have only fluoride, sodium hydroxide, or soda ash addition; meet the bacterial standards in 567—subrule 41.2(1); and do not show other actual or potential hazardous contamination by microorganisms. For an NCWS that only uses a cation-exchange softening unit meeting the requirements of 40.8(3)“a”(4)“7”, this requirement is based on both the system's history of coliform bacteria detection and its compliance with the coliform bacteria monitoring requirements in 567—subrule 41.2(1).

2. Method. Chlorine is the preferred disinfecting agent. Chlorination may be accomplished with liquid chlorine, calcium or sodium hypochlorites, or chlorine dioxide. Other disinfecting agents will be considered, provided a residual can be maintained in the distribution system,

reliable application equipment is available, and residual testing procedures are recognized in the Standard Methods.

3. Chlorine residual. A minimum free available chlorine residual of 0.3 mg/L or a minimum total available chlorine residual of 1.5 mg/L must be continuously maintained throughout the distribution system, except for those points in the distribution system that terminate as dead ends or areas that represent very low use when compared to usage throughout the rest of the distribution system, as determined by the department. All systems using water to which chlorine has been added must monitor daily in the distribution system to ensure the minimum disinfectant residual concentration is met, including both wholesale systems and consecutive systems.

4. Measurement. Chlorine may be measured by a test kit or an online analyzer meeting the specifications in 40.8(3) “b”(1) “5” and “6.”

5. Test kit. A test kit capable of measuring free and combined chlorine residuals in increments no greater than 0.1 mg/L in the range below 0.5 mg/L, in increments no greater than 0.2 mg/L in the range from 0.5 mg/L to 1.0 mg/L, and in increments no greater than 0.3 mg/L in the range from 1.0 mg/L to 2.0 mg/L must be provided at all chlorination facilities. The test kit must use an analysis method recognized in the Standard Methods.

6. Online analyzer. Free and total chlorine may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument provided the chemistry, accuracy, and precision remain the same. Continuous monitoring instruments must be verified with a grab sample measurement at least every seven days. The analyzer concentration must be within plus or minus 0.1 mg/L or plus or minus 15 percent (whichever is larger) of the grab sample measurement. If the verification is not within this range, immediate actions must be taken to resolve the issue and another verification must be conducted.

7. Leak detection, control, and operator protection. A bottle of at least 56 percent ammonium hydroxide must be provided at all gas chlorination installations for leak detection. Leak repair kits must be available where ton chlorine cylinders are used.

8. Other disinfectant residuals. If an alternative disinfecting agent is approved by the department, the residual levels and test kit type will be assigned by the department in accordance with and based upon the analytical methods in the Standard Methods.

(2) Phosphate compounds.

1. When phosphate compounds are added to any PWS that uses iron or manganese removal or ion-exchange softening, the compounds must be applied after the iron or manganese removal or ion-exchange softening treatment units unless the department has approved an engineering report demonstrating the suitability for addition prior to these units in accordance with 567—subrule 43.3(2). The department may require the discontinuance of phosphate addition where it interferes with other treatment processes or system operation or if there is a significant increase in microorganism populations associated with phosphate application.

2. The total phosphate concentration in finished water must not exceed 10 mg/L as PO₄.

3. Chlorine shall be applied to the phosphate solution in sufficient quantity to give an initial concentration of 10 mg/L in the phosphate solution. A chlorine residual must be maintained in the phosphate solution at all times.

4. Test kits capable of measuring polyphosphate and orthophosphate in a range from 0.0 to 10.0 mg/L in increments no greater than 0.1 mg/L must be provided.

5. Continuous application or injection of phosphate compounds directly into a well is prohibited.

(3) Fluorosilicic acid. Where fluorosilicic acid (H₂SiF₆, also called hydrofluosilicic acid) is added to a PWS, a fluoride test kit with a minimum range of from 0.0 to 2.0 mg/L in

increments no greater than 0.1 mg/L must be provided. Distilled water and standard fluoride solutions of 0.2 mg/L and 1.0 mg/L must be provided.

c. Reporting and recordkeeping requirements for systems using surface water (SW) and groundwater under the direct influence of surface water (IGW). In addition to the monitoring requirements in 40.8(3) “a” and “b” above, a PWS that uses a SW or IGW source must report monthly to the department the information specified in this subrule when filtration is installed.

(1) Turbidity measurements required by 567—subrule 43.5(3) must be reported within ten days after the end of each month the system serves water to the public. The following information must be reported.

1. The total number of filtered water turbidity measurements taken during the month.
2. The number and percentage of filtered water turbidity measurements taken during the month that are less than or equal to the turbidity limits in 567—paragraphs 43.5(3) “b” through “e” for the filtration technology being used.
3. The date and value of any turbidity measurements taken during the month which exceed 1 NTU. If at any time the turbidity exceeds 1 NTU, the system must inform the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with the PN requirements in 40.5(2). This is in addition to the monthly reporting requirement, pursuant to 567—43.5(455B).

(2) The disinfection information in 567—subrule 43.5(2) and 40.8(3) “b” above must be reported within ten days after the end of each month the system serves water to the public. The following information must be reported.

1. For each day, the lowest measurement of residual disinfectant concentration in mg/L in water entering the distribution system.
2. The date and duration of each period when the residual disinfectant concentration in water entering the distribution system fell below 0.3 mg/L free residual chlorine or 1.5 mg/L

total residual chlorine (TRC) and when the department was notified of the occurrence. If at any time the residual falls below 0.3 mg/L free residual chlorine or 1.5 mg/L TRC in the water entering the distribution system, the system must notify the department as soon as possible but no later than by the end of the next business day. The system also must notify the department by the end of the next business day whether or not the residual was restored to at least 0.3 mg/L free residual chlorine or 1.5 mg/L TRC within four hours. This is in addition to the monthly reporting requirement in 567—43.5(455B).

3. The information on the samples taken in the distribution system in conjunction with the total coliform monitoring in 567—paragraph 43.5(2) “d” and pursuant to 567—subparagraph 41.2(1) “c”(7).

(3) The total inactivation ratio must be calculated each day the treatment plant is in operation, pursuant to 567—paragraph 43.5(2) “a,” and reported on the MOR. If the total inactivation ratio is below 1.0, the system must notify the department within 24 hours.

d. Reporting and recordkeeping requirements for DPBs, disinfectants, and DBP precursors.

(1) General.

1. In addition to the monitoring requirements in 40.8(3) “a” and “b” above, a CWS or NTNC that adds a chemical disinfectant to the water in any part of the treatment process or that provides water containing a chemical disinfectant must report monthly to the department the information specified in the tables in this paragraph by the dates in 567—subparagraphs 41.6(1) “a”(3) and 43.6(1) “a”(3). A TNC that adds chlorine dioxide as a disinfectant or oxidant must report monthly to the department the information specified in this paragraph by the dates in 567—paragraph 43.6(1) “a”(3) “3.”

2. Systems required to sample quarterly or more frequently must report to the department within ten days after the end of each quarter in which samples were collected, notwithstanding

the PN provisions of 567—40.5(455B). Systems required to sample less frequently than quarterly must report to the department within ten days after the end of each monitoring period in which samples were collected.

(2) DBPs.

DBPs Reporting Table

If you are a system monitoring for ...	You must report the following ...
TTHMs and HAA5 under <u>567—subparagraph 41.6(1) “c”</u> (4) on a quarterly or more frequent basis	<ol style="list-style-type: none"> 1. Number of samples taken during the last quarter. 2. Location, date, and result of each sample taken during the last quarter. 3. Arithmetic average of all samples taken in the last quarter. 4. Annual arithmetic average of the quarterly arithmetic averages for the last four quarters.* 5. Whether the MCL was exceeded. 6. Under Stage 2, any OELs that were exceeded during the quarter, including the location and date and the calculated TTHM and HAA5 levels.
TTHMs and HAA5 under <u>567—subparagraph 41.6(1) “c”</u> (4) less frequently than quarterly, but at least annually	<ol style="list-style-type: none"> 1. Number of samples taken during the last year. 2. Location, date, and result of each sample taken during the last monitoring period. 3. Arithmetic average of all samples taken over the last year.* 4. Whether the MCL was exceeded.
TTHMs and HAA5 under <u>567—subparagraph 41.6(1) “c”</u> (4) less frequently than annually	<ol style="list-style-type: none"> 1. Location, date, and result of the last sample taken. 2. Whether the MCL was exceeded.
Chlorite under <u>567—subparagraph 41.6(1) “c”</u> (3)	<ol style="list-style-type: none"> 1. Number of samples taken each month for the last three months. 2. Location, date, and result of each sample taken during the last quarter. 3. For each month in the reporting period, arithmetic average of all samples taken in each three sample sets taken in the month. 4. Whether the MCL was exceeded and in which month it was exceeded.
Bromate under <u>567—subparagraph 41.6(1) “c”</u> (2)	<ol style="list-style-type: none"> 1. Number of samples taken during the last quarter. 2. Location, date, and result of each sample taken during the last quarter. 3. Arithmetic average of the monthly arithmetic averages of all samples taken in the last year. 4. Whether the MCL was exceeded.

*The calculation of the RAA will transition from a systemwide RAA calculation under Stage 1 to an LRAA under Stage 2. The transition will commence according to the system schedule listed in 567—paragraph 41.6(1) “b.” Beginning at the end of the fourth calendar quarter that follows the compliance date, and at the end of each subsequent quarter, the system must report the arithmetic average of quarterly results for the last four quarters of each monitoring location. If the calculated LRAA based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the monitoring results of subsequent quarters, the system must report this information to the department no later than the due date of the next compliance report.

(3) Disinfectants. The reporting in the following table is in addition to the requirements in 567—subparagraph 41.2(1) “c”(7).

Disinfectants Reporting Table

If you are a system monitoring for ...	You must report the following ...
Chlorine or chloramines under <u>567—paragraph 43.6(1) “c”(1)“2”</u>	<ol style="list-style-type: none"> 1. Number of samples taken during each month of the last quarter. 2. Monthly arithmetic average of all samples taken in each month for the last 12 months. 3. Arithmetic average of all monthly averages for the last 12 months. 4. Whether the MRDL was exceeded.
Chlorine dioxide under <u>567—paragraph 43.6(1) “c”(1)“3”</u>	<ol style="list-style-type: none"> 1. Dates, results, and locations of samples taken during the last quarter. 2. Whether the MRDL was exceeded. 3. Whether the MRDL was exceeded in any two consecutive daily samples and whether the resulting violation was acute or nonacute.

(4) DBP precursors and enhanced coagulation or enhanced softening.

DBP Precursors and Enhanced Coagulation or Enhanced Softening Reporting Table

If you are a ...	You must report the following ...
System monitoring TOC monthly or quarterly under <u>567—subparagraph 43.6(1) “c”(2)</u> and required to meet the enhanced coagulation or enhanced softening requirements in <u>567—subparagraph 43.6(3) “b”(2)</u> or <u>43.6(3) “b”(3)</u>	<ol style="list-style-type: none"> 1. Number of paired (source water and treated water, prior to continuous disinfection) samples taken during the last quarter. 2. Location, date, and result of each paired sample and associated alkalinity taken during the last quarter. 3. For each month in the reporting period that paired samples were taken, arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal. 4. Calculations for determining compliance with TOC percent removal requirements in <u>567—subparagraph 43.6(3) “c”(1)</u>. 5. Whether the system is in compliance with enhanced coagulation or enhanced softening percent removal requirements in <u>567—paragraph 43.6(3) “b”</u> for the last four quarters.
System monitoring TOC monthly or quarterly under <u>567—subparagraph 43.6(1) “c”(2)</u> and meeting one or more of the alternative compliance criteria in <u>567—subparagraph 43.6(3) “a”(2)</u> or <u>43.6(3) “a”(3)</u>	<ol style="list-style-type: none"> 1. Alternative compliance criterion that the system is using. 2. Number of paired samples taken during the last quarter. 3. Location, date, and result of each paired sample and associated alkalinity taken during the last quarter. 4. RAA based on monthly averages (or quarterly samples) of source water TOC for systems meeting a criterion in <u>567—paragraph 43.6(3) “a”(2)“1”</u> or “3” or of treated water TOC for systems meeting the criterion in <u>567—paragraph 43.6(3) “a”(2)“2.”</u> 5. RAA based on monthly averages (or quarterly samples) of source water SUVA for systems meeting the criterion in <u>567—paragraph 43.6(3) “a”(2)“5”</u> or of treated water SUVA for systems meeting the criterion in <u>567—paragraph 43.6(3) “a”(2)“6.”</u> 6. RAA of source water alkalinity for systems meeting the criterion in <u>567—paragraph 43.6(3) “a”(2)“3”</u> and of treated water alkalinity for systems meeting the criterion in <u>567—paragraph 43.6(3) “a”(3)“1.”</u> 7. RAA for both TTHM and HAA5 for systems meeting the criterion in <u>567—paragraph 43.6(3) “a”(2)“3”</u> or “4.” 8. RAA for the amount of magnesium hardness removal (as CaCO₃, in mg/L) for systems meeting the criterion in <u>567—paragraph 43.6(3) “a”(3)“2.”</u> 9. Whether the system is in compliance with the particular alternative compliance criterion in <u>567—subparagraph 43.6(3) “a”(2)</u> or <u>43.6(3) “a”(3)</u>.
SW/IGW system on reduced monitoring for TTHM/HAA5 under <u>567—paragraph 41.6(3) “d”</u>	<p>For each treatment plant that treats surface or IGW source water, report the following:</p> <ol style="list-style-type: none"> 1. Number of source water TOC samples taken each month during the last quarter. 2. Date and result of each sample taken during the last quarter.

	3. Quarterly average of monthly samples taken during the last quarter or the quarterly sample result. 4. RAA of quarterly averages from the past four quarters. 5. Whether the TOC RAA exceeded 4.0 mg/L.
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567—40.9(455B) Record maintenance. Any PWS owner or operator shall retain the applicable records specified in this rule on its premises or at a convenient location near its premises.

40.9(1) *Analytical records.*

a. Basic information. Actual laboratory reports shall be kept, or data may be transferred to tabular summaries, provided that the following information is included:

- (1) Sampling date, place, and time and the name of the person who collected the sample;
- (2) Sample identification, indicating whether it was a routine distribution system sample, check sample, raw or process water sample, or other special purpose sample;
- (3) Analysis date;
- (4) Laboratory and person responsible for performing analysis;
- (5) Analytical technique or method used; and
- (6) Analysis results.

b. Record retention for specific analytes.

(1) Microbiological and turbidity. Records of microbiological and turbidity analyses made pursuant to 567—Chapters 41 and 43 shall be kept for not less than five years.

(2) Radionuclides, inorganic compounds, and organic compounds. Records of chemical analyses made pursuant to 567—Chapter 41 shall be kept for not less than ten years. Additional lead and copper requirements are listed in 40.9(2).

40.9(2) *Lead and copper.* A system subject to 40.8(2) shall retain original records of all data and analyses, reports, surveys, PE, letters, evaluations, and schedules and any other information required by 567—41.4(455B) and 567—Chapter 43. These records shall be kept for not less than 12 years.

40.9(3) *Records of action.* Records of action taken by a system to correct violations of primary drinking water regulations (including administrative orders) shall be kept for not less than five years after the last action taken with respect to the particular violation involved.

40.9(4) *Sanitary surveys.* Copies of any written reports, summaries, or communications relating to any sanitary surveys of a system shall be kept for not less than ten years after survey completion.

40.9(5) *Operation or construction permits.* Records concerning an operation or a construction permit issued pursuant to 567—Chapter 43 shall be kept for a period ending not less than ten years after a system achieves compliance with an MCL, TT, AL, or HA or after a system completes the associated construction project.

40.9(6) *PN.* Records of PNs, including the CCR, PN examples, and PN certifications, shall be kept for not less than five years.

40.9(7) *Self-monitoring.* MORs must be completed as described in 40.8(3) “a”(4). MORs and all data generated at the facility to comply with the self-monitoring requirements must be maintained at the facility for department inspection for not less than five years. The data shall be in a form that allows easy retrieval and interpretation. Examples of data that must be retained include but are not limited to recorder charts, logbooks, bench sheets, SCADA records, and electronic files.

40.9(8) *Monitoring plans.* Copies of monitoring plans developed pursuant to this chapter and 567—Chapters 41 and 43 shall be kept for the same period of time as the records of analyses taken under the plans are required to be kept unless otherwise specified.

40.9(9) *GW rule.* Additional recordkeeping requirements for the GW rule are listed in 567—paragraph 41.7(6) “b.”

40.9(10) *Level 1 and 2 assessment forms and corrective action.* The recordkeeping requirements in this subrule pertain to the coliform bacteria sampling requirements in 567—subrule 41.2(1).

a. Systems must maintain any assessment form, regardless of who conducts the assessment, and documentation of corrective actions completed as a result of an assessment or other available summary documentation of the sanitary defects and corrective actions taken under 567—paragraph 41.2(1)“m.” These records shall be maintained at the facility for department inspection for not less than five years after completion of the assessment or corrective action.

b. Systems must maintain a record of any repeat sample taken that meets department criteria for an extension of the 24-hour period for collecting repeat samples in accordance with 567—paragraph 41.2(1)“j.”

These rules are intended to implement Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192.

APPENDIX A:

MINIMUM SELF-MONITORING REQUIREMENTS (SMRs)

I. Minimum SMRs for TNCs (excluding SW or IGW PWSs).

(1) The SMRs only apply to those systems meeting the monthly operation report (MOR) criteria in 40.8(3)“a”(1), 40.8(3)“a”(2), and 40.8(3)“a”(3).

(2) TNCs are exempt from the SMRs for point-of-use (POU) treatment devices unless the device is used to remove a contaminant that has an MCL, TT, or HA, in which case additional SMRs will be assigned by the department.

(3) Daily monitoring for TNCs applies only when the facility is in operation.

(4) Additional or more frequent monitoring requirements may be assigned by the department in the operation permit.

(5) Additional SMRs are required if treatment is used to remove a regulated contaminant or a contaminant that has an MCL, TT, or HA. See Section II for the SMRs for specific treatment types.

All TNCs* that meet the MOR criteria in 40.8(3) “a”(1), 40.8(3) “a”(2), and 40.8(3) “a”(3) must measure the following parameters, as applicable.

Parameter	Sample Site	Frequency
GENERAL REQUIREMENTS		
Pumpage (Flow)	raw:	1/week
	finished:	1/week
Disinfectant Residual***	finished:	1/day
	distribution system**:	1/day
Disinfectant, quantity used	day tank/scale:	1/day
Static Water and Pumping Water Levels (Drawdown)****	each active well:	1/month
ION EXCHANGE OR REVERSE OSMOSIS FOR NITRATE REMOVAL		
Nitrate	finished:	1/day
UV LIGHT		
Lamp Status (On/Off)	each lamp:	1/day

*TNCs must measure and record the total water used each week, but daily measurements are recommended, and may be required by the department for specific PWSs.

**Conduct this monitoring at representative points in the distribution system that adequately demonstrate compliance with 40.8(3) “b”(1).

***The department may reduce the required sample site locations for a system with a minimal distribution system and only hydropneumatic tank storage.

****More or less frequent measurements may be approved by the department where justified by historical data.

II. Minimum SMRs for CWS, NTNC, and SW/IGW TNC.

(1) The SMRs only apply to those systems meeting the MOR criteria in 40.8(3) “a”(1), 40.8(3) “a”(2), and 40.8(3) “a”(3).

(2) NTNCs are exempt from the SMRs for POU treatment devices unless the device is used to remove a contaminant that has an MCL, TT, AL, or HA; in which case, additional SMRs will be assigned by the department.

(3) Daily monitoring for NTNCs applies only when the facility is in operation.

(4) These are the minimum SMRs. Additional or more frequent monitoring requirements may be assigned in an operation permit.

A. General Requirements. All PWSs meeting the MOR criteria in 40.8(3) “a”(1), 40.8(3) “a”(2), and 40.8(3) “a”(3) must measure the following parameters, as applicable.

TNCs that provide treatment other than a cation exchange softening unit or iron/manganese removal treatment unit must meet the requirements in the CWS column.

Parameter	PWS Type:	NTNC* & SW/IGW TNC	CWS
	Sample Site	Frequency	
Pumpage (Flow)	raw:	1/week	1/day
	finished:	1/week	1/day
Consecutive systems (flow)	all master meters:	1/day	
Static Water and Pumping Water Levels (Drawdown)**	each active well:	1/month	

*NTNCs must measure and record the total water used each week, but daily measurements are recommended, and may be required by the department for specific PWSs.

**If requested by the system, the department may allow an alternate frequency for systems with pressure tanks or controls that operate the well to ensure constant pump discharge pressure.

B. Chemical Addition. All PWSs that apply chemicals in the treatment process must monitor the following parameters for the applicable processes.

Parameter	Pumpage or Flow:	<0.1 MGD	0.1-0.5 MGD	>0.5 MGD
	Sample Site	Frequency		
DISINFECTION				
Disinfectant Residual**	finished:	1/day		
	distribution system*:	1/day		
Calculated MRDL (monthly average)	distribution system:	1/month		
Calculated MRDL (RAA)	distribution system:	1/calendar quarter		
Disinfectant, quantity used	day tank/scale:	1/day		
FLUORIDATION				
Fluoride	raw:	1/quarter	1/month	
	finished:	1/day		
Fluoride, quantity used	day tank/scale:	1/day		
pH ADJUSTMENT				
pH	finished:	1/week	2/week	1/day
Caustic Soda, quantity used	day tank/scale:	1/week		
PHOSPHATE ADDITION				
Phosphate, as PO ₄	finished:	1/week	2/week	1/day
Phosphate, quantity used	day tank/scale:	1/week		
AMMONIA ADDITION				
Chemical, quantity used	day tank/scale:	1/day		
Total residual chlorine (TRC)	finished:	1/day		
	distribution system:	1/day		
Monochloramine	finished:	1/day		
	distribution system:	1/day		
Free ammonia	finished:	1/day		

	distribution system:	1/day		
OTHER CHEMICALS				
Chemical	finished:	1/week	2/week	1/day
Chemical, quantity used	day tank/scale:	1/week		

*Conduct this monitoring at representative points in the distribution system that adequately demonstrate compliance with 40.8(3) “b”(1).

**The department may reduce the required sample sites for a system with a minimal distribution system; only hydropneumatic tank storage; or, if it is a CWS, if it serves fewer than 100 persons.

C. Iron or Manganese Removal. All CWS, NTNC, and publicly owned TNC systems with iron or manganese removal equipment must monitor for the following parameters. This monitoring is not required if the removal equipment is purchased “off the shelf,” is self-contained (requiring only a piping connection for installation), and operates throughout a range of 35 to 80 psi. Any chemicals applied during the treatment process must be measured under section II.B of this appendix. Systems with manganese removal must conduct the manganese monitoring. If a system utilizes the treatment only for iron removal, manganese self-monitoring is not required.

Parameter	Pumpage or Flow:	<0.1 MGD	0.1-0.5 MGD	>0.5 MGD
	Sample Site	Frequency		
Iron	raw:	1/quarter	1/month	
	finished:	1/week	2/week	1/day
Manganese*	raw:	1/quarter	1/month	
	finished:	1/day		
IRON/MANGANESE REMOVAL EQUIPMENT INSTALLED FOR ARSENIC REMOVAL				
Iron	raw:	1/month		
	finished:	1/day		

*A system may be allowed to conduct manganese self-monitoring 1/week if it meets all of the following criteria: an average annual pumpage of less than 0.1 MGD, raw water manganese less than 0.3 mg/L, and agrees to conduct quarterly PN.

D. Lime Softening of GW (Excluding IGW) and pH Adjustment for Iron and Manganese Removal, by precipitation and coagulation processes utilizing lime, soda ash, or other chemical additions. Testing is only required if a specific chemical is added.

Parameter	Pumpage or Flow:	<0.1 MGD	0.1-0.5 MGD	>0.5 MGD
	Sample Site	Frequency		
Alkalinity	raw:	1/quarter	1/month	
	finished:	1/day		

Hardness as CaCO ₃	raw:	1/quarter	1/month	
	finished:	1/day		
Iron	raw:	1/quarter	1/month	
	finished:	1/week	2/week	1/day
Manganese	raw:	1/quarter	1/month	
	finished:	1/day		
pH	raw:	1/week		
	finished:	1/day		
Temperature	raw:	1/week		

E. Cation Exchange (Zeolite) Softening. All CWS, NTNC, and publicly owned TNC systems with ion exchange softening equipment must monitor for the following parameters. This monitoring is not required if the ion exchange softening equipment is purchased “off the shelf,” is self-contained (needing only a piping connection for installation), and operates throughout a range of 35 to 80 psi. Any chemicals applied during the treatment process must be measured under section II.B of this appendix. An annual sodium sample of the finished water is required by 567—paragraph 41.11(1) “f” for all CWSs that use cation exchange softening, and the sodium monitoring in the following table will meet that requirement.

Parameter	Pumpage or Flow:	<0.1 MGD	0.1-0.5 MGD	>0.5 MGD
	Sample Site	Frequency		
Hardness as CaCO ₃	raw:	1/quarter	1/month	
	finished:	1/week	2/week	1/day
pH	finished:	1/week	2/week	1/day
Sodium	finished:	1/year		
Bypass, in flow or percent bypassed	bypass:	1/day		
ION EXCHANGE FOR RADIONUCLIDE REMOVAL				
Hardness as CaCO ₃	raw:	1/month		
	finished:	1/day		

F. Filtration and Disinfection Requirements for SWs or IGWs.

Parameter	Pumpage or Flow:	All
	Sample Site	Frequency
CT Ratio*	finished:	1/day
Calculated V Value	distribution system:	1/month
Calculated MRDL (monthly average)	distribution system:	1/month
Calculated MRDL (RAA)	distribution system:	1/calendar quarter
Disinfectant Residual**	finished:	continuous
	distribution system**:	1/day
Disinfectant, quantity used	day tank/scale:	1/day
pH	finished:	1/day

Temperature	raw:	1/day
	finished:	1/day
Turbidity	IFE:	At least every 15 minutes
	raw and CFE:	<u>567—subrules 43.5(3) and 43.5(4), 567—43.9(455B), and 567—43.10(455B)</u> contain specific requirements; continuous turbidity monitoring may be substituted for grab sample monitoring if the continuous process is validated using a department-approved turbidity protocol.
Turbidity, 95th percentile calculation	CFE:	Monthly, per <u>567—paragraph 43.5(3) “b”</u>
Continuous turbidity monitoring instrument***	Each turbidimeter:	Each turbidimeter must be verified with a grab sample measurement at least once per week.

*Determine the total inactivation ratio ($CT_{calc}/CT_{required}$) before the first customer during peak hourly flow each day the treatment plant is in operation; 567—paragraph 43.5(2) “a” contains more information.

**Conduct this monitoring to demonstrate compliance with 40.8(3) “b,” 567—subrules 43.5(2) and 43.5(4), and 567—43.6(455B).

***The calibration of each turbidimeter used for compliance must be verified to demonstrate IFE compliance with 567—paragraphs 43.9(4) “a” and 43.10(5) “a” and CFE compliance with 567—subparagraph 43.5(4) “b”(1) and 43.9(3) and 43.10(4).

G. Clarification or Lime Softening of SW or IGW.

Parameter	Pumpage or Flow:	All
	Sample Site	Frequency
Alkalinity	raw:	1/day
	raw:	SW/IGW systems; 1/month at same time raw TOC sample is collected
	finished:	1/day
Carbon dioxide (CO ₂), quantity used	tank/scale/feeder:	1/week
Caustic Soda, quantity used	day tank/scale:	1/week
CT Ratio*	finished:	1/day
Disinfectant Residual**	finished:	continuous
	distribution system**:	1/day
Disinfectant, quantity used	day tank/scale:	1/day
Continuous disinfectant monitoring instrument	location of instrument:	The calibration of instruments used for continuous disinfectant monitoring must be verified with a grab sample measurement at least every 7 days
Hardness as CaCO ₃	raw:	1/day
	finished:	1/day
Lime, quantity used	day tank/scale/feeder:	1/week
pH	raw:	1/day
	finished:	1/day
Temperature	raw:	1/day
	finished:	1/day
TOC	raw:	1/month at same time the CFE sample is taken
	CFE:	1/month at same time the raw sample is taken
	Source water alkalinity:	1/month at same time the raw sample is taken
Turbidity	raw and CFE:	<u>567—subrules 43.5(3) and 43.5(4), 567—43.9(455B), and 567—43.10(455B)</u> contain specific requirements

	IFE:	At least every 15 minutes
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*Determine the total inactivation ratio ($CT_{\text{calc}}/CT_{\text{required}}$) before the first customer during peak hourly flow each day the treatment plant is in operation; 567—paragraph 43.5(2) “a” contains more information.

**Conduct this monitoring to demonstrate compliance with 40.8(3) “b,” 567—subrules 43.5(2) and 43.5(4), and 567—43.6(455B). Systems serving 3,300 or fewer persons may take grab samples in lieu of providing continuous monitoring at the frequencies in 567—subparagraph 43.5(4) “b”(2).

H. Reverse Osmosis, Nanofiltration, or Electrodialysis.

Parameter	Pumpage or Flow:	<0.1 MGD	>0.1 MGD
	Sample Site	Frequency	
Alkalinity	raw:	1/quarter	1/month
	finished:	1/day	
Antiscalant, quantity used	day tank/scale:	1/week	
Bypass flow or percent bypassed	bypass:	1/day	
Cleaning chemical, quantity used	day tank/scale:	1/week	
Hardness as CaCO ₃	raw:	1/quarter	1/month
	finished:	1/day	
Iron	raw:	1/day	
Manganese	raw:	1/day	
pH	raw:	1/week	
	finished:	1/day	
Total Dissolved Solids	raw:	1/month	

I. Anion Exchange (i.e., Nitrate Reduction).

Parameter	Pumpage or Flow:	<0.1 MGD	>0.1 MGD
	Sample Site	Frequency	
Bypass flow or percent bypassed	bypass:	1/day	
Nitrate	raw:	1/day	
	finished:	1/day	
Source water	Document which sources were in use during each month and when well or source rotation occurs		
Sulfate*	raw:	1/week	
	finished:	1/week	

*If required by the department.

J. Activated Carbon or Air-Stripping for TTHM, VOC, or SOC Removal (GAC or PAC).

Parameter	Pumpage or Flow:	<0.1 MGD	>0.1 MGD
	Sample Site	Frequency	
TOC	finished:	1/quarter	1/month

K. Lead and Copper: Corrosion Control and WQPs. The specific SMRs for corrosion control and WQPs are listed in 567—paragraph 41.4(1) “d” and 567—subrules 43.7(1) and 43.7(2).

L. Hydrous Manganese Oxide (HMO) Filtration and Manganese Co-precipitation for Radium Removal.

Parameter	Pumpage or Flow:	All
	Sample Site	Frequency
Chemical additive, quantity used	day tank/scale:	1/day
Manganese	raw:	1/month
	finished:	1/day
Pumpage or Flow	raw:	1/day
Bypass flow, percent bypass, or blend	bypass/blend:	1/day

M. Acrylamide and Epichlorohydrin Addition.

Parameter	Pumpage or Flow:	All
	Sample Site	Frequency
Chemical additive, third-party or manufacturer's certification*	Combination of dose and monomer level:	Annually

*Levels must not exceed values specified in 567—subparagraph 41.5(1) “b”(2).

N. Source Blending for Contaminant Control. Specific SMRs for source water blending to achieve compliance with an MCL, TT, AL, or HA will be specified in an operation permit on a case-by-case basis, in accordance with 40.8(3) “a”(4).

O. 4-log Treatment of Viruses for GW Systems. Operation permits will include operational requirements for the approved 4-log virus treatment in accordance with 567—paragraph 41.7(4) “b.” All GW systems that provide at least 4-log virus treatment must measure the following parameters, where applicable.

Parameter	Population Served:	25 - 3,300	>3,300
	Sample Site	Frequency	
Chemical disinfectant*	finished:	1/day**	continuously
Contact tank level	level:	1/day	
Peak flow rate	flow meter:	continuously	
pH	finished:	1/day	
Temperature***	finished:	1/day	

*Monitor residual disinfectant concentration using the analytical methods in 567—subparagraph 43.5(4) “a”(5) at a department-approved location. Record the concentration each day that water is served to the public.

**GW systems must collect a daily grab sample during the hour of peak flow or at another department-specified time.

***Daily temperature monitoring is assigned initially for one year so that the lowest temperature can be determined and assigned for subsequent compliance monitoring.

P. Biological Treatment Process for Ammonia Removal. Operation permits may include additional mandatory operational requirements for the treatment process.

Parameter	Pumpage or Flow:	All
	Sample Site	Frequency
Ammonia, as N**	finished*:	1/week
	distribution system*:	1/week
Dissolved oxygen (DO)	contactor inlet:	1/day
	contactor outlet:	1/day
Nitrite, as N**	finished*:	1/day
	distribution system*:	1/day

*One sample from the finished water must be collected monthly, split for analysis, and analyzed by a certified laboratory and the system.

**The department may reduce the required sampling frequency once nitrification is achieved in the biological filter or contactor and the system is consistently using free available chlorine for disinfection.

Q. Membrane Filtration (including micro and ultra filtration).

Parameter	Pumpage or Flow:	All
	Sample Site	Frequency
Antiscalant, quantity used	day tank/scale:	1/week
Cleaning chemical, quantity used	day tank/scale:	1/week
Direct integrity test (DIT)*	each membrane unit:	1/day*
Indirect integrity test**	each membrane unit:	continuous**
Log removal value (LRV)*	each membrane unit:	1/day*
Upper control limit***	each membrane unit:	If the DIT result exceeds the control limit, the system must remove the membrane from service
Continuous turbidity monitoring equipment****		Each turbidimeter used for compliance must be verified with a grab sample measurement at least once per week

*Conduct DITs on each membrane unit at a frequency of not less than once each day that the membrane unit is in operation and to verify repairs.

**Unless the department approves an alternative parameter, continuous indirect integrity monitoring must include continuous filtrate turbidity monitoring conducted at a frequency of no less than once every 15 minutes on each membrane unit.

***Systems must establish a control limit within the DIT sensitivity limits in order to demonstrate compliance with 567—paragraphs 43.11(12) “b”(3) “4” and “5.”

****The calibration of each turbidimeter used for compliance must be verified to demonstrate compliance with 567—paragraphs 43.9(4) “a” and 43.10(5) “a.”

R. CWS and NTNC Systems Using Ozone Treatment. CWS and NTNC systems that use ozone in their treatment process must comply with the bromide requirements of subrule 567—43.6(2).

Parameter	Pumpage or Flow:	All
	Sample Site	Frequency
Bromate	finished:	1/month*

*The department may allow systems required to analyze for bromate to reduce bromate monitoring from monthly to once per quarter if a system demonstrates that the average source water bromide concentration is less than 0.05 mg/L based on representative monthly measurements for one year. Systems must continue bromide monitoring to remain on reduced bromate monitoring.

S. Ultraviolet Light (UV). All CWS and NTNC systems must comply with these requirements.

Parameter	Pumpage or Flow:	All
	Sample Site	Frequency
Alarm during off-specification conditions	each reactor:	1/5 minutes
UV intensity	each lamp:	1/day
UVT	each lamp:	1/day
Ratio of minimum UV dose calculated and recorded every 4 hours to the required UV dose, OR calculate and record the log inactivation every four hours	each reactor:	1/day
Lamp status	each lamp:	1/4 hours**
Individual UV reactor flow	each reactor:	1/4 hours
	max UV flow:	daily
	total UV flow:	daily total
Total volume of off-specification water	each reactor:	1/day
	all reactors:	monthly total
Percent of off-specification water produced	all reactors:	monthly total
Perform UVT analyzer check protocol	-	1/week
Perform UV sensor verification*	each sensor:	1/month

*Reference sensor(s) must be calibrated at least once per year at a qualified facility against a traceable standard.

Calibration records must be maintained for inspection during sanitary surveys. If the reference sensor is found to be out of calibration, the calibration frequency should be increased.

**Systems serving fewer than 500 persons may record lamp status 1/day.

T. Chlorine Dioxide. All CWS, NTNC and TNC systems must comply with these requirements. In the event of an acute or nonacute violation, systems must also comply with 567—paragraph 43.6(1) “e.”

Parameter	Pumpage or Flow:	All
	Sample Site	Frequency

Chlorine dioxide	finished:	1/day
Chlorite	finished:	1/day

U. Copper Ion Generator.

Parameter	Pumpage or Flow:	All
	Sample Site	Frequency
Copper residual	finished:	1/week
	injection stream:	1/week

ITEM 2. Rescind and reserve **567—Chapter 42**

**Iowa Department of Natural Resources
Environmental Protection Commission**

Decision Item

15. Chapter 41, “Water Supplies” – Final Rule

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 41. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 41 establishes certain Safe Drinking Water Act (SDWA) requirements. The SDWA regulations adopted include but are not limited to the establishment of coverage, regulated contaminant requirements, and the federal groundwater rule. Establishing coverage is essential for obtaining and maintaining primacy to enforce the SDWA. This chapter was reviewed and edited consistent with Executive Order 10.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 11, 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8631C. Two public hearings were held on January 30, 2025 and January 31, 2025.

Changes from NOIA: Four people attended the first public hearing, and four attended the second hearing. No public comments were received at the hearings. Two email comments and one comment letter were received during the public comment period. This final rule is substantially identical to the NOIA. Minor typos and errors were corrected in the final rule. In response to the comments, typos were corrected and a minor language modification was made.

Effective Date of Final Rule: June 18, 2025

Carmily Stone, MPH, Water Supply Engineering Supervisor
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 41 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 41, “Water Supplies,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted the authority provided in Iowa Code sections 455B.103(2), 455B.105(3) and 455B.173.

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192 and the federal Safe Drinking Water Act (SDWA) as amended (42 U.S.C. §300f et seq.).

Purpose and Summary

New Chapter 41 establishes certain federal Safe Drinking Water Act (SDWA) requirements. Specifically, it establishes programs and processes for administration of these rules in Iowa. The SDWA regulations established include but are not limited to the establishment of coverage, regulated contaminant requirements (including but not limited to biological contaminants, inorganic contaminants, lead and copper, organic contaminants, disinfection byproducts, and radionuclides), and the federal groundwater rule. Establishing coverage is essential for obtaining and maintaining primacy to enforce the SDWA. This chapter has been reviewed and edited consistent with Executive Order 10.

Public Comment and Changes to Rulemaking

Notice of Intended Action (NOIA) for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8631C**.

Two public hearings were held. The first public hearing was held on January 30, 2025 from 2:00 PM to 3:00 PM virtually via Zoom. The second public hearing was held on January 31, 2025 from 9:00 AM to 10:00 AM virtually via Zoom.

Four people attended the first public hearing, and four attended the second hearing. No public comments were received at the hearings. Two email comments and one comment letter were received during the public comment period.

This final rule is substantially identical to the NOIA. In the final rule, erroneous rule references were corrected and a phrase associated with an old date that was mistakenly kept in the NOIA was struck. In addition, missing method citations were added to the Radionuclide Analytical methodology table, as methods were mistakenly omitted in the NOIA. In response to the comments, some typos were corrected in the final rule, and the language regarding the measurement of residual disinfectant concentrations was modified by the addition of a new clarifying sentence and the reinsertion of old language that was mistakenly struck in the NOIA.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 41 and adopt the following **new** chapter in lieu thereof:

CHAPTER 41

WATER SUPPLIES

567—41.1(455B) Primary drinking water regulations—coverage. 567—Chapters 40 through 44 and 83 shall apply to each public water supply system (PWS) unless the PWS meets all of the following conditions:

1. Consists only of distribution and storage facilities (and does not have any collection and treatment facilities);
2. Obtains all of its water from, but is not owned or operated by, a PWS to which such regulations apply;
3. Does not sell water to any person; and
4. Is not a carrier which conveys passengers in interstate commerce.

567—41.2(455B) Biological maximum contaminant level (MCL), treatment technique (TT), and monitoring requirements.

41.2(1) *Coliform bacteria and Escherichia coli (E. coli)*. The provisions of this subrule include both MCL and TT requirements and apply to all PWSs. Failure to comply with the applicable requirements in this subrule is a violation of the national primary drinking water regulations.

a. MCL. A PWS must determine compliance with the *E. coli* MCL for each month in which the system is required to monitor for total coliforms. A system is in compliance with the *E. coli* MCL for samples taken under this subrule unless any of the following conditions occur. For purposes of the public notification (PN) requirements in rule 567—40.5(455B), MCL violation may pose an acute health risk. A system is not in compliance if it:

(1) Has an *E. coli*-positive repeat sample following a total coliform-positive routine sample;

(2) Has a total coliform-positive repeat sample following an *E. coli*-positive routine sample;

(3) Fails to take all required repeat samples following an *E. coli*-positive routine sample;
or

(4) Fails to test for *E. coli* when any repeat sample tests positive for total coliform.

b. Analytical methodology.

(1) Sample volume. The standard sample volume required for analysis is 100 mL, regardless of the analytical method used.

(2) Presence/absence (P/A) required. Only the P/A of total coliforms and *E. coli* must be determined in any compliance sample; a determination of density is acceptable but is not required.

(3) Holding time and temperature. The time from sample collection to initiation of test medium incubation shall not exceed 30 hours. Systems are encouraged but not required to hold samples below 10 degrees Celsius during transit.

(4) Dechlorinating agent required for chlorinated water. If water having a residual chlorine (measured as free, combined, or total chlorine) will be analyzed, sufficient sodium thiosulfate ($\text{Na}_2\text{S}_2\text{O}_3$) must be added to the sample bottle before sterilization to neutralize any residual chlorine in the water sample. Dechlorination procedures are addressed in Standard Methods (SM) Section 9060A.2, 20th and 21st editions.

(5) Systems must conduct total coliform and *E. coli* analyses in accordance with one of the analytical methods in the following table.

Bacteria Analytical Methods

Methodology Category	Method Name ¹	Method Citation ¹
Total Coliform Bacteria Methods:		
Lactose Fermentation	Standard Total Coliform Fermentation Technique	SM 9221 B.1, B.2 (20th, 21st, and 22nd ed.) ^{2,3} SM Online 9221 B.1, B.2-99, B-06 ^{2,3}
	P/A Coliform Test	SM 9221 D.1, D.2 (20th and 21st ed.) ^{2,7} SM Online 9221 D.1, D.2-99 ^{2,7}
Membrane Filtration	Standard Total Coliform Membrane Filter Procedure	SM 9222 B, C (20th and 21st ed.) ^{2,4} SM Online 9222 B-97 ^{2,4} , 9222 C-97 ^{2,4}
	Membrane Filtration using MI Medium	EPA Method 1604 ²
	m-ColiBlue24 Test ^{2,4}	
	Chromocult ^{2,4}	
Enzyme Substrate	Colilert	SM 9223 B (20th, 21st and 22nd ed.) ^{2,5} SM Online 9223 B-97, B-04 ^{2,5}
	Colilert-18	SM 9223 B (21st and 22nd ed.) ^{2,5} SM Online 9223 B-04 ^{2,5}
	Colisure	SM 9223 B (20th, 21st and 22nd ed.) ^{2,5,6} SM Online 9223 B-97, B-04 ^{2,5,6}
	E*Colite Test ²	
	ReadyCult Test ²	
	modified Colitag Test ²	
	Tecta EC/TC Test ²	
<i>E. coli</i> Methods:		
<i>E. coli</i> Procedures (following Lactose Fermentation Methods)	EC-MUG Medium	SM 9221 F.1 (20th, 21st and 22nd ed.) ² SM Online 9221 F-06 ²
<i>E. coli</i> Partition	EC broth with MUG (EC-MUG)	SM 9222 G.1c(2) (20th and 21st ed.) ^{2,8}
	NA-MUG Medium	SM 9222 G.1c(1) (20th and 21st ed.) ²
Membrane Filtration	Membrane Filtration using MI Medium	EPA Method 1604 ²
	m-ColiBlue24 Test ^{2,4}	
	Chromocult ^{2,4}	
Enzyme Substrate	Colilert	SM 9223 B (20th, 21st and 22nd ed.) ^{2,5} SM Online 9223 B-97, B-04 ^{2,5,6}
	Colilert-18	SM 9223 B (21st and 22nd ed.) ^{2,5} SM Online 9223 B-04 ^{2,5}
	Colisure	SM 9223 B (20th, 21st and 22nd ed.) ^{2,5,6} SM Online 9223 B-97, 04 ^{2,5,6}
	E*Colite Test ²	
	ReadyCult ²	
	modified Colitag Test ²	
	Tecta EC/TC Test ²	

¹ Methods are listed in 41.2(1) "b"(6). For SM, either the 20th (1998) or 21st (2005) edition may be used. For SM Online, the year in which each method was approved is designated by the last two digits following the hyphen in the method number, and the methods listed are the only online versions that may be used. For vendor methods, the date in 41.2(1) "b"(6) is the

date/version of the approved method, and the methods listed are the only versions that may be used. Laboratories should use only the approved versions of the methods, as product package inserts may not match the approved versions.

²Incorporated by reference. See 41.2(1) “b”(6).

³Lactose broth may be used in lieu of lauryl tryptose broth (LTB) if the system conducts at least 25 parallel tests between lactose broth and LTB using the water normally tested and if the findings from this comparison demonstrate that the false-positive rate and the false-negative rate for total coliforms, using lactose broth, is less than 10 percent.

⁴All filtration series must begin with membrane filtration equipment that has been sterilized by autoclaving. Exposure of filtration equipment to UV light is not adequate to ensure sterilization. Subsequent to the initial autoclaving, exposure of the filtration equipment to UV light may be used to sanitize the funnels between filtrations within a filtration series. Alternatively, membrane filtration equipment that is presterilized by the manufacturer may be used.

⁵Multiple-tube and multi-well enumerative formats for this method are approved for use in P/A determination under this subrule.

⁶Colisure results may be read after an incubation time of 24 hours.

⁷A multiple-tube enumerative format, as described in SM for the Examination of Water and Wastewater 9221, is approved for this method for use in P/A determination under this subrule.

⁸The following changes must be made to the EC broth with MUG (EC-MUG) formulation: Potassium dihydrogen phosphate, KH₂PO₄, must be 1.5 g, and 4-methylumbelliferyl-beta-D-glucuronide must be 0.05 g.

(6) Methods incorporated by reference. The methods in this subrule are incorporated by reference with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR Part 51. All approved material is available for inspection at www.regulations.gov, in hard copy at the EPA’s Drinking Water Docket, (Docket ID EPA-HQ-OW-2008-0878), or from NARA.

1. APHA, SM 20th edition (1998):

- SM 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” B.1, B.2, “Standard Total Coliform Fermentation Technique;” D.1, D.2, “Presence-Absence (P/A) Coliform Test;” and F.1, “*Escherichia coli* Procedure: EC-MUG Medium.”
- SM 9222, “Membrane Filter Technique for Members of the Coliform Group,” B, “Standard Total Coliform Membrane Filter Procedure,” C, “Delayed-Incubation Total

Coliform Procedure,” G.1c(1), “*Escherichia coli* Partition Method: NA-MUG Medium,” and G.1c(2), “*Escherichia coli* Partition Method: EC Broth with MUG (EC-MUG).”

- SM 9223, “Enzyme Substrate Coliform Test,” B, “Enzyme Substrate Test,” Colilert and Colisure.

2. SM, 21st edition (2005):

- SM 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” B.1, B.2, “Standard Total Coliform Fermentation Technique;” D.1, D.2, “Presence-Absence (P/A) Coliform Test,” and F.1, “*Escherichia coli* Procedure: EC-MUG Medium.”

- SM 9222, “Membrane Filter Technique for Members of the Coliform Group,” B, “Standard Total Coliform Membrane Filter Procedure;” C, “Delayed-Incubation Total Coliform Procedure;” G.1.c(1), “*Escherichia coli* Partition Method: NA-MUG Medium;” and G.1.c(2), “*Escherichia coli* Partition Method: EC Broth with MUG (EC-MUG).”

- SM 9223, “Enzyme Substrate Coliform Test,” B, “Enzyme Substrate Test,” Colilert and Colisure.

3. SM Online:

- SM 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group” (1999), B.1, B.2-99, B-06, “Standard Total Coliform Fermentation Technique” and D.1, D.2-99, “Presence-Absence (P/A) Coliform Test.”

- SM 9222, “Membrane Filter Technique for Members of the Coliform Group” (1997), B-97, “Standard Total Coliform Membrane Filter Procedure” and C-97, “Delayed-Incubation Total Coliform Procedure.”

- SM 9223, “Enzyme Substrate Coliform Test” (1997), B-97, “Enzyme Substrate Test,” Colilert and Colisure.

4. Charm Sciences, Inc., 659 Andover Street, Lawrence, MA 01843-1032: E*Colite—“Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Drinking Water,” January 9, 1998.

5. CPI International, Inc., 5580 Skylane Blvd., Santa Rosa, CA 95403: modified Colitag, ATP D05-0035—“Modified Colitag Test Method for the Simultaneous Detection of *E. coli* and other Total Coliforms in Water,” August 28, 2009.

6. EMD Millipore (a division of Merck KGaA, Darmstadt, Germany), 290 Concord Road, Billerica, MA 01821:

- Chromocult—“Chromocult Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and *Escherichia coli* for Finished Waters,” November 2000, Version 1.0.

- Readycult—“Readycult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters,” January 2007, Version 1.1.

7. EPA’s Water Resource Center (MC-4100T), EPA Method 1604, EPA 821-R-02-024—“EPA Method 1604: Total Coliforms and *Escherichia coli* in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium),” September 2002, www.nemi.gov.

8. Hach Company, www.hach.com: m-ColiBlue24—“Membrane Filtration Method m-ColiBlue24 Broth,” Revision 2, August 17, 1999.

9. SM, 22nd edition (2012):

- SM 9221, “Multiple-Tube Fermentation Technique for Members of the Coliform Group,” B.1, B.2, “Standard Total Coliform Fermentation Technique,” and F.1, “*Escherichia coli* Procedure: EC-MUG Medium.”

- SM 9223, “Enzyme Substrate Coliform Test,” B, “Enzyme Substrate Test,” Colilert and Colisure.

10. Veolia Water Solutions and Technologies, Suite 4697, Biosciences Complex, 116 Barrie Street, Kingston, Ontario, Canada K7L 3N6: Tecta EC/TC. “Presence/Absence Method for Simultaneous Detection of Total Coliforms and *Escherichia coli* in Drinking Water,” April 2014.

(7) Laboratory certification. Systems must have all compliance samples required under this subrule analyzed by a laboratory certified in accordance with 567—Chapter 83. The laboratory used by the system must be certified for each method and associated contaminant used for compliance monitoring analyses under this subrule.

c. Sampling plan.

(1) Written sampling plan required. Systems must collect total coliform samples according to their written sampling plan.

1. Systems must develop a written sampling plan that identifies sample locations and a sample collection schedule that are representative of water throughout the distribution system. Major elements of the plan shall include, but not be limited to, the following:

- Map of the distribution system served by the system;
- List of routine compliance sample locations for each sample period;
- List of repeat compliance sample locations for each routine compliance sample location;
- Any other sample locations necessary to meet the requirements of this subrule;
- Sample collection schedule;
- Proper sampling technique instructions;
- Log of samples taken; and
- For GW systems subject to 567—41.7(455B), triggered source water monitoring plan.

2. The system shall review the sampling plan every two years, update it as needed, and retain it on file at the facility. The plan must be made available to the department upon request and for review during sanitary surveys and must be revised at the department's direction.

3. Monitoring under this subrule may take place at a customer's premises, dedicated sampling station, or other designated compliance sampling location.

(2) Sampling schedule. Systems must collect routine samples at regular time intervals throughout the month. Systems that use only GW and serve 4,900 or fewer people, or regional water systems that use only GW and serve less than 121 miles of pipe, may collect all required routine samples on a single day, if the samples are taken from different sites.

(3) Minimum number of routine samples. Systems must take at least the minimum number of required routine samples even if the system has had an *E. coli* MCL violation or has exceeded the coliform TT triggers in 41.2(1)“i.” Such samples must be designated as “routine” when submitted to the laboratory.

(4) Additional sampling. A system may conduct more compliance monitoring than is required to uncover or investigate potential problems in the distribution system. A system may take more than the minimum number of required routine samples, and must include the additional routine sample results when calculating whether the coliform TT trigger in 41.2(1)“i”(1)“1” and “2” has been exceeded, only if the samples are taken in accordance with the existing sampling plan and are representative of water throughout the distribution system. Such samples must be designated as “routine” when submitted to the laboratory.

(5) Repeat samples. Systems must identify repeat monitoring locations in the sampling plan. Repeat samples must be analyzed at the same laboratory as the corresponding original routine sample(s), unless written approval for use of a different laboratory is granted by the department. A system must collect at least one repeat sample at the following locations: from the sampling tap where the original routine total coliform-positive sample was taken, at a tap

within five service connections upstream of the original sample location, and at a tap within five service connections downstream of the original sample location. Such samples must be designated as “repeat” when submitted to the laboratory.

1. If the sampling location of a total coliform-positive sample is at or within one service connection from the end of the distribution system, the system must still take all required repeat samples. However, the department may allow an alternative sampling location in lieu of one of the upstream or downstream sampling locations.

2. A GW system with two or more wells that is required to conduct triggered source water monitoring under 41.7(3) must collect GW source sample(s) in addition to the required repeat samples.

3. A GW system with a single well that is required to conduct triggered source water monitoring may, with written department approval, collect one of its required repeat samples at the triggered source water sample monitoring location. The system must demonstrate to the department’s satisfaction that the sampling plan remains representative of water quality in the distribution system. If approved, the sample result may be used to meet the requirements of 41.7(3) and this subrule. If a repeat sample taken at the triggered source water monitoring location is *E. coli*-positive, the system has violated the *E. coli* MCL, and must also comply with the requirements for additional source water samples under 41.7(3) “a”(3).

4. The department may review, revise, and approve, as appropriate, repeat sampling proposed by a system under 41.2(1) “c”(5). The system must demonstrate that the sampling plan remains representative of the water quality in the distribution system.

- (6) Special purpose samples. Special purpose samples, such as those taken to determine whether disinfection practices are sufficient following pipe placement, replacement, or repair, must not be used to determine whether the coliform TT trigger has been exceeded. Such samples must be designated as “special” when submitted to the laboratory and cannot be used

for compliance. Repeat samples are not considered special purpose samples and must be used to determine whether the coliform TT trigger has been exceeded.

(7) Residual disinfectant measurement. Any system adding a chemical disinfectant to the water must meet the requirements of 567—subparagraph 40.8(3) “b”(1). The minimum required residual disinfectant measurements are as follows, unless otherwise directed by the department in writing:

1. GW systems. A system that uses only GW and adds a chemical disinfectant, or provides water that contains a disinfectant, must measure and record the free and total chlorine residual disinfectant concentration at least at the same points in the distribution system and at the same time as routine and repeat total coliform bacteria samples are collected, as specified in 41.2(1) “e” through “g.” The system shall report the total residual disinfectant concentration to the laboratory with the bacteria sample and comply with the reporting requirements in 567—subrule 40.8(3). If a system is chloraminating, it may measure and report only the total chlorine residual.

2. Surface water (SW) and influenced groundwater (IGW) systems.

- Any SW or IGW PWS must meet the requirements for minimum residual disinfectant entering the distribution system pursuant to 567—paragraph 43.5(4) “b”(2)“1”; and

- A system that uses SW or IGW must comply with the requirements in 567—subparagraph 43.5(4) “b”(2)“2” for daily distribution system residual disinfectant monitoring. The system must measure and record the free and total chlorine residual disinfectant concentration at least at the same points in the distribution system and at the same time as routine and repeat total coliform bacteria samples are collected, as specified in 41.2(1) “e” through “g.” The residual disinfectant measurements required in this subrule may be used to satisfy the requirement in 567—paragraph 43.5(4) “b”(2)“2” on the day(s) when a routine or repeat total coliform bacteria sample(s) is collected, in lieu of separate samples. The system

shall report the residual disinfectant concentration to the laboratory with the bacteria sample and comply with the applicable reporting requirements of 567—subrule 40.8(3).

d. Invalidation of total coliform samples. A total coliform-positive sample invalidated under this paragraph does not count toward meeting the minimum monitoring requirements of this subrule.

(1) The department may invalidate a total coliform-positive sample only if the following conditions are met:

1. The laboratory establishes that improper sample analysis caused the total coliform-positive result.

2. The department, on the basis of the results of the required repeat samples, determines that the total coliform-positive sample resulted from a domestic or other non-distribution system plumbing problem. “Domestic or other non-distribution system plumbing problem” means a coliform contamination problem in a PWS with more than one service connection that is limited to the specific service connection from which the coliform-positive sample was taken. The department cannot invalidate a total coliform-positive sample on the basis of repeat samples unless all repeat samples collected at the same tap as the original total coliform-positive sample are also total coliform-positive and all repeat samples collected at a location other than the original tap are total coliform-negative. The department cannot invalidate a total coliform-positive sample on the basis of repeat samples if all the repeat samples are total coliform-negative or if the system has only one service connection.

3. The department has substantial grounds to believe that the total coliform-positive result is due to a circumstance or condition that does not reflect water quality in the distribution system. The system must still collect all repeat samples required under 41.2(1) “g” and use them to determine whether a coliform TT trigger in 41.2(1) “i” has been exceeded.

The decision and supporting rationale for invalidating a total coliform-positive sample under this subparagraph must be in writing and signed by the supervisor of the water supply operations section or water supply engineering section and the department official who recommended the decision. The department must make this document available to EPA and the public. The documentation must state the specific cause of the total coliform-positive sample and what action the system has taken, or will take, to correct this problem. The department may not invalidate a total coliform-positive sample solely on the grounds that all repeat samples are total coliform-negative or because of poor sampling technique.

(2) Laboratory invalidation. A laboratory must invalidate a total coliform sample (unless total coliforms are detected, in which case the sample is valid) if the sample produces a turbid culture in the absence of gas production using an analytical method where gas formation is examined, produces a turbid culture in the absence of an acid reaction in the P/A coliform test, or exhibits confluent growth or produces colonies too numerous to count with an analytical method using a membrane filter. If a laboratory invalidates a sample because of such interference, the system must collect another sample from the same location as that of the original within 24 hours of being notified of the interference and must have the sample analyzed for the presence of total coliforms. The system must continue to resample within 24 hours and have the samples analyzed until a valid result is obtained. The department may waive the 24-hour time limit on a case-by-case basis.

e. Routine monitoring for specific groundwater (GW) NCWS serving 1,000 or fewer people. This paragraph applies to NCWS using only GW (not IGW) as a source and serving 1,000 or fewer people. GW NCWS that serve schools, preschools, and child care facilities and all PWSs owned or managed by state agencies must monitor at the same frequency as a like-sized CWS, in accordance with 41.2(1) “f”(1), 41.2(1) “f”(2), or 41.2(1) “f”(3).

(1) General. Following any total coliform-positive sample taken under this paragraph, systems must comply with the repeat monitoring and *E. coli* analytical requirements in 41.2(1)“g.” Once all monitoring required by this paragraph and 41.2(1)“g” for a calendar month has been completed, systems must determine whether any coliform TT triggers in 41.2(1)“i” have been exceeded. If any trigger has been exceeded, systems must complete the assessments required by 41.2(1)“i.”

(2) Monitoring frequency for total coliforms. Systems must monitor each calendar quarter that they provide water to the public, with the following exceptions:

1. A system on quarterly monitoring that experiences any of the following events must begin monthly monitoring in the month following the event. A system must continue on monthly monitoring until it meets the requirements for returning to quarterly monitoring. The events include:

- An *E. coli* MCL violation;
- The triggering of one Level 2 assessment under 41.2(1)“i” in a rolling 12-month period.
- The triggering of two Level 1 assessments under 41.2(1)“i” in a rolling 12-month period.
- One coliform TT violation.
- Two coliform monitoring violations in a rolling 12-month period.
- One monitoring coliform violation and one Level 1 assessment under 41.2(1)“i” in a rolling 12-month period.

2. A system on monthly monitoring for reasons other than those identified above in 41.2(1)“e”(2)“1” is not considered to be on increased monitoring for the purposes of 41.2(1).

3. Seasonal systems must sample each month in which they are in operation. All seasonal systems must demonstrate completion of a department-approved start-up procedure before

serving water to the public, which includes a requirement for a coliform-negative start-up sample.

(3) Sampling frequency evaluation during a sanitary survey. During each sanitary survey, the department must evaluate the status of a system, including the distribution system, to determine whether the system is on an appropriate monitoring schedule. The department may modify a system's monitoring schedule, as necessary, or may allow a system to stay on its existing monitoring schedule, consistent with this paragraph.

(4) Returning from monthly to quarterly sampling for nonseasonal NCWSs. The department may reduce the monitoring frequency for a nonseasonal NCWS on monthly monitoring triggered under 41.2(1) "e"(2)"1" to quarterly monitoring if the system meets the following criteria. For the purposes of this subparagraph, "protected water source" means either the well meets separation distances from sources of microbial contamination pursuant to 567—subrule 43.3(7), Table A; or the system has department-approved 4-log virus inactivation treatment in continuous usage.

1. The system must have a completed sanitary survey or voluntary Level 2 assessment within the previous 12 months, be free of sanitary defects, and have a protected water source;

2. The system must have a clean compliance history for at least the previous 12 months;

and

3. The department must review the approved sampling plan, which must designate the monitoring time period(s) based on site-specific considerations (e.g., during periods of highest demand or highest vulnerability to contamination). The system must collect compliance samples during these time periods.

(5) Additional routine monitoring for systems on quarterly sampling in the month following a total coliform-positive routine sample. Systems collecting samples on a quarterly frequency must conduct additional routine monitoring the month following one or more total

coliform-positive samples (with or without a Level 1 TT trigger). Systems must collect at least three routine samples during the next month. Systems may either collect samples at regular time intervals throughout the month or may collect all required routine samples on a single day if samples are taken from different sites. Systems must use the results of additional routine samples in coliform TT trigger calculations under 41.2(1) “i.”

f. Routine monitoring requirements for other systems.

(1) GW CWS serving 1,000 or fewer people. This subparagraph applies to CWS using only GW (not IGW) as a source and serving 1,000 or fewer people. The routine total coliforms monitoring frequency for such systems is one sample per month.

(2) SW/IGW PWS serving 1,000 or fewer people. This subparagraph applies to all PWSs serving 1,000 or fewer people that use SW/IGW sources, including consecutive systems.

1. The routine total coliforms monitoring frequency for such systems is one sample per month. Systems may not reduce monitoring frequency.

2. Seasonal systems must sample each month in which they are in operation, and the monitoring frequency cannot be reduced. All seasonal systems must demonstrate completion of a department-approved start-up procedure before serving water to the public, which includes a requirement for a coliform-negative start-up sample.

(3) PWSs serving more than 1,000 people. This subparagraph applies to all PWSs serving more than 1,000 people, except regional water systems. The regional water system requirements are in 41.2(1) “f”(4) below.

1. The routine total coliforms monitoring frequency for PWSs serving more than 1,000 people is based upon the population served by the system, as follows:

Population Served	Minimum Number of Routine Samples per Month	Population Served	Minimum Number of Routine Samples per Month
1,001 to 2,500	2	41,001 to 50,000	50
2,501 to 3,300	3	50,001 to 59,000	60
3,301 to 4,100	4	59,001 to 70,000	70
4,101 to 4,900	5	70,001 to 83,000	80

4,901 to 5,800	6	83,001 to 96,000	90
5,801 to 6,700	7	96,001 to 130,000	100
6,701 to 7,600	8	130,001 to 220,000	120
7,601 to 8,500	9	220,001 to 320,000	150
8,501 to 12,900	10	320,001 to 450,000	180
12,901 to 17,200	15	450,001 to 600,000	210
17,201 to 21,500	20	600,001 to 780,000	240
21,501 to 25,000	25	780,001 to 970,000	270
25,001 to 33,000	30	970,001 to 1,230,000	300
33,001 to 41,000	40		

2. Seasonal systems must sample each month in which they are in operation, and the monitoring frequency cannot be reduced. All seasonal systems must demonstrate completion of a department-approved start-up procedure before serving water to the public, which includes a requirement for a coliform-negative start-up sample.

3. CWSs may not reduce the number of required routine samples.

4. If the department, on the basis of a sanitary survey or monitoring results history, determines that some greater monitoring frequency is more appropriate, that frequency shall be the frequency required under these rules. The increased frequency shall be confirmed or changed on the basis of subsequent surveys.

(4) Regional PWSs. This subparagraph applies to all regional water systems. The supplier of water for a regional PWS shall sample for coliform bacteria at a frequency based upon the miles of pipe in its distribution system.

1. The routine total coliforms monitoring frequency for regional PWSs is based on the miles of pipe in a system's distribution system, as indicated in the following table. The sampling frequency for a regional water system shall not be less than as set forth in this subparagraph, based upon the population equivalent served. The following table represents sampling frequency per miles of pipe in a distribution system and is determined by calculating one-half the square root of the miles of pipe.

Miles of Pipe	Minimum Number of Routine Samples per Month	Miles of Pipe	Minimum Number of Routine Samples per Month
0 – 9	1	1,850 – 2,025	22
10 – 25	2	2,026 – 2,209	23
26 – 49	3	2,210 – 2,401	24

50 – 81	4	2,402 – 2,601	25
82 – 121	5	2,602 – 2,809	26
122 – 169	6	2,810 – 3,025	27
170 – 225	7	3,026 – 3,249	28
226 – 289	8	3,250 – 3,481	29
290 – 361	9	3,482 – 3,721	30
362 – 441	10	3,722 – 3,969	31
442 – 529	11	3,970 – 4,225	32
530 – 625	12	4,226 – 4,489	33
626 – 729	13	4,490 – 4,671	34
730 – 841	14	4,672 – 5,041	35
842 – 961	15	5,042 – 5,329	36
962 – 1,089	16	5,330 – 5,625	37
1,090 – 1,225	17	5,626 – 5,929	38
1,226 – 1,364	18	5,930 – 6,241	39
1,365 – 1,521	19	6,242 – 6,561	40
1,522 – 1,681	20	6,562 and greater	41
1,682 – 1,849	21		

2. Regional PWSs may not reduce the number of required routine samples.

3. If the department, on the basis of a sanitary survey or monitoring results history, determines that some greater monitoring frequency for a regional PWS is more appropriate, that frequency shall be the frequency required under these rules. The increased frequency shall be confirmed or changed on the basis of subsequent surveys.

(5) Requirements for all systems subject to this paragraph. Following any total coliform-positive sample taken under this paragraph, systems must comply with the repeat monitoring requirements and *E. coli* analytical requirements in 41.2(1) “g.” Once all monitoring required by this paragraph and 41.2(1) “g” for a calendar month has been completed, systems must determine whether any coliform TT triggers in 41.2(1) “i” have been exceeded. If any trigger has been exceeded, systems must complete assessments pursuant to 41.2(1) “i.”

g. Repeat monitoring. If a routine sample taken under 41.2(1) “e” and “f” is total coliform-positive, a system must collect a set of repeat samples. The department cannot waive this requirement.

(1) A system must:

1. Collect no fewer than three repeat samples for each total coliform-positive routine sample.

2. Collect repeat samples within 24 hours of receipt of the positive result. The department may extend the 24-hour limit on a case-by-case basis if the system has a logistical problem collecting the repeat samples within 24 hours that is beyond its control. In the case of an extension, the department must specify how much time a system has to collect the repeat samples.

3. Collect all repeat samples on the same day, except that the department may allow a system with a single service connection to collect the required set of repeat samples over a three-day period. "System with a single service connection" means a system that supplies drinking water to consumers through a single service line.

4. Collect an additional set of repeat samples as specified above in 41.2(1) "g"(1) "1" through 41.2(1) "g"(1) "3" if one or more repeat samples in the current set of repeat samples is total coliform-positive. A system must collect the additional set of repeat samples within 24 hours of receipt of a positive result, unless the department extends the time limit in 41.2(1) "g"(1) "2". A system must continue to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or it determines that a coliform TT trigger in 41.2(1) "i" has been exceeded as a result of a total coliform-positive repeat sample and notifies the department. If a TT trigger is exceeded as a result of a total coliform-positive routine sample, systems only need to conduct one round of repeat monitoring for each total coliform-positive routine sample.

(2) Results of all routine and repeat samples taken under 41.2(1) "e" through "g" that are not invalidated by the department must be used to determine whether a coliform TT trigger in 41.2(1) "i" has been exceeded.

h. E. coli testing requirements.

(1) If any routine or repeat sample is total coliform-positive, a system must analyze that total coliform-positive culture medium to determine the presence of *E. coli*. If *E. coli* are present, the system must notify the department by the end of the same day the system receives notification of the test result. If the notification is outside of the department's routine office hours, the system shall call the department's Environmental Emergency Reporting Hotline at 515.725.8694.

(2) The department has the discretion to allow a system, on a case-by-case basis, to forgo *E. coli* testing on a total coliform-positive sample if that system assumes that the total coliform-positive sample is *E. coli*-positive. Accordingly, the system must notify the department as specified above in 41.2(1) "h"(1), and the provisions of 41.2(1) "a" apply.

i. Coliform TT triggers. Systems must conduct assessments in accordance with 41.2(1) "j" after exceeding any TT trigger.

(1) Level 1 TT triggers.

1. For systems taking 40 or more samples per month, the system exceeds 5.0 percent total coliform-positive samples for the month.

2. For systems taking fewer than 40 samples per month, the system has two or more total coliform-positive samples in the same month.

3. The system fails to take every required repeat sample after any single total coliform-positive sample.

(2) Level 2 TT triggers.

1. An *E. coli* MCL violation, as specified in 41.2(1) "m"(1).

2. A second Level 1 trigger as defined above in 41.2(1) "i"(1) within a rolling 12-month period, unless the department has determined a likely reason that the samples that caused the first Level 1 TT trigger were total coliform-positive and has established that the system has corrected the problem.

j. Assessment requirements. Systems must ensure that Level 1 and 2 assessments are conducted to identify the possible presence of sanitary defects and defects in distribution system coliform monitoring practices. Level 1 assessments may be conducted by a system owner or operator. Level 2 assessments must be conducted by the department with the assistance of the system owner or operator.

(1) General. Systems must conduct assessments consistent with any department directives and ensure that the assessor evaluates minimum elements, including:

1. A review and identification of inadequacies in sample sites;
2. Sampling protocol and processing;
3. Atypical events that could affect or indicate an impairment in distributed water quality;
4. Changes in distribution system operation or maintenance that could affect distributed water quality (including water storage);
5. Source and treatment considerations that bear on distributed water quality, where appropriate (e.g., small GW systems); and
6. Existing water quality monitoring data.

(2) Level 1 assessment. A system must conduct a Level 1 assessment if it exceeds one of the TT triggers in 41.2(1) “i”(1).

1. A system must complete a Level 1 assessment as soon as practical after any trigger in 41.2(1) “i”(1). The assessment form must describe the sanitary defects detected and corrective actions completed and include a proposed timetable for any other corrective action completion. It may also be noted on the assessment form that no sanitary defects were identified. A system must submit the completed Level 1 assessment form to the department within 30 days of learning that it has exceeded a trigger.

2. If the department reviews the completed Level 1 assessment and determines that it is not sufficient (including any proposed timetable for corrective action completion), the

department must consult with the system. If the department requires revisions after consultation, the system must submit a revised assessment form to the department on an agreed-upon schedule, not to exceed 30 days.

3. Upon submission of an assessment form, the department must determine if the system has identified the likely cause for the Level 1 trigger and, if so, establish that the system has corrected the problem or has included an acceptable schedule to correct the problem.

(3) Level 2 assessment. A system must ensure that a Level 2 assessment is conducted if it exceeds one of the TT triggers in 41.2(1) “i”(2). A system must comply with any department-required expedited or additional actions in the case of an *E. coli* MCL violation.

1. A system must ensure that a Level 2 assessment is completed by the department as soon as practical after any trigger in 41.2(1) “i”(2). The assessment form must describe the sanitary defects detected and corrective actions completed and include a proposed timetable for any other corrective action completion. It may also be noted on the assessment form that no sanitary defects were identified. A system must submit a completed Level 2 assessment form to the department within 30 days of learning that the system has exceeded a trigger.

2. If the department reviews the completed Level 2 assessment and determines that it is not sufficient (including any proposed timetable for corrective action completion), the department must consult with the system. If the department requires revisions after consultation, the system must submit a revised assessment form to the department on an agreed-upon schedule, not to exceed 30 days.

3. Upon submission of an assessment form, the department must determine if a system has identified the likely cause for the Level 2 trigger and determine whether the system has corrected the problem or has included an acceptable schedule to correct the problem.

(4) Corrective actions. A system must correct sanitary defects found through either a Level 1 or 2 assessment. Corrective action(s) that are not completed by a system prior to the

submission of the assessment form must be completed in compliance with a timetable approved by the department in consultation with the system. Systems must notify the department when each scheduled corrective action is completed.

(5) Consultation. At any time during the assessment or corrective actions phase, either the system or the department may request a consultation with the other party to determine appropriate actions. A system may consult with the department on all relevant information that may impact its ability to comply with this subrule.

k. Reporting requirements.

(1) *E. coli.*

1. A system must notify the department by the end of the same day when it learns of an *E. coli*-positive violation or routine sample.

2. If a notification is outside of the department's routine office hours, the system shall call the department's Environmental Emergency Reporting Hotline at 515.725.8694.

(2) A system that has violated the coliform TT in 41.2(1) "i" must report the violation to the department no later than the end of the next business day after learning of the violation and must provide PN in accordance with rule 567—40.5(455B).

(3) A system required to conduct an assessment under the provisions of 41.2(1) "i" must submit an assessment form within 30 days. Systems must notify the department in accordance with 41.2(1) "j"(4) when each scheduled corrective action is completed.

(4) A system that has failed to comply with a coliform monitoring requirement must report the monitoring violation to the department within ten days of discovering the violation and must provide PN in accordance with rule 567—40.5(455B).

(5) A seasonal system must certify, prior to serving water to the public, that it has complied with the department-approved start-up procedure.

l. Recordkeeping requirements. Additional recordkeeping requirements are listed in 567—subrule 40.9(10).

m. Violations. A system is in violation and must conduct PN in accordance with rule 567—40.5(455B) in any of the following instances.

(1) *E. coli* MCL violation. A system is in violation of the MCL for *E. coli* when any of the following occurs:

1. An *E. coli*-positive repeat sample following a total coliform-positive routine sample;
2. A total coliform-positive repeat sample following an *E. coli*-positive routine sample;
3. Failure to take all required repeat samples following an *E. coli*-positive routine sample;

or

4. Failure to test for *E. coli* when any repeat sample tests positive for total coliform.

(2) TT violation. A system is in violation of a TT trigger when any of the following occurs:

1. Exceedance of a TT trigger specified in 41.2(1) “i” and failure to conduct the required assessment within the time frame specified in 41.2(1) “j”;

2. Exceedance of a TT trigger specified in 41.2(1) “i” and failure to conduct the required corrective actions within the time frame specified in 41.2(1) “j”(4); or

3. A seasonal system failing to complete a department-approved start-up procedure prior to serving water to the public, including collection of a finished water sample that tests total coliform-negative.

(3) Monitoring violation. A system is in violation of monitoring requirements if it fails to either:

1. Take every required routine or additional routine sample in a compliance period; or
2. To analyze for *E. coli* following a total coliform-positive routine sample.

(4) Reporting violation. A system is in violation of the reporting requirements if it fails to:

1. Submit a monitoring report in a timely manner after a system properly conducts monitoring;

2. Submit a completed assessment form in a timely manner after a system properly conducts an assessment;

3. Notify the department in a timely manner following an *E. coli*-positive sample, as required by 41.2(1) “h”(1); or

4. Submit the certification of completion of department-approved start-up procedure by a seasonal system.

n. Best available technology (BAT). The EPA identifies, and the department has adopted, the following as the best technology, TTs, or other means available for all systems in achieving compliance with the *E. coli* MCL in 41.2(1) “a.” The following is also identified as affordable technology, TTs, or other means available to systems serving 10,000 or fewer people for achieving compliance with the *E. coli* MCL.

(1) Protection of wells from fecal contamination by appropriate placement and construction.

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

(3) Proper distribution system maintenance, including appropriate pipe replacement and repair procedures, main flushing programs, proper operation and maintenance of storage tanks and reservoirs, cross-connection control, and continual maintenance of a minimum positive water pressure of 20 psi in all parts of the distribution system at all times.

(4) Filtration or disinfection of surface water (SW) or influenced groundwater (IGW) in accordance with rules 567—43.5(455B), 567—43.9(455B), and 567—43.10(455B) or disinfection of GW in accordance with rule 567—41.7(455B) using strong oxidants such as, but not limited to, chlorine, chlorine dioxide, or ozone.

(5) For GW systems, compliance with the requirements of the department's wellhead protection program.

41.2(2) *Heterotrophic plate count (HPC) bacteria.*

a. Applicability. All PWSs that use a SW source or source under the direct influence of SW must provide treatment consisting of disinfection, as specified in 567—subrule 43.5(2), and filtration treatment, as specified in 567—subrule 43.5(3). The HPC is an alternate method to demonstrate a detectable disinfectant residual in accordance with 567—paragraph 43.5(2) “d.”

b. Analytical methodology. PWSs shall conduct HPC bacteria analysis in accordance with 567—subrule 43.5(2) and the following analytical method. When HPC bacteria are being measured in lieu of a detectable residual disinfectant pursuant to 567—paragraph 43.5(2) “d,” measurements must be conducted by a laboratory certified by the department to do such analysis. The time from sample collection to initiation of analysis may not exceed eight hours, and systems must hold the samples below 10 degrees Celsius during transit to the laboratory.

(1) Method. The HPC shall be performed in accordance with one of the following methods:

1. Method 9215B Pour Plate Method, SM, 18th (1992), 19th (1995), 20th (1998), 21st (2005), and 22nd (2012) editions. The cited method in any of these editions may be used. SM Online method 9215 B-04 may be used.

2. SimPlate Method, “IDEXX SimPlate TM HPC Test Method for Heterotrophs in Water,” November 2000, IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, ME 04092.

(2) Reporting. A PWS shall report the results of HPC bacteria in accordance with 567—subparagraph 40.8(3) “c”(2).

41.2(3) *Macroscopic organisms and algae.*

a. Applicability. This subrule applies to CWSs, NTNCs, and TNCs using SW or IGW, as defined by 567—subrule 43.5(1).

b. MCLs for macroscopic organisms and algae. Finished water shall be free of any macroscopic organisms such as plankton, worms, or cysts. The finished water algal cell count shall not exceed 500 organisms per mL or 10 percent of the total cells found in the raw water, whichever is greater.

c. Analytical methodology. Algal cell measurement shall be in accordance with Method 10200F: Phytoplankton Counting Techniques, SM, 18th edition, pp. 10-13 to 10-16. Such measurement shall be required only when the department determines, on the basis of complaints or otherwise, that excessive algal cells may be present.

567—41.3(455B) MCLs and monitoring requirements for inorganic contaminants other than lead or copper.

41.3(1) *MCLs and other requirements for inorganic chemical (IOC) contaminants.*

a. Applicability. The MCLs, BATs, and analytical methods for IOC contaminants specified in this subrule apply to CWSs and NTNCs as specified herein. The fluoride MCL applies only to CWSs and NTNCs that primarily serve children (child care facilities and schools). The nitrate, nitrite, and total nitrate and nitrite MCLs apply to CWSs, NTNCs and TNCs. At the department's discretion, nitrate levels not to exceed 20.0 mg/L may be allowed in a NCWS if the supplier of water demonstrates to the department's satisfaction that:

- (1) Such water will not be available to children under six months of age;
- (2) The system is meeting the PN requirements of rule 567—40.5(455B), including continuous posting of the fact that nitrate levels exceed 10 mg/L and the potential health effects of exposure;
- (3) The following public health authorities will be notified annually of nitrate levels that exceed 10 mg/L, in addition to the reporting requirements of 567—Chapters 40 and 41: the local county health officials, including the health department, sanitarian, and public health administrator, and the Iowa department of health and human services; and

(4) No adverse health effects shall result.

b. IOC MCLs.

(1) The following table specifies the IOC MCLs:

IOC Contaminant	EPA Contaminant Code	MCL (mg/L)
Antimony	1074	0.006
Arsenic	1005	0.010
Asbestos	1094	7 million fibers/liter (longer than 10 micrometers in length)
Barium	1010	2
Beryllium	1075	0.004
Cadmium	1015	0.005
Chromium	1020	0.1
Cyanide (as free Cyanide)	1024	0.2
Fluoride*	1025	4.0
Mercury	1035	0.002
Nitrate	1040	10 (as nitrogen)
Nitrite	1041	1.0 (as nitrogen)
Total Nitrate and Nitrite	1038	10 (as nitrogen)
Selenium	1045	0.05
Thallium	1085	0.002

*The recommended fluoride level is 0.7 mg per liter as published by the U.S. Department of Health and Human Services, Public Health Service (July-August 2015). At this optimum level in drinking water, fluoride has been shown to have beneficial effects in reducing the occurrence of tooth decay.

(2) Compliance calculations. IOC MCL compliance shall be determined using the analytical result(s) obtained at each source/entry point (SEP). When the department requires a system to collect nitrate or nitrite samples in its distribution system, IOC MCL compliance shall also be determined using the analytical result(s) obtained at each discrete sampling point in the distribution system. Arsenic sampling results must be reported to the nearest 0.001 mg/L.

1. Sampling frequencies greater than annual. For PWSs monitoring at a frequency greater than annual, compliance with the MCLs for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, selenium, and thallium is determined by a running annual average (RAA) at any sampling point. If the RAA at any sampling point is greater than the MCL, then the system is out of compliance. If any one sample would cause the RAA to be exceeded, then the system is out of compliance immediately. Any sample below the method detection limit (MDL) shall be calculated at zero for the purpose of

determining the RAA. If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

2. Sampling frequencies of annual or less. For PWSs monitoring annually or less frequently, the system is out of compliance with the MCLs for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, selenium, and thallium if the level of a contaminant at any sampling point is greater than the MCL. If a confirmation sample is required by the department, it must be collected as soon as possible from the same sampling location, but not to exceed two weeks, and the compliance determination will be based on the average of the two samples. If a system fails to collect the required number of samples, compliance (average concentration) will be based on the total number of samples collected.

3. Nitrate and nitrite. Compliance with the nitrate and nitrite MCLs is determined based on one sample if the level of these contaminants is below the MCLs. If the level of nitrate or nitrite exceeds the MCLs in the initial sample, a confirmation sample may be required in accordance with 41.3(1) “c”(7)“2” and compliance shall be determined based on the average of the initial and confirmation samples.

(3) Additional requirements. The department may assign additional requirements deemed necessary to protect public health, including PN requirements or earlier compliance dates than indicated in rule. When a system is not in compliance with an MCL in this paragraph, the supplier of the water shall notify the department according to 567—subrule 40.8(1) and provide PN according to rule 567—40.5(455B).

c. IOC monitoring requirements.

(1) Routine IOC monitoring (excluding asbestos, nitrate, and nitrite). CWSs and NTNCs shall monitor to determine compliance with the IOC MCLs, in accordance with this subrule. TNCs shall monitor to determine compliance with the nitrate and nitrite MCLs as required by

41.3(1) “c”(5) and 41.3(1) “c”(6). All new systems or systems that use a new source of water must demonstrate compliance with the IOC MCLs within a time period specified by the department. A system must also comply with the specified initial sampling frequencies to ensure it can demonstrate MCL compliance. Routine and increased monitoring shall be conducted in accordance with this paragraph. A source of water that is determined by the department to be a new SEP is considered to be a new source for the purposes of this rule.

(2) Department designated sampling schedules. Each PWS shall monitor at the time designated by the department during each compliance period. The monitoring protocol is as follows:

1. GW sampling points. GW systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a source/entry point or SEP). Systems shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

2. SW sampling points. SW systems shall take a minimum of one sample at every SEP after any application of treatment or in the distribution system at a point that is representative of each SEP. For purposes of this paragraph, SW systems include systems with a combination of SW and GW sources. Systems shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

3. Multiple sources. If a PWS draws water from more than one source and the sources are combined before distribution, it must sample at an SEP during periods of normal operating conditions (i.e., when water is representative of all sources being used).

4. Composite sampling. The department may reduce the total number of samples that must be analyzed by compositing. In systems serving less than or equal to 3,300 persons, composite samples from a maximum of five samples are allowed, provided that the detection limit of the

analysis method is less than one-fifth of the MCL. Sample compositing must be done in the laboratory. If the concentration in the composite sample is greater than or equal to one-fifth of the MCL of any IOC, a follow-up sample must be taken within 14 days at each sampling point included in the composite. The follow-up samples must be analyzed for the contaminants that exceeded one-fifth of the MCL in the composite sample. If duplicates of the original sample taken from each sampling point used in the composite are available, the system may use the duplicates instead of resampling, provided the holding time of the duplicates is not exceeded. Duplicates must be analyzed and the results reported to the department within 14 days after sample analysis. If the system serves a population greater than 3,300 persons, compositing may only be allowed at sampling points within a single system. For systems serving less than or equal to 3,300 persons, the department may allow compositing among different systems provided the five-sample limit is maintained. Detection limits for each IOC analytical method are in 41.3(1) “e”(1).

(3) Asbestos monitoring frequency. Monitoring to determine compliance with the asbestos MCL shall be conducted as follows:

1. Initial sampling frequency. Each CWS and NTNC is required to monitor for asbestos during the first three-year compliance period of each nine-year compliance cycle.
2. Asbestos waiver. If a PWS believes it is not vulnerable to asbestos contamination either in its source water or due to the presence of asbestos-cement pipe, or both, it may apply for a waiver of the asbestos monitoring requirement in this subparagraph. If the department grants the waiver, the system is not required to monitor. The department may grant a waiver based on a consideration of potential asbestos contamination of the water source, the use of asbestos-cement pipe for finished water distribution, and the corrosive nature of the water. An asbestos waiver remains in effect until the completion of the three-year compliance period. Systems

not receiving a waiver must monitor in accordance with the initial sampling frequency in this subparagraph.

3. Distribution system vulnerability. A PWS vulnerable to asbestos contamination due solely to the presence of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

4. Source water vulnerability. A PWS vulnerable to asbestos contamination due solely to source water shall monitor in accordance with the department designated sampling schedules in 41.3(1) “c”(2).

5. Combined vulnerability. A PWS vulnerable to asbestos contamination due both to its source water supply and the presence of asbestos-cement pipe shall take one sample at a tap served by asbestos-cement pipe and under conditions where asbestos contamination is most likely to occur.

6. Asbestos MCL exceedance. A PWS that exceeds the asbestos MCL shall monitor quarterly beginning in the next quarter after the violation occurred.

7. Asbestos below the MCL. The department may decrease the quarterly monitoring requirement to the initial sampling frequency in this subparagraph provided a system is reliably and consistently below the asbestos MCL. In no case can the department make this determination unless a GW system takes a minimum of two quarterly samples and a surface (or combined surface/ground) water system takes a minimum of four quarterly samples.

8. Grandfathered asbestos data. If monitoring data are generally consistent with the requirements of this subparagraph, the department may allow PWSs to use that data to satisfy the monitoring requirement.

(4) Monitoring frequency for other IOCs. Monitoring to determine compliance with the MCLs for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, selenium, and thallium shall be conducted as follows:

1. IOCs sampling frequency. GW systems shall take one sample at each sampling point once every three years. SW systems (or combined SW/GW systems) shall take one sample annually at each sampling point.

2. IOC sampling waiver. The PWS may apply for a waiver from the IOC sampling frequencies specified in this subparagraph. A PWS shall take a minimum of one sample while a waiver is effective. The term during which the waiver is effective shall not exceed one compliance cycle (i.e., nine years).

3. IOC waiver and grandfathered data. The department may grant a waiver provided SW systems have monitored annually for at least three years and GW systems have conducted a minimum of three rounds of monitoring. Both SW and GW systems shall demonstrate that all previous analytical results were less than the MCL. Systems that use a new water source are not eligible for a waiver until three rounds of monitoring from the new source have been completed. Systems may be granted a waiver for cyanide monitoring, provided the department determines that the system is not vulnerable due to a lack of any industrial source of cyanide.

4. IOC sampling frequency during a waiver. In determining the appropriate reduced monitoring frequency, the department will consider: reported concentrations from all previous monitoring; the degree of variation in reported concentrations; and other factors which may affect contaminant concentrations, such as changes in GW pumping rates, system configuration, system operating procedures, or stream flow characteristics.

5. Effect of an IOC waiver. A decision to grant a waiver shall be made in writing and include the basis for the determination. The determination may be initiated by the department or upon an application by a PWS. A PWS shall specify the basis for its request. The

department may review and, where appropriate, revise its determination of the appropriate monitoring frequency when a system submits new monitoring data or when other data relevant to a system's appropriate monitoring frequency become available.

6. Exceedance of an IOC MCL. PWSs that exceed the IOC MCLs shall monitor quarterly beginning in the next quarter after the violation occurred.

7. IOCs reliably and consistently below the MCL. The department may decrease the quarterly monitoring requirement to the IOC sampling frequencies specified in "1" and "3" of this subparagraph provided it has determined that a PWS is reliably and consistently below the MCL. The department shall not make this determination unless a GW system takes a minimum of two quarterly samples and a SW system takes a minimum of four quarterly samples.

(5) Nitrate monitoring frequency. All PWSs (CWSs, NTNCs, and TNCs) shall monitor to determine compliance with the nitrate MCL.

1. Initial nitrate sampling. All PWSs served by GW systems shall monitor annually.

2. GW repeat nitrate sampling frequency. For GW PWS, the repeat monitoring frequency is:

- Quarterly for at least one year following any one sample in which the concentration is greater than or equal to 5.0 mg/L as N. The department may allow a GW system to reduce its sampling frequency to annually after four consecutive quarterly samples are reliably and consistently less than 5.0 mg/L as N.

- Monthly for at least one year following any one sample in which the concentration is greater than or equal to 10.0 mg/L as N.

3. SW repeat nitrate sampling frequency. The department may allow a PWS SW system to reduce the sampling frequency to:

- Annually if all analytical results from four consecutive quarters are less than 5.0 mg/L as N.

- Quarterly for at least one year following any one sample in which the concentration is greater than or equal to 5.0 mg/L as N. The department may allow a SW system to reduce the sampling frequency to annually after four consecutive quarterly samples are reliably and consistently less than 5.0 mg/L as N.

- Monthly for at least one year following any nitrate MCL exceedance.

4. Scheduling annual nitrate repeat samples. After the initial round of quarterly sampling is completed, each CWS and NTNC monitoring annually shall take subsequent samples during the quarter(s) which previously resulted in the highest analytical result.

(6) Nitrite monitoring frequency. All PWSs shall monitor to determine compliance with the nitrite MCL.

1. Initial nitrite sampling. All PWSs shall take one sample at each sampling point.

2. Nitrite repeat monitoring. After the initial sample, systems where an analytical result for nitrite is less than 0.50 mg/L as N shall monitor at the department-specified frequency.

3. Nitrite increased monitoring. For all PWSs, the repeat monitoring frequency is:

- Quarterly for at least one year following any one sample in which the concentration is greater than or equal to 0.50 mg/L as N. The department may allow a system to reduce the sampling frequency to annually after determining a system is reliably and consistently less than 0.50 mg/L.

- Monthly for at least one year following any nitrite MCL exceedance.

4. Scheduling of annual nitrite repeat samples. Systems monitoring annually shall take each subsequent sample during the quarter(s) which previously resulted in the highest analytical result.

(7) IOC confirmation sampling.

1. IOC confirmation sample deadline (other than nitrate and nitrite). Where the results of an analysis for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, or thallium indicate an MCL exceedance, the department may require the collection of one additional sample as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point.

2. Nitrate and nitrite confirmation sample deadline. Where nitrate or nitrite sampling results indicate an MCL exceedance and the sampling frequency is quarterly or annual, a system shall take a confirmation sample within 24 hours of its receipt of the analytical results. PWSs unable to comply with the 24-hour confirmation sampling requirement must immediately notify the consumers served by the area served by the PWS in accordance with 567—40.5(455B) Tier 1 PN and complete an analysis of a confirmation sample within two weeks of receipt of the analytical results of the first sample. Where the sampling frequency is monthly, a confirmation sample will not be used to determine MCL compliance.

3. Compliance calculations and confirmation samples. If a required confirmation sample collected within the time specified in “1” of this subparagraph is taken for any contaminant, the results of the initial and confirmation sample shall be averaged. The resulting average shall be used to determine the system’s compliance with the IOC MCLs. The department has the discretion to invalidate results of obvious sampling errors.

(8) Designation of increased sampling frequency. The department, at its discretion, may require more frequent monitoring than specified for asbestos, other IOCs, nitrate, and nitrite in 41.3(1) “c”(3) through 41.3(1) “c”(6), or confirmation samples for positive and negative results. PWSs may apply to conduct more frequent monitoring than the minimum monitoring specified in this subrule. Any increase or decrease in monitoring under this subparagraph will be designated in an operation permit or administrative order. To increase or decrease such frequency, the department shall consider:

1. Reported concentrations from previously required monitoring,
2. The degree of variation in reported concentrations,
3. Blending or treatment processes conducted to comply with an MCL, TT, or AL, and
4. Other factors, including changes in pumping rates in GW supplies, significant changes in a system's configuration, operating procedures, source of water, or streamflow changes.

(9) Grandfathered data. For the initial analysis required in this paragraph (41.3(1) "c"), data for surface waters acquired within one year prior to the effective date and data for GWs acquired within three years prior to [the effective date of this paragraph] may be substituted at the department's discretion.

d. Analytical and sampling methodology.

(1) IOC analytical methods. IOC contaminants shall be analyzed using the following methods, or their equivalent as determined by EPA. Criteria for analyzing arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, sodium, and thallium with digestion or directly without digestion, and other analytical test procedures are contained in Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October 1994, NTIS PB95-104766.

IOC Contaminant Analytical Methods

Contaminant	Methodology ¹⁵	EPA	ASTM ³	SM	SM Online ²⁶	Other	MDL in mg/L
Antimony	Atomic absorption; furnace			3113B ^{4, 27, 33}	3113 B-04, B-10		0.003
	Atomic absorption; platform	200.9 ²					0.0008 ¹²
	ICP-MS ³⁵	200.8 ²					0.0004
	Atomic absorption; hydride		D3697-92, 02, 07, 12				0.001
	AVICP-AES ¹⁷	200.5, Rev. 4.2 ²⁸					
Arsenic ¹⁶	ICP-MS	200.8 ²					0.0014
	Atomic absorption; platform	200.9 ²					0.0005 ¹⁵
	Atomic absorption; furnace		D2972-97C, 03C, 08C	3113B ^{4, 27, 33}	3113 B-04, B-10		0.001
	Atomic absorption; hydride		D2972-97B, 03B, 08B	3114B ^{4, 27, 33}	3114 B-09		0.001
	AVICP-AES ¹⁷	200.5, Rev. 4.2 ²⁸					

Asbestos	Transmission electron microscopy	100.1 ⁹					0.01 MFL
	Transmission electron microscopy	100.2 ¹⁰					
Barium	ICP	200.7 ²		3120B ^{18, 27, 33}	3120 B-99		0.002
	ICP-MS ³⁵	200.8 ²					
	Atomic absorption; direct			3111D ^{4, 27, 33}	3111 D-99		0.1
	Atomic absorption; furnace			3113B ^{4, 27, 33}	3113 B-04, B-10		0.002
	AVICP-AES ¹⁷	200.5, Rev. 4.2 ²⁸					
Beryllium	ICP ³⁵	200.7 ²		3120B ^{18, 27, 33}	3120 B-99		0.0003
	ICP-MS ³⁵	200.8 ²					0.0003
	Atomic absorption; platform	200.9 ²					0.00002 ¹²
	Atomic absorption; furnace		D3645-97B, 03B, 08B	3113B ^{4, 27, 33}	3113 B-04, B-10		0.0002
	AVICP-AES ¹⁷	200.5, Rev. 4.2 ²⁸					
Cadmium	ICP ³⁵	200.7 ²					0.001
	ICP-MS ³⁵	200.8 ²					
	Atomic absorption; platform	200.9 ²					
	Atomic absorption; furnace			3113B ^{4, 27, 33}	3113 B-04, B-10		0.0001
	AVICP-AES ¹⁷	200.5, Rev. 4.2 ²⁸					
Chromium	ICP ³⁵	200.7 ²		3120B ^{18, 27, 33}	3120 B-99		0.007
	ICP-MS ³⁵	200.8 ²					
	Atomic absorption; platform	200.9 ²					
	Atomic absorption; furnace			3113B ^{4, 27, 33}	3113 B-04, B-10		0.001
	AVICP-AES ¹⁷	200.5, Rev. 4.2 ²⁸					
Cyanide	Manual distillation (followed by 1 of the 4 methods listed below:)		D2036-98A, D2036-06A	4500-CN-C ^{18, 27, 33}			
	Spectrophotometric; amenable ¹⁴		D2036-98B, D2036-06B	4500-CN-G ^{18, 27, 33}	4500-CN-G-99		0.02
	Spectrophotometric; manual ¹³		D2036-98A, D2036-06A	4500-CN-E ^{18, 27, 33}	4500-CN-E-99	I-3300-85 ⁵	0.02
	Spectrophotometric; semi-automated ¹³	335.4 ⁶					0.005
	Selective electrode ¹³			4500-CN-F ^{18, 27, 33}	4500-CN-F-99		0.05
	UV, distillation, spectrophotometric ²²					Kelada 01 ²⁰	0.0005
	Micro distillation, flow injection, spectrophotometric ¹³					QuikChem 10-204-00-1-X ²¹	0.0006
	Ligand exchange with amperometry ¹⁴		D6888-04			OIA-1677, DW ²⁵	0.0005
	GC/MS headspace					ME355.01 ²⁹	
Fluoride	IC ³⁶	300.0 ⁶ , 300.12 ³	D4327-97, 03, 11	4110B ^{18, 27, 33}	4110 B-00		
	Manual distillation; colorimetric; SPADNS			4500F-B, D ^{18, 27, 33}	4500 F-B, D-97		
	Manual electrode		D1179-93B, 99B, D1179-04B, 10B	4500F-C ^{18, 27, 33}	4500 F-C-97		
	Automated electrode					380-75WE ¹¹	

	Automated alizarin			4500F-E ^{18, 27, 33}	4500 F-E-97	129-71W ¹¹	
	Capillary ion electrophoresis					D6508, Rev. 2 ²⁴	
	Arsenite-free colorimetric; SPADNS					Hach SPADNS 2 Method 10225 ³¹	
Magnesium	Atomic absorption; direct		D511-93, 03B, 09B, 14B	3111B ^{4, 27, 33}	3111 B-99		
	ICP ³⁵	200.7 ¹		3120B ^{18, 27, 33}	3120 B-99		
	Complexation Titrimetric Methods		D511-93, 03A, 09A, 14B	3500-Mg E ⁴ 3500-Mg B ^{19, 27, 33}	3500-Mg B-97		
	IC		D6919-03, 09				
	AVICP-AES ¹⁷	200.5, Rev. 4.2 ²⁸					
Mercury	Manual, cold vapor	245.1 ²	D3223-97, 02, 12	3112B ^{4, 27, 33}	3112 B-09		0.0002
	Automated, cold vapor	245.2 ¹					0.0002
	ICP-MS ³⁵	200.8 ²					
Nickel	ICP ³⁵	200.7 ²		3120B ^{18, 27, 33}	3120 B-99		0.005
	ICP-MS ³⁵	200.8 ²					0.0005
	Atomic absorption; platform	200.9 ²					0.0006 ¹²
	Atomic absorption; direct			3111B ^{4, 27, 33}	3111 B-99		
	Atomic absorption; furnace			3113B ^{4, 27, 33}	3113 B-04, 10		0.001
	AVICP-AES ³⁵	200.5, Rev. 4.2 ²⁸					
Nitrate	IC ³⁶	300.0 ⁶ , 300.1 ²³	D4327-97, 03, 11	4110B ^{18, 27, 33}	4110 B-00	B-1011 ⁸	0.01
	Automated cadmium reduction	353.2 ⁶	D3867-90A	4500-NO ₃ -F ^{18, 27, 33}	4500-NO ₃ -F-00		0.05
	Ion selective electrode			4500-NO ₃ -D ^{18, 27, 33}	4500-NO ₃ -D-00	601 ⁷	1
	Manual cadmium reduction		D3867-90B	4500-NO ₃ -E ^{18, 27, 33}	4500-NO ₃ -E-00		0.01
	Capillary ion electrophoresis					D6508, Rev. 2 ²⁴	0.076
	Reduction/colorimetric					Systea Easy (1-Reagent) ³⁰ NECi Nitrate-Reductase ³⁴	
	Colorimetric; direct					Hach TNTplus™ 835/836 Method 10206 ³²	
Nitrite	IC ³⁶	300.0 ⁶ , 300.1 ²³	D4327-97, 03, 11	4110B ^{18, 27, 33}	4110 B-00	B-1011 ⁸	0.004
	Automated cadmium reduction	353.2 ⁶	D3867-90A	4500-NO ₃ -F ^{18, 27, 33}	4500-NO ₃ -F-00		0.05
	Manual cadmium reduction		D3867-90B	4500-NO ₃ -E ^{18, 27, 33}	4500-NO ₃ -E-00		0.01
	Spectrophotometric			4500-NO ₂ -B ^{18, 27, 33}	4500-NO ₂ -B-00		0.01
	Capillary ion electrophoresis					D6508, Rev. 2 ²⁴	0.103
	Reduction/colorimetric					Systea Easy (1-Reagent) ³⁰ NECi Nitrate-Reductase ³⁴	
Selenium	Atomic absorption; hydride		D3859-98, 03A, 08A	3114B ^{4, 27, 33}	3114 B-09		0.002
	ICP-MS ³⁵	200.8 ²					
	Atomic absorption; platform	200.9 ²					

	Atomic absorption; furnace		D3859-98, 03B, 08B	3113B ^{4, 27, 33}	3113 B-04, 10		0.002
	AVICP-AES ¹⁷	200.5, Rev. 4.2 ²⁸					
Sodium	ICP ³⁵	200.7 ²					
	Atomic absorption; direct			3111B ^{4, 27, 33}	3111 B-99		
	IC ³⁶		D6919-03, 09				
	AVICP-AES ¹⁷	200.5, Rev. 4.2 ²⁸					
Thallium	ICP-MS ³⁵	200.8 ²					
	Atomic absorption; platform	200.9 ²					0.0007 ¹²

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from the sources listed below. Information regarding the documents can be obtained from the Safe Drinking Water Hotline at 800.426.4791. Documents may be inspected at EPA's Drinking Water Docket or at the Office of Federal Register.

¹"Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1983. NTIS, PB84-128677.

²"Methods for the Determination of Metals in Environmental Samples—Supplement I," EPA-600/R-94-111, May 1994. NTIS, PB95-125472.

³ASTM, 1994, 1996, 1999 or 2003, Vols. 11.01 and 11.02; the methods listed are the only versions that may be used.

⁴18th and 19th editions, SM, 1992 and 1995, respectively.

⁵Techniques of Water Resources Investigation of the USGS, Book 5, Chapter A-1, 3rd edition, 1989, Method I-3300-85. Information Services, USGS, Federal Center, Box 25286, Denver, CO 80225-0425.

⁶"Methods for the Determination of Inorganic Substances in Environmental Samples," EPA-600-R-93-100, August 1993. NTIS, PB94-120821.

⁷The procedure shall be done in accordance with the Technical Bulletin 601, "Standard Method of Test for Nitrate in Drinking Water," July 1994, PN221890-001, Analytical Technology, Inc. ATI Orion, 529 Main Street, Boston, MA 02129.

⁸Method B-1011, "Waters Test Method for Determination of Nitrite/Nitrate in Water Using Single Column Ion Chromatography," August 1987. Waters Corporation, Technical Services Division, 34 Maple Street, Milford, MA 01757.

⁹Method 100.1, "Analytical Method for Determination of Asbestos Fibers in Water," EPA-600/4-83-043, EPA, September 1983. NTIS, PB83-260471.

¹⁰Method 100.2, "Determination of Asbestos Structure Over 10 Microns in Length in Drinking Water," EPA-600/R-94-134, June 1994. NTIS, PB94-201902.

¹¹Industrial Method No. 129-71W, “Fluoride in Water and Wastewater,” December 1972, and Method No. 380-75WE, “Fluoride in Water and Wastewater,” February 1976, Technicon Industrial Systems. Bran & Luebbe, 1025 Busch Parkway, Buffalo Grove, IL 60089.

¹²Lower MDLs are reported using stabilized temperature graphite furnace atomic absorption.

¹³Screening method for total cyanides.

¹⁴Measures “free” cyanides when distillation, digestion, or ligand exchange is omitted.

¹⁵Because MDLs reported in EPA Methods 200.7 and 200.9 were determined using a 2X preconcentration step during sample digestion, MDLs determined when samples are analyzed by direct analysis (i.e., no sample digestion) will be higher. For direct analysis of cadmium by Method 200.7, sample preconcentration using pneumatic nebulization may be required to achieve lower detection limits. Preconcentration may also be required for direct analysis of antimony and thallium by Method 200.9, and antimony by Method 3113B, unless multiple in-furnace depositions are made.

¹⁶If ultrasonic nebulization is used in arsenic determination by Method 200.8, the arsenic must be in the pentavalent state to provide uniform signal response. For direct analysis of arsenic with Method 200.8 using ultrasonic nebulization, samples and standards must contain 1 mg/L of sodium hypochlorite.

¹⁷AVICP-AES means axially viewed inductively coupled plasma-atomic emission spectrometry.

¹⁸18th, 19th, and 20th editions, SM, 1992, 1995, and 1998, respectively.

¹⁹20th edition, SM, 1998.

²⁰Kelada 01 Method, “Kelada Automated Test Methods for Total Cyanide, Acid Dissociable Cyanide, and Thiocyanate,” Revision 1.2, August 2001, EPA #821-B-01-009 for cyanide, NTIS PB 2001-108275. Note: A 450W UV lamp may be used in this method instead of the 550W lamp specified if it provides performance within the quality control acceptance criteria of the method in a given instrument. Similarly, modified flow cell configurations and flow conditions may be used in the method, provided that the quality control acceptance criteria are met.

²¹QuikChem Method 10-204-00-1-X, “Digestion and distillation of total cyanide in drinking water and wastewaters using MICRO DIST and determination of cyanide by flow injection analysis,” Revision 2.1, November 30, 2000, Lachat Instruments, 6645 W. Mill Road, Milwaukee, WI 53218.

²²Measures total cyanides when UV-digester is used, and “free” cyanides when UV-digester is bypassed.

²³“Methods for the Determination of Organic and Inorganic Compounds in Drinking Water,” Volume 1, EPA 815-R-00-014, August 2000. NTIC, PB2000-106981.

²⁴Method D6508, Rev. 2, “Test Method for Determination of Dissolved Inorganic Anions in Aqueous Matrices Using Capillary Ion Electrophoresis and Chromate Electrolyte,” Waters Corp., 34 Maple Street, Milford, MA 01757.

²⁵Method OIA-1677, DW “Available Cyanide by Flow Injection, Ligand Exchange, and Amperometry,” January 2004. EPA-821-R-04-001. ALPKEM, a division of OI Analytical, P.O. Box 9010, College Station, TX 77542-9010.

²⁶SM Online. The year that each method was approved is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

²⁷SM, 21st edition (2005).

²⁸EPA Method 200.5, Revision 4.2: “Determination of Trace Elements in Drinking Water by Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry,” 2003. EPA/600/R-06/115, www.nemi.gov.

²⁹Method ME355.01, Revision 1.0, “Determination of Cyanide in Drinking Water by GC/MS Headspace,” May 26, 2009, www.nemi.gov or H & E Testing Laboratory, 221 State Street, Augusta, ME 04333.

³⁰Systea Easy (1-Reagent), “Systea Easy (1-Reagent) Nitrate Method,” February 4, 2009, www.nemi.gov or Systea Scientific, LLC, 900 Jorie Blvd., Suite 35, Oak Brook, IL 60523.

³¹Hach Company Method, “Hach Company SPADNS 2 (Arsenic-free) Fluoride Method 10225 – Spectrophotometric Measurement of Fluoride in Water and Wastewater,” January 2011, www.hach.com.

³²Hach Company Method, “Hach Company TNTplus™ 835/836 Nitrate Method 10206 – Spectrophotometric Measurement of Nitrate in Water and Wastewater,” January 2011, www.hach.com.

³³SM, 22nd edition (2012).

³⁴Nitrate Elimination Company, Inc. (NECi). “Method for Nitrate Reductase Nitrate-Nitrogen Analysis of Drinking Water,” February 2016. Superior Enzymes, Inc., 334 Hecla Street, Lake Linden, MI 49945.

³⁵IPC means inductively coupled plasma, and ICP-MS means inductively coupled plasma mass spectrometry.

³⁶IC means ion chromatography.

(2) IOC sampling methods. Samples for antimony, arsenic, asbestos, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, nitrate, nitrite, selenium, and thallium under this subparagraph shall be collected using the sample preservation, container, and maximum holding time procedures specified in the table below:

IOC Sampling Methods

Contaminant	Preservative ¹	Container ²	Time ³
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Antimony	HNO ₃	P or G	6 months
Arsenic	HNO ₃	P or G	6 months
Asbestos	4 degrees C	P or G	48 hours for filtration ⁵
Barium	HNO ₃	P or G	6 months
Beryllium	HNO ₃	P or G	6 months
Cadmium	HNO ₃	P or G	6 months
Chromium	HNO ₃	P or G	6 months
Cyanide	4 degrees C, NaOH	P or G	14 days
Fluoride	None	P or G	1 month
Mercury	HNO ₃	P or G	28 days
Nickel	HNO ₃	P or G	6 months
Nitrate ⁴	4 degrees C	P or G	48 hours
Nitrite ⁴	4 degrees C	P or G	48 hours
Selenium	HNO ₃	P or G	6 months
Thallium	HNO ₃	P or G	6 months

¹When indicated, samples must be acidified at the time of collection to pH < 2 with concentrated acid, or adjusted with sodium hydroxide to pH > 12. Samples collected for metals analysis may be preserved by acidification at the laboratory, using a 1:1 nitric acid solution (50 percent by volume), provided the shipping time and other instructions in Section 8.3 of EPA Methods 200.7, 200.8, and 200.9 are followed. When chilling is indicated, the sample must be shipped and stored at 4 degrees Celsius or less.

²P: plastic, hard or soft; G: glass, hard or soft.

³All samples should be analyzed as soon after collection as possible. Follow additional (if any) information on preservation, containers, or holding times that is specified in the method.

⁴Nitrate may only be measured separate from nitrite in samples that have not been acidified. Measurement of acidified samples provides a total nitrate (sum of nitrate plus nitrite) concentration.

⁵Instructions for containers, preservation procedures, and holding times as specified in Method 100.2 must be adhered to for all compliance analyses, including those conducted with Method 100.1.

41.3(2) Reserved.

567—41.4(455B) Lead, copper, and corrosivity.

41.4(1) *Lead, copper, and corrosivity regulation by the setting of a TT requirement.* The lead and copper rules establish a TT that includes requirements for corrosion control treatment (CCT), source water treatment, lead service line (LSL) replacement, and public education (PE). These requirements are triggered, in some cases, by lead and copper action levels (ALs) measured in samples collected at consumers' taps.

a. Applicability. Unless otherwise indicated, the provisions of this subrule apply to CWSs and NTNCs (hereinafter referred to as “PWSs” or “systems”).

b. Action levels (ALs).

(1) The lead AL is exceeded if the lead concentration in more than 10 percent of tap water samples collected during any monitoring period, in accordance with 41.4(1) “c,” is greater than 0.015 mg/L (i.e., if the “90th percentile” lead level is greater than 0.015 mg/L).

(2) The copper AL is exceeded if the copper concentration in more than 10 percent of tap water samples collected during any monitoring period, in accordance with 41.4(1) “c,” is greater than 1.3 mg/L (i.e., if the “90th percentile” copper level is greater than 1.3 mg/L).

(3) 90th percentile calculation. The 90th percentile lead and copper levels shall be computed as follows:

1. The results of all lead or copper samples taken during a monitoring period shall be placed in ascending order from lowest concentration to highest concentration. Each sample shall be assigned a number, ascending by single integers beginning with the number 1 for the sample with the lowest concentration. The number assigned to the sample with the highest concentration shall be equal to the total number of samples taken.

2. The number of samples taken during the monitoring period shall be multiplied by 0.9.

3. The contaminant concentration in the numbered sample yielded by this calculation is the 90th percentile contaminant level.

4. For systems serving fewer than 100 people that collect five samples per monitoring period, the 90th percentile is computed by taking the average of the highest and second highest concentrations.

5. For a PWS allowed by the department to collect fewer than five samples, in accordance with 41.4(1) “c”(3), the sample result with the highest concentration is considered the 90th percentile value.

c. Lead and copper tap water monitoring requirements.

(1) Sample site selection.

1. General. PWSs shall complete a materials evaluation of their distribution systems by the date indicated in 41.4(1) “c”(4) in order to identify a pool of sampling sites that meets the requirements of this subrule, and which is sufficiently large to ensure that the system can collect the number of lead and copper tap samples required in 41.4(1) “c”(3). All sites from which first-draw samples are collected shall be selected from this pool of targeted sampling sites. Sampling sites may not include faucets that have POU or POE treatment devices designed to remove inorganic contaminants.

2. Information sources. A PWS shall use the information on lead, copper, and galvanized steel collected under 41.4(1) “f” when conducting a materials evaluation. When an evaluation of the information is insufficient to locate the requisite number of lead and copper sampling sites meeting the targeting criteria in this subparagraph, the PWS shall review additional information to indicate locations that may be particularly susceptible to high lead or copper concentrations. The additional information includes all building department plumbing codes, permits, and records that indicate the plumbing materials installed within all structures connected to the distribution system; all distribution system inspections and records that indicate the material composition of the service connections that connect a structure to the distribution system; and all existing water quality information, including the results of all prior analyses of the system or individual structures connected to the system. System shall seek to collect such additional information where possible in the course of normal operations.

3. Tier 1 CWS sampling sites. The Tier 1 sampling sites selected for a CWS’s sampling pool shall consist of single-family structures containing copper pipes with lead solder installed after 1982 or containing lead pipes; or served by an LSL. When multiple-family residences

comprise at least 20 percent of the structures served by a water system, the system may include these types of structures in its sampling pool.

4. Tier 2 CWS sampling sites. Any CWS with insufficient Tier 1 sampling sites shall complete its sampling pool with Tier 2 sampling sites, consisting of buildings, including multiple-family residences containing copper pipes with lead solder installed after 1982 or containing lead pipes; or served by an LSL.

5. Tier 3 CWS sampling sites. Any CWS with insufficient Tier 1 and Tier 2 sampling sites shall complete its sampling pool with Tier 3 sampling sites, consisting of single-family structures containing copper pipes with lead solder installed before 1983. A CWS with insufficient Tier 1, Tier 2, and Tier 3 sampling sites shall complete its sampling pool with representative sites throughout the distribution system. A representative site is defined as a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

6. Tier 1 NTNC sampling sites. The Tier 1 sampling sites selected for a NTNC shall consist of buildings containing copper pipes with lead solder installed after 1982 or containing lead pipes; or served by an LSL.

7. Other NTNC sampling sites. An NTNC with insufficient Tier 1 NTNC sites shall complete its sampling pool with sites containing copper pipes with lead solder installed before 1983. If additional sites are needed to complete the sampling pool, the NTNC shall use representative sites throughout the distribution system. A representative site is defined as a site in which the plumbing materials used at that site would be commonly found at other sites served by the water system.

8. LSL sampling sites. Any PWS whose distribution system contains LSLs shall draw 50 percent of the samples collected during each monitoring period from sites containing lead pipes or copper pipes with lead solder, and 50 percent of the samples from sites served by an

LSL. A system that cannot identify a sufficient number of sampling sites served by an LSL shall collect first-draw samples from all of the sites identified as being served by such lines.

(2) Sample collection methods.

1. Tap samples for lead and copper collected in accordance with this subparagraph shall be first-draw samples, except for LSL samples collected under 567—subrule 43.7(4) and 41.4(1) “c”(2)“5.”

2. First-draw tap samples for lead and copper shall be one liter in volume and have stood motionless in the plumbing system of each sampling site for at least six hours. First-draw samples from residential housing shall be collected from the cold-water kitchen tap or bathroom sink tap. First-draw samples from a nonresidential building shall be collected at an interior tap from which water is typically drawn for consumption. First-draw samples may be collected by the system, or it may allow residents to collect first-draw samples after instructing the residents of the sampling procedures specified in this paragraph. To avoid problems of residents handling nitric acid, acidification of first-draw samples may be done up to 14 days after the sample is collected. After acidification, the sample must stand in the original container for the time specified in the approved EPA method before the sample can be analyzed. If a system allows residents to perform sampling, the system may not challenge, based on alleged errors in sample collection, the accuracy of sampling results.

3. LSL samples collected to determine if the service line is directly contributing lead (as described in 567—subrule 43.7(4)) shall be one liter in volume, have stood motionless in the LSL for at least six hours, and be collected at the tap after flushing the volume of water between the tap and the LSL. The volume of water shall be calculated based on the interior diameter and length of the pipe between the tap and the LSL; tapping directly into the LSL; or if the sampling site is a building constructed as a single-family residence, allowing the

water to run until there is a significant change in temperature, indicative of water that has been standing in the LSL.

4. A PWS shall collect each first-draw tap sample from the same sampling site from which it collected a previous sample. If, for any reason, a system cannot gain entry to a sampling site in order to collect a follow-up tap sample, it may collect the follow-up tap sample from another sampling site in its sampling pool as long as the new site meets the same targeting criteria, and is within reasonable proximity of the original site.

5. An NTNC system, or a CWS system meeting the criteria of 567—subparagraph 40.6(2) “d”(2) that does not have enough taps that can supply first-draw samples, may apply to the department in writing to substitute non-first-draw samples. Such systems must collect as many first-draw samples from appropriate taps as possible and identify sampling times and locations that would likely result in the longest standing time for the remaining sites. The department may waive the requirement for prior approval of non-first-draw sample sites selected by the system through written notification to the system. Non-first-draw samples collected in lieu of first-draw samples in accordance with this subparagraph shall be one liter in volume and shall be collected at an interior tap from which water is typically drawn for consumption.

(3) Number of samples. PWS shall collect at least one sample during each monitoring period specified in 41.4(1) “c”(4) from the number of sites specified below in the “standard monitoring” column. A system conducting reduced monitoring under 41.4(1) “c”(4) shall collect at least one sample from the number of sites specified below in the “reduced monitoring” column during each monitoring period. Reduced monitoring sites shall be representative of the sites required for standard monitoring. A PWS with fewer than five drinking water taps used for human consumption that meet the sample site criteria of 41.4(1) “c”(1) and that can be used to reach the required number of sample sites specified in

this subparagraph must collect at least one sample from each tap and then must collect additional samples from those taps on different days during the monitoring period to meet the required number of sites. Alternatively, the department may allow these systems to collect a number of samples less than the number of sites specified in 41.4(1) “c”(1), provided that 100 percent of all taps that can be used for human consumption are sampled. This reduction of the minimum number of samples must be approved in writing by the department, based upon on-site verification or a request from the system. The department may specify sampling locations when a system is conducting reduced monitoring.

Required Number of Lead/Copper Samples

System Size (Number of People Served)	Standard Monitoring (Number of Sites)	Reduced Monitoring (Number of Sites)
greater than 100,000	100	50
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
less than or equal to 100	5	5

(4) Monitoring periods.

1. Initial tap sampling. The first six-month monitoring period for small, medium-size and large systems shall begin on the following dates:

System Size (Number of People Served)	First Six-month Monitoring Period Begins on:
greater than 50,000 (large system)	January 1, 1992
3,301 to 50,000 (medium system)	July 1, 1992
less than or equal to 3,300 (small system)	July 1, 1993

All large systems shall monitor during two consecutive six-month periods. All small and medium-size systems shall monitor during each six-month monitoring period until the system exceeds the lead or copper AL and is, therefore, required to implement the CCT requirements under 567—paragraph 43.7(1) “a,” in which case it shall continue monitoring in accordance with this subparagraph, or the system meets the lead and copper ALs during two consecutive six-month monitoring periods, in which case it may reduce monitoring in accordance with this subparagraph.

2. Monitoring after installation of CCT and source water treatment. Large systems that install optimal corrosion control treatment (OCCT) pursuant to 567—subparagraph 43.7(1) “d”(4) shall monitor during two consecutive six-month monitoring periods by the date specified in 567—subparagraph 43.7(1) “d”(5). Small or medium-size systems that install OCCT pursuant to 567—subparagraph 43.7(1) “e”(5) shall monitor during two consecutive six-month monitoring periods, as specified in 567—subparagraph 43.7(1) “e”(6). Systems that install source water treatment shall monitor during two consecutive six-month monitoring periods by the date specified in 567—subparagraph 43.7(3) “a”(4).

3. Monitoring after the department specifies WQP values for optimal corrosion control (OCC). After the department specifies the values for WQP under 567—paragraph 43.7(2) “f,” the system shall monitor during each subsequent six-month monitoring period, with the first monitoring period to begin on the date the department specifies the OCC values under 567—paragraph 43.7(2) “f.”

4. Reduced monitoring: a small or medium-size PWS that meets the lead and copper ALs during each of two consecutive six-month monitoring periods may reduce the number of lead and copper samples according to 41.4(1) “c” (3) and reduce the sampling frequency to once per year. A small or medium-size system collecting fewer than five samples as specified in 41.4(1) “c” (3) that meets the lead and copper ALs during each of two consecutive six-month monitoring periods may reduce the sampling frequency to once per year. This reduced sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period. A system shall not ever reduce the number of samples required below the minimum of one sample per available tap.

5. Reduced monitoring: any PWS that meets the lead AL and maintains the range of values for the WQPs reflecting OCCT specified in 567—paragraph 43.7(2) “f” during each of two consecutive six-month monitoring periods may reduce the monitoring frequency to once per

year and reduce the number of lead and copper samples according to 41.4(1)“c”(3), upon written department approval. This monitoring shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period. The department shall review monitoring, treatment, and other relevant information submitted by the system in accordance with 567—subrule 40.8(2) and shall notify a system in writing when it determines that a system is eligible to commence reduced monitoring. The department will review and, where appropriate, revise its determination when a system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

6. Reduced monitoring: a small or medium-size PWS that meets the lead and copper ALs during three consecutive years of monitoring may reduce the monitoring frequency for lead and copper from annually to once every three years. Any system that meets the lead AL and maintains the range of values for the WQP reflecting OCCT specified in 567—paragraph 43.7(2)“f” during three consecutive years of monitoring may reduce the monitoring frequency from annually to once every three years if it receives written department approval. Samples collected once every three years shall be collected no later than every third calendar year. The department shall review monitoring, treatment, and other relevant information submitted by a system in accordance with 567—subrule 40.8(2) and shall notify a system in writing when it determines that a system is eligible to commence reduced monitoring. The department will review and, where appropriate, revise its determination when a system submits new monitoring or treatment data, or when other data relevant to the number and frequency of tap sampling becomes available.

7. A PWS that reduces the number and frequency of sampling shall collect samples from sites included in the pool of targeted sampling sites identified in 41.4(1)“c”(1). Systems sampling annually or less frequently shall conduct lead and copper tap sampling during June

through September unless the department, at its discretion, has approved a different sampling period. If approved, the sampling period shall be no longer than four consecutive months and must represent a time of normal operation where the highest levels of lead are most likely to occur. The department shall designate a sampling period representing normal operation for an NTNC system that does not operate during June through September, and for which the period of normal operation where the highest levels of lead are most likely to occur is not known. Sampling shall begin during the approved or designated sampling period in the calendar year immediately following the end of the second consecutive six-month monitoring period for systems initiating annual monitoring and during the three-year period following the end of the third consecutive calendar year of annual monitoring for systems initiating triennial monitoring.

8. Systems monitoring annually or triennially that have been collecting samples during June through September and that receive department approval to alter their sample collection period must collect their next round of samples during a time period that ends no later than 21 months (for annual monitoring) or 45 months (for triennial monitoring) after the previous round of sampling. Subsequent rounds of sampling must be collected annually or triennially, as required by this paragraph.

9. Small systems that have been granted waivers pursuant to 41.4(1) “c”(7), that have been collecting samples during June through September, and that receive department approval to alter their sample collection period as previously stated must collect their next round of samples before the end of the nine-year period.

10. Any PWS that demonstrates for two consecutive six-month monitoring periods that the 90th percentile tap water level computed under 41.4(1) “b”(3) is less than or equal to 0.005 mg/L for lead and is less than or equal to 0.65 mg/L for copper may reduce the number of

samples in accordance with 41.4(1) “c”(3) and reduce the sampling frequency to once every three calendar years, if approved by the department.

11. A small or medium-size PWS subject to reduced monitoring that exceeds the lead or copper AL shall resume sampling according to 41.4(1) “c”(4)“3” and collect the number of samples specified for standard monitoring in 41.4(1) “c”(3). Any such system shall also conduct WQP monitoring in accordance with 41.4(1) “d”(2), 41.4(1) “d”(3), or 41.4(1) “d”(4), as appropriate, during the monitoring period in which it exceeded the AL. Any such system may resume annual lead and copper tap monitoring at the reduced number of sites specified in 41.4(1) “c”(3) after completing two subsequent consecutive six-month rounds of monitoring meeting the criteria of 41.4(1) “c”(4)“4” and may resume triennial lead and copper monitoring at the reduced number of sites after demonstrating through subsequent rounds of monitoring that it meets the criteria of either 41.4(1) “c”(4)“6” or “10” and upon written department approval.

12. Any water system subject to reduced monitoring frequency that fails to meet the lead AL during any four-month monitoring period or that fails to operate at or above the minimum value or within the range of values for the OWQP specified in 567—paragraph 43.7(2) “f” for more than nine days in any six-month period specified in 41.4(1) “d”(4) shall resume tap water sampling according to 41.4(1) “c”(4)“3,” collect the number of samples specified for standard monitoring in 41.4(1) “c”(3), and resume monitoring for WQP within the distribution system in accordance with 41.4(1) “d”(4). This standard tap water sampling shall begin no later than the six-month period beginning January 1 of the calendar year following the lead AL exceedance or WQP excursion. Systems may resume reduced monitoring for lead and copper at the tap and for WQPs within the distribution system under the following conditions:

- A system may resume annual lead and copper monitoring at the tap at the reduced number of sites specified in 41.4(1) “c”(3) after completing two subsequent six-month rounds

of monitoring meeting the criteria of 41.4(1) “c”(4)“5” and upon written department approval. This sampling shall begin during the calendar year immediately following the end of the second consecutive six-month monitoring period.

- A system may resume triennial lead and copper monitoring at the tap at the reduced number of sites after demonstrating, through subsequent rounds of monitoring, that it meets the criteria of either 41.4(1) “c”(4)“6” or “10” and upon written department approval.

- A system may reduce the number of WQP tap water samples required in 41.4(1) “d”(5)“1” and the sampling frequency required in 41.4(1) “d”(5)“2.” Such a system may not resume triennial monitoring for WQPs at the tap until it demonstrates that it has requalified for triennial monitoring, pursuant to 41.4(1) “d”(5)“2.”

13. Any PWS subject to a reduced monitoring frequency under 41.4(1) “c”(4)“4” through “12” must notify the department of any upcoming long-term change in treatment or addition of a new source in accordance with 567—subparagraph 40.8(2) “a”(3). The department must review and approve the addition of a new source or long-term change in water treatment before it is implemented. The department may require a system to resume sampling pursuant to 41.4(1) “c”(4)“3” and collect the number of samples specified for standard monitoring under 41.4(1) “c”(3), or take other appropriate steps such as increased WQP monitoring or reevaluation of CCT.

(5) Additional monitoring. The results of any monitoring conducted in addition to the minimum requirements of this paragraph shall be considered by a system and the department in making any determinations under this subrule.

(6) Invalidity of lead or copper tap water samples. A sample invalidated under this paragraph does not count toward determining the lead or copper 90th percentile levels under 41.4(1) “b”(3) or toward meeting the minimum monitoring requirements of 41.4(1) “c”(3).

1. The department may invalidate a lead or copper tap water sample if one or more of the following conditions are met:

- The laboratory establishes that improper sample analysis caused erroneous results;
- The department determines the sample was taken from a site that did not meet the site selection criteria of 567—41.4(455B);
- The sample container was damaged in transit to the laboratory;
- There is a substantial reason to believe that the sample was subject to tampering;
- The sample is not representative of water that would be consumed from the tap; or
- The department determined that a major disruption of the water flow occurred in the system or building plumbing prior to sample collection, which resulted in lead or copper levels that were not representative of the system.

2. A system must report the results of all samples to the department and all supporting documentation for samples it believes should be invalidated.

3. A sample invalidation decision under 41.4(1) “c”(6)“1” must be documented in writing and include the reason(s) for invalidation. The department may not invalidate a sample solely on the grounds that a follow-up sample result is higher or lower than that of the original sample.

4. Systems must collect replacement samples for any samples invalidated under this subparagraph if, after the sample invalidation(s), a system has too few samples to meet the minimum requirements of 41.4(1) “c”(3). Replacement samples must be taken as soon as possible, but no later than 20 days after the invalidation date, or by the end of the applicable monitoring period, whichever occurs later. Replacement samples taken after the end of the applicable monitoring period shall not also be used to meet the monitoring requirements of a subsequent monitoring period. Replacement samples shall be taken at the same locations as

the invalidated samples or, if that is not possible, at locations other than those already used for sampling during the monitoring period.

(7) Monitoring waivers for small systems. Any small system meeting the criteria of this subparagraph may apply to the department to reduce the lead and copper monitoring frequency under this subrule to once every nine years if it meets all of the materials criteria and monitoring criteria specified in this subparagraph.

1. Materials criteria. A system must demonstrate that its distribution system, service lines, and all plumbing, including plumbing conveying drinking water within all residences and buildings connected to the system, are free of lead-containing materials and copper-containing materials, as defined below:

- Lead. A PWS must provide certification and supporting documentation to the department that it is free of all lead-containing materials. The system must not contain any plastic pipes that contain lead plasticizers or plastic service lines that contain lead plasticizers. The system must be free of LSLs, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures unless such fittings and fixtures meet the specifications of any standard established pursuant to 42 U.S.C. 300-g-6(e).

- Copper. A PWS must provide certification and supporting documentation to the department that the system contains no copper pipes or copper service lines.

2. Monitoring criteria. A system must have completed at least one six-month round of standard tap water monitoring for lead and copper at approved sites and from the number of sites required by 41.4(1) “c”(3) and demonstrate that the 90th percentile levels do not exceed 0.005 mg/L for lead and 0.65 mg/L for copper for any and all rounds of monitoring conducted since the system became free of all lead- and copper-containing materials.

3. Waiver determination. The department shall notify a system of its waiver determination in writing, including the basis of its decision and any condition of the waiver. The department

may require as a waiver condition that a system conduct specific activities, such as limited monitoring or periodic customer outreach to remind them to avoid installation of materials that would void the waiver. A system must continue monitoring for lead and copper at the tap as required by 41.4(1)“c”(4)“1” through “4,” as appropriate, until it receives written department approval for a waiver.

4. Monitoring frequency for systems with waivers.

- A system with a waiver must conduct tap water monitoring for lead and copper in accordance with 41.4(1)“c”(4)“4” at the reduced number of sampling sites identified in 41.4(1)“c”(3) at least once every nine years and provide the materials certification specified in 41.4(1)“c”(7)“1” for both lead and copper to the department along with the monitoring results. Samples collected every nine years shall be collected no later than every ninth calendar year.

- A system with a waiver must notify the department of any upcoming long-term change in treatment or addition of a new source, pursuant to 567—subparagraph 40.8(2)“a”(3). The department must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the system. The department has the authority to add or modify waiver conditions if it deems such modifications are necessary.

- If a system with a waiver becomes aware that it is no longer free of lead-containing or copper-containing materials, it shall notify the department in writing no later than 60 days after becoming aware of such a change.

5. Continued waiver eligibility. If a system continues to satisfy the requirements of 41.4(1)“c”(7)“4,” the waiver will be renewed automatically unless either of the conditions below occur. A system whose waiver has been revoked may reapply for a waiver at such time as it again meets the appropriate materials and monitoring criteria in “1” and “2” of this subparagraph.

- A system no longer satisfies the materials criteria of 41.4(1)“c”(7)“1” or has a 90th percentile lead level greater than 0.005 mg/L or a 90th percentile copper level greater than 0.65 mg/L.

- The department notifies the system in writing that the waiver has been revoked, including the basis of its decision.

6. Requirements following waiver revocation. A system whose waiver has been revoked by the department is subject to the following CCT and lead and copper tap water monitoring requirements:

- If a system exceeds the lead or copper AL, it must implement CCT in accordance with the deadlines specified in 567—paragraph 43.7(1)“e” and any other applicable parts of 567—41.4(455B).

- If a system meets both the lead and copper ALs, it must monitor for lead and copper at the tap no less frequently than once every three years using the reduced number of sample sites specified in 41.4(1)“c”(3).

d. Water quality parameter (WQP) monitoring requirements. All large PWSs (and all small and medium-size PWSs that exceed the lead or copper AL) shall monitor WQPs in addition to lead and copper in accordance with this subrule. The requirements of this subrule are summarized in the table at the end of 41.4(1)“d”(6). The WQPs must be reported in accordance with the monthly operation report (MOR) requirements in 567—subrule 40.8(3).

(1) General.

1. Sample collection methods. Tap samples shall be representative of water quality throughout the distribution system and account for the number of persons served, the different sources of water, the different treatment methods employed by the system, and seasonal variability. Tap sampling under this subrule is not required to be conducted at taps targeted for lead and copper sampling under 41.4(1)“c”(1)“1.” Systems may conduct tap sampling for

WQPs at sites used for coliform sampling. Samples collected at the SEP(s) shall be from locations representative of each source after treatment. If a system draws water from more than one source and the sources are combined before distribution, it must sample at an SEP during periods of normal operating conditions.

2. Number of samples.

- Systems shall collect two tap samples for applicable WQPs during each monitoring period specified in 41.4(1) “d”(2) through 41.4(1) “d”(5) from the following number of sites.

Required Number of Samples: WQPs

System Size (Number of People Served)	Number of Sites for WQPs
greater than 100,000	25
10,001 to 100,000	10
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
less than or equal to 100	1

- Except as provided in 41.4(1) “d”(3) “3,” systems shall collect two samples for each applicable WQP at each SEP during each six-month monitoring period specified in 41.4(1) “d”(2). During each monitoring period specified in 41.4(1) “d”(3) through 41.4(1) “d”(5), systems shall collect one sample for each applicable WQP at each SEP.

(2) Initial sampling.

1. During each six-month monitoring period specified in 41.4(1) “c”(4) “1”:

- Large PWS shall measure the applicable WQP specified below at taps and at each SEP.
- Small and medium-size systems shall measure the applicable WQPs at taps and at each SEP, during which the system exceeds the lead or copper AL.

2. Tap water and SEP monitoring shall include: pH; alkalinity; orthophosphate, when an inhibitor containing a phosphate compound is used; silica, when an inhibitor containing a silicate compound is used; calcium; conductivity; and water temperature.

(3) Monitoring after installation of corrosion control. Large systems that install OCCT pursuant to 567—subparagraph 43.7(1) “d”(4) shall measure the WQPs at the locations and frequencies specified below during each six-month monitoring period specified in 41.4(1) “c”(4) “2.” Small or medium-size systems that install OCCT shall conduct such monitoring during each six-month monitoring period specified in 41.4(1) “c”(4) “2” in which the system exceeds the lead or copper AL.

1. Tap water monitoring shall include two samples for: pH; alkalinity; orthophosphate, when an inhibitor containing a phosphate compound is used; silica, when an inhibitor containing a silicate compound is used; and calcium, when calcium carbonate stabilization is used as part of corrosion control.

2. Except as provided in 41.4(1) “d”(3) “3,” monitoring at each SEP shall include one sample every two weeks (biweekly) for: pH; a reading of the dosage rate of the chemical used to adjust alkalinity, and the alkalinity concentration when alkalinity is adjusted as part of OCC; and a reading of the dosage rate of the inhibitor used, and the concentration of orthophosphate or silica (whichever is applicable) when a corrosion inhibitor is used as part of OCC.

3. Any GW system can limit SEP sampling to those entry points that are representative of water quality and treatment conditions throughout the system. If water from untreated GW sources mixes with water from treated GW sources, a system must monitor for WQPs both at representative SEPs receiving treatment and representative SEPs receiving no treatment. Prior to the start of any monitoring under this paragraph, the system shall provide the department with written information identifying the selected SEPs and documentation sufficient to demonstrate that the sites are representative of water quality and treatment conditions throughout the system, including information on seasonal variability.

(4) Monitoring after the department specifies WQPs for OCC. After the department specifies the values for applicable WQP reflecting OCCT under 567—paragraph 43.7(2) “f,” all large systems shall measure the applicable WQPs according to 41.4(1) “d”(3) and determine compliance with 567—paragraph 43.7(2) “g” every six months, with the first six-month period to begin on either January 1 or July 1, whichever comes first. Any small or medium-size system shall conduct such monitoring during each monitoring period specified in 41.4(1) “c”(4) “3” in which the system exceeds the lead or copper AL. For any such small and medium-size system subject to a reduced monitoring frequency pursuant to 41.4(1) “c”(4) “4” through “12” at the time of the AL exceedance, the start of the applicable six-month monitoring period under this paragraph shall coincide with the end of the applicable monitoring period under 41.4(1) “c”(4) “4” through “12.” Compliance with department-designated optimal WQP values shall be determined as specified in 567—paragraph 43.7(2) “g.”

(5) Reduced monitoring.

1. PWSs that maintain the range of values for the WQP reflecting OCCT during each of two consecutive six-month monitoring periods under 41.4(1) “c”(4) shall continue monitoring at the SEP(s) as specified in 567—paragraph 43.7(2) “f.” Such systems may collect two tap samples for applicable WQPs from the following reduced number of sites during each six-month monitoring period.

Reduced WQP Monitoring

System Size (Number of People Served)	Reduced Number of Sites for WQP
greater than 100,000	10
10,001 to 100,000	7
3,301 to 10,000	3
501 to 3,300	2
101 to 500	1
less than or equal to 100	1

2. A PWS that maintains the range of values for the WQPs reflecting OCCT specified in 567—paragraph 43.7(2) “f” during three consecutive years of monitoring may reduce the sample collection frequency for the number of tap samples for the applicable WQPs specified in 41.4(1) “d”(5) from every six months to annually. This sampling shall begin during the calendar year immediately following the end of the monitoring period in which the third consecutive year of six-month monitoring occurs. Any system that maintains the range of values for the WQP reflecting OCCT specified in 567—paragraph 43.7(2) “f” during three consecutive years of annual monitoring may reduce the sample collection frequency for number of tap samples for applicable WQPs specified in 41.4(1) “d”(5) from annually to every three years. This sampling shall begin no later than the third calendar year following the end of the monitoring period in which the third consecutive year of monitoring occurs.

A system may reduce the sample collection frequency for tap samples for applicable WQPs specified in 41.4(1) “d”(5) “1” to every three years if it demonstrates during two consecutive monitoring periods that its tap water lead level at the 90th percentile is less than or equal to 0.005 mg/L, that its tap water copper level at the 90th percentile is less than or equal to 0.65 mg/L, and that it has maintained the range of values for the WQPs reflecting OCCT specified in 567—paragraph 43.7(2) “f.” Monitoring conducted every three years shall be done no later than every third calendar year.

3. A PWS that conducts sampling annually shall collect these samples evenly throughout the year so as to reflect seasonal variability.

4. Any PWS subject to the reduced monitoring frequency that fails to operate at or above the minimum value or within the range of values for the WQPs specified in 567—paragraph 43.7(2) “f” for more than nine days in any six-month period specified in 567—paragraph 43.7(2) “g” shall resume distribution system tap sampling in accordance with 41.4(1) “d”(3). Such a system may resume annual monitoring for WQPs at the tap at the reduced number of

sites specified in 41.4(1) “d”(5)“1” after it has completed two subsequent consecutive six-month rounds of monitoring that meet the criteria of that paragraph or may resume triennial monitoring for WQPs at the tap at the reduced number of sites after it demonstrates through subsequent rounds of monitoring that it meets the criteria in 41.4(1) “d”(5)“2.”

(6) Additional monitoring. The results of any monitoring conducted in addition to the minimum requirements of this subrule shall be considered in making any determinations under this subrule or 567—subrule 43.7(2).

Summary of Monitoring Requirements for WQPs¹

Monitoring Period	Location	WQPs ²	Frequency
Initial Monitoring	Taps and SEP(s)	pH, alkalinity, orthophosphate or silica ³ , calcium, conductivity, temperature	Every 6 months
After Installation of Corrosion Control	Taps	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴	Every 6 months
	SEP(s) ⁶	pH, alkalinity, if alkalinity is adjusted as part of corrosion control then include the chemical additive dosage rate and concentration, inhibitor dosage rate and inhibitor residual ⁵	At least every 2 weeks
After Department Specifies WQP Values for OCC	Taps	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴	Every 6 months
	SEP(s) ⁶	pH, alkalinity, if alkalinity is adjusted as part of corrosion control then include the chemical additive dosage rate and concentration, inhibitor dosage rate and inhibitor residual ⁵	At least every 2 weeks
Reduced Monitoring	Taps	pH, alkalinity, orthophosphate or silica ³ , calcium ⁴	Every 6 months, annually ⁷ , or every 3 years ⁸ , at a reduced number of sites
	SEP(s) ⁶	pH, alkalinity, if alkalinity is adjusted as part of corrosion control then include the chemical additive dosage rate and concentration, inhibitor dosage rate and inhibitor residual ⁵	At least every 2 weeks

¹Table is for illustrative purposes; consult the text of this subrule for precise regulatory requirements.

²Small and medium-size systems must monitor for WQPs only during monitoring periods in which the system exceeds the lead or copper AL.

³Orthophosphate must be measured only when an inhibitor containing a phosphate compound is used. Silica must be measured only when an inhibitor containing a silicate compound is used.

⁴Calcium must be measured only when calcium carbonate stabilization is used as part of corrosion control.

⁵Inhibitor dosage rates and inhibitor residual concentrations (orthophosphate or silica) must be measured only when an inhibitor is used.

⁶GW systems may limit monitoring to representative locations throughout the systems.

⁷Systems may reduce monitoring frequency for WQPs at the tap from every six months to annually if they have maintained the range of values for WQPs reflecting OCC during three consecutive years of monitoring.

⁸Systems may further reduce the monitoring frequency for WQPs at the tap from annually to once every three years if they have maintained the range of values for WQPs reflecting OCC during three consecutive years of annual monitoring. Systems may accelerate to triennial monitoring for WQPs at the tap if they have maintained 90th percentile lead levels less than or equal to 0.005 mg/L, 90th percentile copper levels less than or equal to 0.65mg/L, and the range of WQPs designated by the department under ~~567—paragraph 43.7(2)~~“f” as representing OCC during two consecutive six-month monitoring periods.

e. Lead and copper source water monitoring requirements.

(1) Sample location, collection methods, and number of samples.

1. A PWS that fails to meet the lead or copper AL on the basis of tap samples collected in accordance with 41.4(1) “c” shall collect lead and copper source water samples in accordance with the following requirements:

- GW systems shall take a minimum of one sample at every entry point to the distribution system (hereafter called source/entry point or SEP) representative of each well after treatment. The system shall take one sample at the same SEP unless conditions make another sampling location more representative of each source or treatment plant.

- SW systems and any system with a combination of SW and GW shall take a minimum of one sample at SEP after any application of treatment or in the distribution system at a point representative of each source after treatment. The system shall take each sample at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

- If a system draws water from more than one source and the sources are combined before distribution, the system must sample at an SEP during periods of normal operating conditions, when water is representative of all sources being used.

2. Where the results of sampling indicate an exceedance of maximum permissible source water levels established under ~~567—subparagraph 43.7(3)~~“b”(4), the department may require that one additional sample be collected as soon as possible after the initial sample was taken (but not to exceed two weeks) at the same sampling point. If a confirmation sample is taken

for lead or copper, then the results of the initial and confirmation samples shall be averaged in determining compliance with the maximum permissible levels. Lead and copper analytical results below the detection limit shall be considered to be zero. Analytical results above the detection limit but below the practical quantification level (PQL) shall either be considered as the measured value or be considered one-half the PQL.

(2) Monitoring after system exceeds tap water AL. Any system that exceeds the lead or copper AL at the tap shall collect one source water sample from each SEP no later than six months after the end of the monitoring period during which the lead or copper AL was exceeded. For monitoring periods that are annual or less frequent, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs or, if the department has established an alternate monitoring period, the last day of that period.

(3) Monitoring after installation of source water treatment. Any system that installs source water treatment pursuant to 567—subparagraph 43.7(3) “a”(3) shall collect an additional source water sample from each SEP during two consecutive six-month monitoring periods by the deadline specified.

(4) Monitoring frequency after the department specifies maximum permissible source water levels or determines that source water treatment is not needed.

1. A PWS shall monitor at the frequency specified below in cases where the department specifies maximum permissible source water levels under 567—subparagraph 43.7(3) “b”(4) or determines that the system is not required to install source water treatment under 567—subparagraph 43.7(3) “b”(2). A PWS using only GW shall collect samples once during the three-year compliance period in effect when the department makes this determination. Such systems shall collect samples once during each subsequent compliance period. Triennial samples shall be collected every third calendar year. A PWS using SW (or a combination of SW and GW) shall collect samples once during each year, the first annual monitoring period

to begin during the year in which the department determination is made under this subparagraph.

2. A PWS using only GW is not required to conduct lead or copper source water sampling if it meets the AL for the specific contaminant in tap water samples during the entire source water sampling.

(5) Reduced monitoring frequency.

1. A system using only GW may reduce the lead and copper monitoring frequency in source water to once during each nine-year compliance cycle provided that the samples are collected no later than every ninth calendar year and the system meets one of the following criteria:

- The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead or copper concentrations specified in 567—subparagraph 43.7(3) “b”(4) during at least three consecutive compliance periods under 41.4(1) “e”(4) “1”; or

- The department has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive compliance periods in which sampling was conducted under 41.4(1) “e”(4) “1,” the concentrations in the source water were less than or equal to 0.005 mg/L for lead and less than or equal to 0.65 mg/L for copper.

2. A PWS using SW (or a combination of SW and GW) may reduce the monitoring frequency in 41.4(1) “e”(4) “1” to once during each nine-year compliance cycle provided that the samples are collected no later than every ninth calendar year and the system meets one of the following criteria:

- The system demonstrates that finished drinking water entering the distribution system has been maintained below the maximum permissible lead and copper concentrations specified in 567—subparagraph 43.7(3) “b”(4) for at least three consecutive years; or

- The department has determined that source water treatment is not needed and the system demonstrates that, during at least three consecutive years, the concentrations in source water were less than or equal to 0.005 mg/L for lead and less than or equal to 0.65 mg/L for copper.

3. A PWS that uses a new source of water is not eligible for reduced monitoring for lead or copper until concentrations in samples collected from the new source during three consecutive monitoring periods are below the maximum permissible lead and copper concentrations specified.

f. Corrosivity monitoring protocol—special monitoring for corrosivity characteristics. Suppliers of water for CWSs shall collect samples from a representative SEP to determine the corrosivity characteristics of the water. This determination shall only include one round of sampling, except in cases where the department concludes additional monitoring is necessary due to variability of the raw water sources. Sampling requirements and approved analytical methods are as follows:

(1) SW systems. Systems utilizing a SW source either in whole or in part shall collect two samples per plant to determine the corrosivity characteristics. One of these samples shall be collected during the midwinter months and the other during midsummer.

(2) GW systems. Systems utilizing GW sources shall collect one sample per plant or source, except systems with multiple plants that do not alter the corrosivity characteristics identified in 41.4(1) “f”(3) or systems served by multiple wells drawing raw water from a single aquifer may, with departmental approval, be considered one treatment plant or source when determining the required number of samples.

(3) Corrosivity characteristics analytical parameters. Determination of corrosivity characteristics of water shall include measurements of pH, calcium hardness, alkalinity, temperature, total dissolved solids (TDS or total filterable residue), and calculation of the

Langelier Index. In addition, sulfate and chloride monitoring may be required by the department. At the department's discretion, the Aggressiveness Index test may be substituted for the Langelier Index test.

(4) Corrosivity indices methodology. The following methods must be used to calculate the corrosivity indices:

1. Aggressiveness Index—"ANSI/AWWA C401-93: AWWA Standard for the Selection of Asbestos Cement Pressure Pipe, 4"–16" for Water Distribution Systems."
2. Langelier Index—SM 14th edition, Method 203, pp. 61-63.

(5) Distribution system construction materials. CWS and NTNCs shall identify whether the any of following construction materials are present in their distribution system and report to the department:

1. Lead from piping, solder, caulking, interior lining of distribution mains, alloys, and home plumbing.
2. Copper from piping and alloys, service lines, and home plumbing.
3. Galvanized piping, service lines, and home plumbing.
4. Ferrous piping materials such as cast iron and steel.
5. Asbestos cement pipe.
6. Vinyl lined asbestos cement pipe.
7. Coal tar lined pipes and tanks.
8. Pipe with asbestos cement lining.

g. Lead, copper, and WQP analytical methods.

(1) Analytical methods. Analyses for alkalinity, calcium, conductivity, orthophosphate, pH, silica, and temperature may be performed by a Grade I, II, III, or IV certified operator meeting the requirements of 567—Chapter 81, any person under the supervision of such an operator, or a laboratory certified in accordance with 567—Chapter 83. Lead and copper

analyses under this subrule shall only be conducted by certified laboratories, pursuant to 567—Chapter 83. The following methods must be used:

Lead, Copper, and WQP Analytical Methods

Contaminant	Methodology ⁹	Reference (Method Number)				
		EPA	ASTM ³	SM	SM Online ¹⁶	USGS ⁵ or Other
Alkalinity	Titrimetric		D1067-92B, 02B, 06B, 11B	2320 B ^{11, 15, 18}	2320 B-97	
	Electrometric titration					I-1030-85
Calcium	EDTA titrimetric		D511-93A, 03A, 09A, 14A	3500-Ca D ⁴ 3500-Ca B ^{12, 15, 18}	3500-Ca B-97	
	Atomic absorption; direct aspiration		D511-93B, 03B, 09B, 14B	3111 B ^{4, 15, 18}	3111 B-99	
	ICP	200.7 ²		3120 B ^{11, 15, 18}	3120 B-99	
	Ion chromatography		D6919-03, 09			
	AVICP-AES	200.5, Rev. 4.2 ¹⁷				
Chloride	Ion chromatography	300.0 ⁸ , 300.1 ¹³	D4327-97, 03	4110 B ^{11, 15}	4550 B-00	
	Potentiometric titration			4500-Cl ⁻ D ^{11, 15}	4500-Cl ⁻ D-97	
	Argentometric titration		D512-89B (reapproved 1999), D512-04B	4500-Cl ⁻ B ^{11, 15}	4500-Cl ⁻ B-97	
	Capillary ion electrophoresis					D6508, Rev. 2 ¹⁴
Conductivity	Conductance		D1125-95A (reapproved 1999), 14A	2510 B ^{11, 15, 18}	2510 B-97	
Copper ⁶	Atomic absorption; furnace technique		D1688-95C, 02C, 07C, 12C	3113 B ^{4, 15, 18}	3113 B-99, 04, 10	
	Atomic absorption; direct aspiration		D1688-95A, 02A, 07A, 12A	3111 B ^{4, 15, 18}	3111 B-99	
	ICP	200.7 ²		3120 B ^{11, 15, 18}	3120 B-99	
	ICP-MS	200.8 ²				
	AVICP-AES	200.5, Rev. 4.2 ¹⁷				
	Atomic absorption; platform furnace	200.9 ²				
	Colorimetric					Hach Method 8026 ¹⁹ , Hach Method 10272 ²⁰
Lead ⁶	Atomic absorption; furnace technique		D3559-96D, 03D, 08D	3113 B ^{4, 15, 18}	3113 B-99, 04, 10	
	ICP-MS	200.8 ²				
	AVICP-AES	200.5, Rev. 4.2 ¹⁷				
	Atomic absorption; platform furnace technique	200.9 ²				
	Differential pulse anodic stripping voltammetry					Method 1001 ¹⁰
pH	Electrometric	150.1 ¹ , 150.2 ¹	D1293-95, 99, 12	4500-H ⁺ B ^{11, 15, 18}	4500-H ⁺ B-00	
Orthophosphate (Unfiltered, no digestion or hydrolysis)	Colorimetric, automated, ascorbic acid	365.1 ⁸		4500-P F ^{11, 15, 18}	4500-P F-99	Thermo Fisher Discrete Analyzer ²¹
	Colorimetric, ascorbic acid, single reagent		D515-88A	4500-P E ^{11, 15, 18}	4500-P E-99	
	Colorimetric, phosphomolybdate;					I-1602-85
	Automated-segmented flow					I-2601-90 ⁸

	Automated discrete					I-2598-85
	Ion chromatography	300.0 ⁷ , 300.1 ¹³	D4327-97, 03, 11	4110 B ^{11, 15, 18}	4110 B-00	
	Capillary ion electrophoresis					D6508, Rev. 2 ¹⁴
Silica	Colorimetric, molybdate blue					I-1700-85
	Automated-segmented flow					I-2700-85
	Colorimetric		D859-95, 00, 05, 10			
	Molybdosilicate			4500-Si D ⁴ 4500-SiO ₂ C ^{12, 15, 18}	4500-SiO ₂ C-97	
	Heteropoly blue			4500-Si E ¹⁵ 4500-SiO ₂ D ^{12, 15, 18}	4500-SiO ₂ D-97	
	Automated method for molybdate-reactive silica			4500-Si F 4500-SiO ₂ E ^{12, 15, 18}	4500-SiO ₂ E-97	
	ICP ⁶	200.7 ²		3120 B ^{11, 15, 18}	3120 B-99	
	AVICP-AES	200.5, Rev. 4.2 ¹⁷				
Sulfate	Ion chromatography	300.0 ⁷ , 300.1 ¹³	D4327-97, 03	4110 ^{11, 15, 18}	4110 B-00	
	Automated methylthymol blue	375.2 ⁷		4500-SO ₄ F ^{11, 15}	4500-SO ₄ ⁻² F-97	
	Gravimetric			4500-SO ₄ C ^{11, 15} 4500-SO ₄ D ^{11, 15}	4500-SO ₄ ⁻² C-97 4500-SO ₄ ⁻² D-97	
	Turbidimetric		D516-90, 02, 07	4500-SO ₄ E ^{11, 15}	4500-SO ₄ ⁻² E-97	
	Capillary ion electrophoresis					D6508, Rev. 2 ¹⁴
Temperature	Thermometric			2550 B ^{11, 15, 18}	2550-00, 10	
Total Filterable Residue (TDS)	Gravimetric			2540 C ^{11, 15}	2540 C-97	

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from the sources listed below. Information regarding the documents can be obtained from the Safe Drinking Water Hotline at 800.426.4791. Documents may be inspected at EPA's Drinking Water Docket or at the Office of Federal Register.

¹⁴"Methods for Chemical Analysis of Water and Wastes," EPA-600/4-79-020, March 1983. NTIS as PB84-128677.

²⁴"Methods for the Determination of Metals in Environmental Samples," EPA-600/4-91-010, June 1991. NTIS as PB91-231498.

³ASTM, 1994, 1996, 1999, or 2003, Vols. 11.01 and 11.02; the methods listed are the only versions that may be used. The previous versions of D1688-95A and D1688-95C (copper), D3559-95D (lead), D1293-95 (pH), D1125-91A (conductivity), and D859-94 (silica) are also approved. These previous versions, D1688-90A, C, D3559-90D, D1293-84, D1125-91A and D859-88, respectively, are located in ASTM, 1994.

⁴SM, 18th and 19th editions (1992 and 1995, respectively). Either edition may be used.

⁵Techniques of Water Resources Investigation of the USGS, Book 5, Chapter A-1, 3rd ed., 1989. Information Services, USGS, Federal Center, Box 25286, Denver, CO 80225-0425.

⁶Samples may not be filtered. Samples that contain less than 1 NTU and are properly preserved (concentrated nitric acid to pH < 2) may be analyzed directly (without digestion) for total metals; otherwise, digestion is required. When digestion is required, the total recoverable technique as defined in the method must be used.

⁷“Methods for the Determination of Inorganic Substances in Environmental Samples,” EPA/600/R-93/100, August 1993. NTIS as PB94-120821.

⁸“Methods of Analysis by the USGS National Water Quality Laboratory—Determination of Inorganic and Organic Constituents in Water and Fluvial Sediments, Open File Report 93-125.” Information Services, USGS, Federal Center, Box 25286, Denver, CO 80225-0425.

⁹Because MDLs reported in EPA Methods 200.7 and 200.9 were determined using a 2X preconcentration step during sample digestion, MDLs determined when samples are analyzed by direct analysis (i.e., no sample digestion) will be higher. Preconcentration may be required for direct analysis of lead by Methods 200.9, 3113B, and 3559-90D unless multiple in-furnace depositions are made.

¹⁰Method 1001; Palintest Water Analysis Technologies, www.palintest.com or www.hach.com.

¹¹SM, 18th, 19th, and 20th editions (1992, 1995, and 1998, respectively). Any edition may be used, except that the versions of 3111B and 3113B in the 20th edition may not be used.

¹²SM, 20th edition (1998).

¹³“Methods for the Determination of Organic and Inorganic Compounds in Drinking Water,” Vol. 1, EPA 815-R-00-014, August 2000. NTIS, PB2000-106981.

¹⁴Method D6508, Rev. 2, “Test Method for Determination of Dissolved Inorganic Anions in Aqueous Matrices Using Capillary Ion Electrophoresis and Chromate Electrolyte,” Waters Corp., 34 Maple Street, Milford, MA 01757.

¹⁵SM, 21st edition (2005).

¹⁶SM Online. The year in which each method was approved is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

¹⁷EPA Method 200.5, Revision 4.2: “Determination of Trace Elements in Drinking Water by Axially Viewed Inductively Coupled Plasma-Atomic Emission Spectrometry,” 2003. EPA/600/R-06/115, www.nemi.gov.

¹⁸SM, 22nd edition (2012).

¹⁹Hach Company. “Hach Method 8026 – Spectrophotometric Measurement of Copper in Finished Drinking Water,” December 2015, Revision 1.2, www.hach.com.

²⁰Hach Company. “Hach Method 10272 – Spectrophotometric Measurement of Copper in Finished Drinking Water,” December 2015, Revision 1.2, www.hach.com.

²¹Thermo Fisher. “Thermo Fisher Scientific Drinking Water Orthophosphate Method for Thermo Scientific Gallery Discrete Analyzer,” February 2016. Revision 5. Thermo Fisher Scientific, Ratatie 2 01620 Vantaa, Finland.

(2) Lead and copper analyses under this subrule shall only be conducted by certified laboratories in accordance with 567—Chapter 83.

(3) All lead and copper levels measured between the practical quantitation limit (PQL) and MDL must be either reported as measured or reported as one-half the PQL specified for lead and copper in 567—paragraph 83.6(7) “a”(5)“2.” All levels below the lead and copper MDLs must be reported as zero.

41.4(2) *Lead, copper, and corrosivity regulation by the setting of an MCL.* Reserved.

567—41.5(455B) Organic chemicals.

41.5(1) *MCLs and other requirements for organic chemicals.* MCLs, analytical methods, and monitoring requirements for two classes of organic chemical contaminants apply to CWSs and NTNCs as specified herein. The two referenced organic chemical classes are volatile organic chemicals (VOCs) and synthetic organic chemicals (SOCs). BAT for control of these organic contaminants is referenced in 567—paragraph 43.3(10) “a.”

a. Compliance. Compliance with the VOC and SOC MCL is calculated pursuant to 41.5(1)“b”(2).

b. MCLs and analytical methodology for organic compounds. The VOC and SOC MCLs are listed in the following table. VOC and SOC analyses shall be conducted using the methods in the following table and its footnotes or their equivalent as approved by EPA. For analysis of a compliance sample, a certified laboratory must be able to achieve at least the MDL for the specific VOC or SOC shown in the following table.

(1) Table.

Organic Chemical (VOC and SOC) Contaminants, Codes, MCLs,

Analytical Methods, and Detection Limits

Contaminant	EPA Contaminant Code	MCL (mg/L)	Methodology ¹	Detection Limit (mg/L)
Volatile Organic Chemicals (VOCs):				
Benzene	2990	0.005	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Carbon tetrachloride	2982	0.005	502.2, 524.2, 524.3, 524.4 ⁷ , 551.1	0.0005
Chlorobenzene (mono)	2989	0.1	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,2-Dichlorobenzene (ortho)	2968	0.6	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,4-Dichlorobenzene (para)	2969	0.075	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,2-Dichloroethane	2980	0.005	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,1-Dichloroethylene	2977	0.007	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
cis-1,2-Dichloroethylene	2380	0.07	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
trans-1,2-Dichloroethylene	2979	0.1	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Dichloromethane	2964	0.005	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,2-Dichloropropane	2983	0.005	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Ethylbenzene	2992	0.7	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Styrene	2996	0.1	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Tetrachloroethylene	2987	0.005	502.2, 524.2, 524.3, 524.4 ⁷ , 551.1	0.0005
Toluene	2991	1	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,1,1-Trichloroethane	2981	0.2	502.2, 524.2, 524.3, 524.4 ⁷ , 551.1	0.0005
Trichloroethylene	2984	0.005	502.2, 524.2, 524.3, 524.4 ⁷ , 551.1	0.0005
1,2,4-Trichlorobenzene	2378	0.07	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
1,1,2-Trichloroethane	2985	0.005	502.2, 524.2, 524.3, 524.4 ⁷ , 551.1	0.0005
Vinyl chloride	2976	0.002	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Xylenes (total)	2955	10	502.2, 524.2, 524.3, 524.4 ⁷	0.0005
Synthetic Organic Chemicals (SOCs):				
Alachlor ³	2051	0.002	505, 507, 508.1, 525.2, 525.3, 551.1	0.0002
Aldicarb	2047	0.003	531.1, 6610	0.0005
Aldicarb sulfone	2044	0.002	531.1, 6610	0.0008
Aldicarb sulfoxide	2043	0.004	531.1, 6610	0.0005
Atrazine ³	2050	0.003	505, 507, 508.1, 523, 525.2, 525.3, 536, 551.1, Syngenta AG-625 ⁵	0.0001
Benzo(a)pyrene	2306	0.0002	525.2, 525.3, 550, 550.1	0.00002
Carbofuran	2046	0.04	531.1, 531.2, 6610, 6610B, 6610 B-04 ²	0.0009
Chlordane ³	2959	0.002	505, 508, 508.1, 525.2, 525.3	0.0002
2,4-D ⁶ (as acids, salts, and esters)	2105	0.07	515.1, 515.2, 515.3, 515.4, 555, D5317-93, 98 (Reapproved 2003), 6610B, 6640-B, 6640 B-01, 6640 B-06	0.0001
Dalapon	2031	0.2	515.1, 515.3, 515.4, 552.1, 552.2, 552.3, 557, 6640, 6610B, 6640-B, 6640 B-01, 6640 B-06	0.001
1,2-Dibromo-3-chloropropane (DBCP)	2931	0.0002	504.1, 524.3, 551.1	0.00002
Di(2-ethylhexyl)adipate	2035	0.4	506, 525.2, 525.3	0.0006
Di(2-ethylhexyl)phthalate	2039	0.006	506, 525.2, 525.3	0.0006
Dinoseb ⁶	2041	0.007	515.1, 515.2, 515.3, 515.4, 555, 6610B, 6640-B, 6640 B-01, 6640 B-06	0.0002
Diquat	2032	0.02	549.2	0.0004
Endothall	2033	0.1	548.1	0.009
Endrin ³	2005	0.002	505, 508, 508.1, 525.2, 525.3, 551.1	0.00001
Ethylene dibromide (EDB)	2946	0.00005	504.1, 524.3, 551.1	0.00001
Glyphosate	2034	0.7	547, 6651, 6651B, 6651 B-00, 6640 B-05	0.006
Heptachlor ³	2065	0.0004	505, 508, 508.1, 525.2, 525.3, 551.1	0.00004
Heptachlor epoxide ³	2067	0.0002	505, 508, 508.1, 525.2, 525.3, 551.1	0.00002
Hexachlorobenzene ³	2274	0.001	505, 508, 508.1, 525.2, 525.3, 551.1	0.0001
Hexachlorocyclopentadiene ³	2042	0.05	505, 508, 508.1, 525.2, 525.3, 551.1	0.0001
Lindane (gamma BHC) ³	2010	0.0002	505, 508, 508.1, 525.2, 525.3, 551.1	0.00002
Methoxychlor ³	2015	0.04	505, 508, 508.1, 525.2, 525.3, 551.1	0.0001
Oxamyl	2036	0.2	531.1, 531.2, 6610, 6610B, 6610 B-04 ²	0.002

Pentachlorophenol	2326	0.001	515.1, 515.2, 515.3, 515.4, 525.2, 525.3, 555, D5317-93, 98 (Reapproved 2003), 6610B, 6640-B, 6640 B-01, 6640 B-06	0.00004
Picloram ^{3, 6}	2040	0.5	515.1, 515.2, 515.3, 515.4, 555, D5317-93, 98 (Reapproved 2003), 6610B, 6640-B, 6640 B-01, 6640 B-06	0.0001
PCBs ⁴ (as decachlorobiphenyl) (as Aroclors) ³	2383	0.0005	508A 505, 508, 508.1, 525.2, 525.3	0.0001
Simazine ⁵	2037	0.004	505, 507, 508.1, 523, 525.2, 525.3, 536, 551.1	0.00007
2,3,7,8-TCDD (dioxin)	2063	3x10 ⁻⁸	1613	5x10 ⁻⁹
2,4,5-TP ⁶ (Silvex)	2110	0.05	515.1, 515.2, 515.3, 515.4, 555, D5317-93, 98 (Reapproved 2003), 6610B, 6640-B, 6640 B-01, 6640 B-06	0.0002
Toxaphene ³	2020	0.003	505, 508, 508.1, 525.2, 525.3	0.001

¹Analyses for the contaminants in this table shall be conducted using the following EPA methods or their equivalent as approved by EPA. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be inspected at EPA's Drinking Water Docket or at NARA.

NTIS methods:

Methods for the Determination of Organic Compounds in Drinking Water, EPA-600/4-88-039, December 1988, Revised July 1991 (NTIS PB91-231480): Methods 508A and 515.1.

Methods for the Determination of Organic Compounds in Drinking Water—Supplement I, EPA-600/4-90-020, July 1990 (NTIS PB91-146027): Methods 547, 550, 550.1.

Methods for the Determination of Organic Compounds in Drinking Water—Supplement II, EPA-600/R-92-129, August 1992 (NTIS PB92-207703): Methods 548.1, 552.1, 555.

Methods for the Determination of Organic Compounds in Drinking Water—Supplement III, EPA-600/R-95-131, August 1995 (NTIS PB95-261616): Methods 502.2, 504.1, 505, 506, 507, 508, 508.1, 515.2, 524.2, 525.2, 531.1, 551.1, 552.2.

EPA Method 523, "Determination of Triazine Pesticides and Their Degradates in Drinking Water by Gas Chromatography/Mass Spectrometry (GC/MS)," 2011. EPA-815-R-11-002, www.nepis.epa.gov.

EPA Method 524.3, Version 1.0. "Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry," June 2009. EPA 815-B-09-009, www.nemi.gov.

EPA Method 525.3, "Determination of Semivolatile Organic Chemicals in Drinking Water by Solid Phase Extraction and Capillary Column Gas Chromatograph/Mass Spectrometry (GC/MS)," 2012. EPA/600/R-12-010, www.nepis.epa.gov.

EPA Method 536, "Determination of Triazine Pesticides and Their Degradates in Drinking Water by Liquid Chromatography Electrospray Ionization Tandem Mass Spectrometry (LC/ESI-MS/MS)," 2007. EPA/815-B-07-002, www.nepis.epa.gov.

EPA Method 557, “Determination of Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC-ESI-MS/MS),” September 2009. EPA 815-B-09-012, www.nemi.gov.

Method 1613 “Tetra-through Octa-Chlorinated Dioxins and Furans by Isotope-Dilution HRGC/HRMS,” EPA-821-B-94-005, October 1994 (NTIS PB95-104774).

APHA documents:

SM, supplement to the 18th edition, 1994, 19th edition, 1995, 20th edition, 1998, 21st edition, 2005, or 22nd edition, 2012 (any of these editions may be used), APHA: Method 6610 and (carbofuran and oxamyl only) 6610B and 6610 B-04; Method 6640B (21st and 22nd editions only) and SM online 6640 B-01 for 2,4-D, 2,4,5-TP Silvex, dalapon, dinoseb, pentachlorophenol, and picloram; Method 6651B (21st and 22nd editions only) and SM online 6670-B-00 for glyphosate.

SM, 18th edition, 1992, 19th edition, 1995, or 20th edition, 1998, (any of these editions may be used), APHA: Method 6651.

ASTM, 1999, Vol. 11.02 (or any edition published after 1993), ASTM: D5317-93, 98 (Reapproved 2003).

Methods 515.3 and 549.2, EPA NERL, 26 W. Martin Luther King Drive, Cincinnati, OH 45268.

Method 515.4, “Determination of Chlorinated Acids in Drinking Water by Liquid-Liquid Microextraction, Derivatization and Fast Gas Chromatography with Electron Capture Detection,” Revision 1.0, April 2000, EPA 815/B-00/001 and EPA Method 552.3, “Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-liquid Microextraction, Derivatization, and Gas Chromatography with Electron Capture Detection,” Revision 1.0, July 2003, EPA 815-B-03-002, www.epa.gov/safewater/methods/sourcalt.html.

Method 531.2, “Measurement of n-Methylcarbamoyloximes and n-Methylcarbamates in Water by Direct Aqueous Injection HPLC with Postcolumn Derivatization,” Revision 1.0, September 2001, EPA 815/B-01/002, www.epa.gov/safewater/methods/sourcalt.html.

Syngenta AG-625 Method, “Atrazine in Drinking Water by Immunoassay,” February 2001, Syngenta Crop Protection, Inc., 410 Swing Road, P.O. Box 18300, Greensboro, NC 27419.

Other required analytical test procedures germane to the conduct of these analyses are contained in Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October 1994 (NTIS PB95-104766).

²SM Online. The year that each method was approved is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

³The detectors specified in Method 505, 507, 508, or 508.1 may be substituted for the purpose of achieving lower MDLs with either an electron capture or nitrogen-phosphorus detector, provided all regulatory requirements and quality control criteria are met.

⁴PCBs are qualitatively identified as Aroclors and measured for compliance purposes as decachlorobiphenyl. Users of Method 505 may have more difficulty in achieving the required detection limits than users of Method 508. 508.1, or 525.2.

⁵This method may not be used for atrazine analysis in any system where chlorine dioxide is used in the drinking water treatment. In samples from all other systems, any atrazine result generated by Method AG-625 that is greater than one-half the MCL must be confirmed using another approved atrazine method and should use additional volume of the original sample collected for compliance monitoring. In instances where a result from Method AG-625 triggers such confirmatory testing, the confirmatory result is to be used to determine compliance.

⁶Accurate determination of the chlorinated esters requires hydrolysis of the sample as described in EPA Methods 515.1, 515.2, 515.3, 515.4, and 555, and ASTM Method D5317-93, 98 (Reapproved 2003).

⁷EPA Method 524.4, Version 1.0. "Measurement of Purgeable Organic Compounds in Water by Gas Chromatography/Mass Spectrometry Using Nitrogen Purge Gas," May 2013, EPA 815-R-13-002.

(2) Organic chemical compliance calculations. Compliance with this paragraph shall be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL in this paragraph, the system is in violation of the MCL. If a system fails to collect the required number of samples, compliance will be based on the total number of samples collected. If a sample result is less than the detection limit, zero will be used when calculating the running annual average (RAA). If a system is in violation of an MCL, the water supplier is required to give notice to the department in accordance with 567—subrule 40.8(1) and to provide PN as required by 567—40.5(455B).

1. Monitoring more than once per year for VOC or SOC contaminants. For systems that monitor more than once per year, MCL compliance is determined by an RAA of all samples collected at each sampling point.

2. Monitoring annually or less frequently for VOC contaminants. Systems that monitor annually or less frequently and whose VOC sample result exceeds the MCL must begin quarterly sampling. The system will not be considered in violation of the MCL until it has

completed one year of quarterly sampling. However, if any sample result will cause the RAA to exceed the MCL at any sampling point, a system is immediately out of compliance with the MCL.

3. Monitoring annually or less frequently for SOC contaminants. Systems that monitor annually or less frequently and whose SOC sample result exceeds the regulatory detection limit specified in 41.5(1)“b”(1) must begin quarterly sampling. The system will not be considered in violation of the MCL until it has completed one year of quarterly sampling. However, if any sample result will cause the RAA to exceed the MCL at any sampling point, a system is immediately out of compliance with the MCL.

(3) TTs for acrylamide and epichlorohydrin. Each PWS must certify annually in writing to the department (using third-party or manufacturer’s certification) that when acrylamide and epichlorohydrin are used in drinking water systems, the combination (or product) of dose and monomer level does not exceed the following levels:

Acrylamide = 0.05 percent dosed at 1 ppm (or equivalent)

Epichlorohydrin = 0.01 percent dosed at 20 ppm (or equivalent)

Certifications can rely on information provided by manufacturers or third parties, as approved by the department.

c. VOC and SOC monitoring requirements. Each PWS shall monitor at the time designated within each compliance period. All new systems or systems that use a new source of water must demonstrate compliance with the MCLs within the department-specified time period. The system must also comply with the specified initial sampling frequencies to ensure it can demonstrate MCL compliance. A water source that is determined by the department to be a new SEP is considered to be a new source for the purposes of this paragraph. Routine and increased monitoring shall be conducted in accordance with this in this paragraph.

(1) Routine VOC monitoring requirements. CWSs and NTNCs shall monitor the VOCs listed in 41.5(1)“b”(1) to determine MCL compliance.

(2) VOC monitoring protocol.

1. GW monitoring. GW systems shall take a minimum of one sample at every entry point to the distribution system which is representative of each well after treatment (hereafter called a source/entry point or SEP). Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

2. SW monitoring. SW systems (and combined SW/GW systems) shall take a minimum of one sample at each SEP after treatment. Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source, treatment plant, or within the distribution system.

3. Multiple sources. If a system draws water from more than one source and the sources are combined before distribution, it must sample at an SEP during periods of normal operating conditions. If a representative sample of all water sources cannot be obtained, as determined by the department, separate SEPs with the appropriate monitoring requirements will be assigned by the department.

4. Initial VOC monitoring frequency. Each CWS and NTNC shall take four consecutive quarterly samples for each VOC during each compliance period, beginning in the initial compliance period. If the initial VOC monitoring has been completed by December 31, 1992, and a system did not detect any VOC, then each GW and SW system shall take one sample annually beginning with the initial compliance period.

5. Reduced VOC monitoring for GW systems. After a minimum of three years of annual sampling, the department may allow GW systems with no previous detection of any VOC to take one sample during each compliance period.

6. VOC monitoring waivers. Each CWS and NTNC GW system that does not detect a VOC may apply to the department for a waiver from 41.5(1)“c”(2)“4” and “5” after completing the initial monitoring. A waiver shall be effective for no more than six years (two compliance periods). The department may also issue waivers to small systems for the initial round of monitoring for 1,2,4-trichlorobenzene. Detection is defined as greater than or equal to 0.0005 mg/L.

7. Bases of a VOC monitoring waiver. The department may grant a waiver if it finds that there is no knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or the system’s zone of influence. If previous use of the contaminant is unknown or it has been used previously, the following factors shall be used to determine whether a waiver is granted.

- Previous analytical results.
- The system’s proximity to a potential point or nonpoint source of contamination. Point sources include spills and leaks of chemicals at or near: a water treatment facility or at manufacturing, distribution, or storage facilities, from hazardous and municipal waste landfills, or from other waste handling or treatment facilities.
- The environmental persistence and transport of the contaminants.
- The number of persons served by the PWS and the proximity of a smaller system to a larger system, and
- How well the water source is protected against contamination. GW systems must consider factors such as depth of the well, the type of soil, and wellhead protection. SW systems must consider watershed protection.

8. VOC waivers for GW systems. As a condition of the monitoring waiver, a GW system must take one sample at each sampling point during the time the waiver is effective and update its vulnerability assessment, considering the factors in 41.5(1)“c”(2)“7.” Based on this

vulnerability assessment, the department must reconfirm that the system is nonvulnerable. If the department does not reconfirm within three years of the initial vulnerability determination, the waiver is invalidated and the system is required to sample annually as specified in 41.5(1) “c”(2)“4.”

9. VOC waivers for SW systems. Each CWS and NTNC that does not detect a VOC may apply to the department for a waiver from 41.5(1) “c”(2)“4” after completing the initial monitoring. Systems meeting this criterion must be determined by the department to be nonvulnerable based on a vulnerability assessment during each compliance period. Each system receiving a waiver shall sample at the department-specified frequency (if any).

10. Increased VOC monitoring—quarterly. If a VOC is detected at a level exceeding 0.0005 mg/L in any sample, the system must monitor quarterly at each sampling point which resulted in a detection. The department may decrease the quarterly monitoring specified in 41.5(1) “c”(2)“4” provided it has determined that the system is reliably and consistently below the MCL. The department shall not make this determination unless a GW system takes a minimum of two quarterly samples and a SW system takes a minimum of four quarterly samples.

11. Increased VOC monitoring—annual. If the department determines that a system is reliably and consistently below the MCL, the system may be allowed to monitor annually. Systems that monitor annually must monitor during the quarter(s) that previously yielded the highest analytical result. Systems that have three consecutive annual samples with no detection of a contaminant may apply for a waiver as specified in 41.5(1) “c”(2)“6.”

12. Increased VOC monitoring—vinyl chloride. GW systems that have detected one or more of the following two-carbon organic compounds: trichloroethylene, tetrachloroethylene, 1,2-dichloroethane, 1,1,1-trichloroethane, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, or 1,1-dichloroethylene shall monitor quarterly for vinyl chloride. A vinyl

chloride sample shall be taken at each sampling point at which one or more of the two-carbon organic compounds was detected. If the results of the first analysis do not detect vinyl chloride, the department may reduce the quarterly vinyl chloride monitoring frequency to one sample during each compliance period. SW systems are required to monitor for vinyl chloride as specified by the department.

13. VOCs reliably and consistently below the MCL. Systems that violate the MCL requirements of 41.5(1) “b”(1) must monitor quarterly. After a minimum of four consecutive quarterly samples that show the system is in compliance, and a department determination that the system is reliably and consistently below the MCL, the system may monitor at the frequency and times specified in 41.5(1) “c”(2) “10,” third unnumbered paragraph (following department approval).

(3) Routine and repeat SOC monitoring requirements. Analysis of the SOC contaminants listed in 41.5(1) “b”(1) to determine MCL compliance shall be conducted as follows:

1. SOC GW monitoring protocols. GW systems shall take a minimum of one sample at every SEP. Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant.

2. SOC SW monitoring protocols. SW systems shall take a minimum of one sample at each SEP after treatment. Each sample must be taken at the same sampling point unless conditions make another sampling point more representative of each source or treatment plant. For purposes of this paragraph, SW systems include systems with a combination of surface and ground sources.

3. Multiple sources. If a system draws water from more than one source and the sources are combined before distribution, it must sample at an SEP during periods of normal operating conditions. If a representative sample of all water sources cannot be obtained, as determined

by the department, separate SEPs with the appropriate monitoring requirements will be assigned by the department.

4. SOC monitoring frequency. CWSs and NTNCs shall take four consecutive quarterly samples for each SOC during each compliance period. Systems serving more than 3,300 persons that do not detect an SOC in the initial compliance period may reduce the sampling frequency to a minimum of two quarterly samples in one year during each repeat compliance period. Systems serving less than or equal to 3,300 persons that do not detect an SOC in the initial compliance period may reduce the sampling frequency to a minimum of one sample during each repeat compliance period.

5. SOC monitoring waivers. Each CWS and NTNC may apply to the department for a waiver from the requirements of 41.5(1) “c”(3)“4.” A system must reapply for a waiver for each compliance period.

6. Bases of an SOC monitoring waiver. The department may grant a waiver if it finds that there is no knowledge of previous use (including transport, storage, or disposal) of the contaminant within the watershed or zone of influence of the system. If previous use of the contaminant is unknown or it has been used previously, the following factors shall be used to determine whether a waiver is granted.

- Previous analytical results.
- The system proximity to a potential point or nonpoint source of contamination. Point sources include spills and leaks of chemicals at or near a water treatment facility or at manufacturing, distribution, or storage facilities, from hazardous and municipal waste landfills, or from other waste handling or treatment facilities. Nonpoint sources include the use of pesticides to control insect and weed pests on agricultural areas, forest lands, homes, and gardens, and other land application uses.
- The environmental persistence and transport of a pesticide or PCBs.

- How well the water source is protected against contamination due to such factors as depth of the well, the type of soil, and the well casing integrity.

- Elevated nitrate levels at the water source, and
- Use of PCBs in equipment used in the production, storage, or distribution of water.

7. Increased SOC monitoring. If an SOC is detected in any sample, then:

- Each system must monitor quarterly at each sampling point which resulted in a detection.

- The department may decrease the quarterly SOC monitoring if the system is reliably and consistently below the MCL. The department shall not make this determination unless a GW system takes a minimum of two quarterly samples and a SW system takes a minimum of four quarterly samples.

- After the department determines the system is reliably and consistently below the MCL, the system may monitor annually. Systems that monitor annually must monitor during the quarter that previously yielded the highest analytical result.

- Systems that have three consecutive annual samples with no detection of a contaminant may apply for a waiver as specified in 41.5(1)“c”(3)“6.”

- If monitoring results in detection of one or more of certain related contaminants (aldicarb, aldicarb sulfone, aldicarb sulfoxide, heptachlor, and heptachlor epoxide), subsequent monitoring shall analyze for all related contaminants.

8. MCL violation and reliably/consistently below the MCL. Systems that violate the requirements of 41.5(1)“b” must monitor quarterly. After a minimum of four quarterly samples show the system is in compliance and the department determines the system is reliably and consistently below the MCL, the system shall monitor at the frequency specified in 41.5(1)“c”(3)“7.”

(4) SOC and VOC confirmation samples. The department may require a confirmation sample for positive or negative results. If a confirmation sample is required, the result must be averaged with the first sampling result and the average must be used for the compliance determination as specified by 41.5(1)“b”(2). The department has discretion to disregard results of obvious sampling errors from this calculation.

(5) Grandfathered VOC and SOC data. The department may allow the use of monitoring data collected after January 1, 1988, for VOCs and January 1, 1990, for SOCs required under SDWA Section 1445 for initial monitoring compliance. If the data are generally consistent with the other requirements in this subparagraph, the department may use such data to satisfy the initial monitoring requirement for the initial compliance period beginning January 1, 1993. Systems that use grandfathered samples for VOCs and did not detect any contaminants listed in 41.5(1)“b”(1) shall begin monitoring annually in accordance with 41.5(1)“c”(2) beginning January 1, 1993.

(6) Increased VOC and SOC monitoring. The department may increase the required monitoring frequency, where necessary, to detect system variations (e.g., fluctuations in concentration due to seasonal use, changes in water source, changes to treatment facilities, or normal operation thereof).

(7) VOC and SOC vulnerability assessment criteria. Vulnerability for each PWS shall be determined by the department based upon an assessment of the following factors.

1. Previous monitoring results. A system will be classified vulnerable if any sample was analyzed to contain one or more VOCs, SOCs, or acrylamide and epichlorohydrin, except for trihalomethanes or other demonstrated DBPs.

2. Proximity of SW supplies to commercial or industrial use, disposal, or storage of VOCs or SOCs. SW supplies that withdraw water directly from reservoirs are considered vulnerable if the drainage basin upgradient and within two miles of the shoreline at the maximum water

level contains major transportation facilities or any of the contaminant sources in this subparagraph. SW supplies that withdraw water directly from flowing water courses are considered vulnerable if the drainage basin upgradient and within two miles of the water intake structure contains major transportation facilities or any of the contaminant sources in this subparagraph. Major transportation facilities include but are not limited to primary highways or railroads.

3. Proximity of wells to commercial or industrial use, disposal, or storage of VOCs or SOC. Wells that are not separated from sources of contamination by at least the following distances will be considered vulnerable.

VOC and SOC Well Separation Distances

Sources of Contamination	Shallow Wells	Deep Wells
Sanitary and industrial point discharges	400 ft	400 ft
Mechanical waste treatment plants	400 ft	200 ft
Lagoons	1,000 ft	400 ft
Chemical and mineral storage (aboveground)	200 ft	100 ft
Chemical and mineral storage including underground storage tanks on or below ground	400 ft	200 ft
Solid waste disposal site	1,000 ft	1,000 ft

4. A system is deemed to be vulnerable for a period of three years after any positive measurement of one or more VOCs or SOC, except for trihalomethanes or other demonstrated DBPs.

(8) PCB analytical methodology. PCBs analysis shall be conducted using the methods in 41.5(1)“b”(1) and as follows:

1. Each system that monitors for PCBs shall analyze each sample using Method 505, 508, 508.1, or 525.2. Users of Method 505 may have more difficulty in achieving the required Aroclor detection limits than users of Method 508, 508.1, or 525.2.

2. If PCBs (as one of seven Aroclors) are detected in any sample analyzed using Method 505 or 508, the system shall reanalyze the sample using Method 508A to quantitate PCBs as decachlorobiphenyl.

PCB Aroclor Detection Limits

Aroclor	Detection Limit (mg/L)
1016	0.00008
1221	0.02
1232	0.0005
1242	0.0003
1248	0.0001
1254	0.0001
1260	0.0002

3. Compliance with the PCB MCL shall be determined based upon the quantitative results of analyses using Method 508A.

41.5(2) *Organic chemicals occurring as (nontrihalomethane) DBPs.* Reserved.

567—41.6(455B) Disinfection byproducts (DBPs) MCLs and monitoring requirements.

41.6(1) *Stage 1 DBP requirements.*

a. Applicability.

(1) This rule establishes criteria under which CWSs and NTNCs that add a chemical disinfectant to the water in any part of the drinking water treatment process or which provide water that contains a chemical disinfectant must modify their practices to meet the MCLs in this rule and the maximum residual disinfectant levels (MRDL) and TT requirements for DBP precursors in 567—43.6(455B).

(2) Compliance dates for this rule are based upon the source water type and the population served. Systems are required to comply with this rule as follows, unless otherwise noted. The department may assign an earlier monitoring period as part of the operation permit, but MCL compliance is not required until the dates stated below.

1. CWSs and NTNCs which use SW or IGW in whole or in part and which serve 10,000 or more persons must comply with this rule beginning January 1, 2002.

2. All other CWSs and NTNCs covered by 41.6(1) “a”(1) must comply with this rule by January 1, 2004.

(3) Consecutive systems that provide water containing a disinfectant or oxidant are required to comply with this rule.

(4) Systems with water sources that are used independently from each other, are not from the same source as determined by the department, or do not go through identical treatment processes are required to monitor for the applicable disinfectants or oxidants and DBP during operation of each source. Systems must comply with this rule during the use of each water source.

b. DBP MCLs.

(1) The MCLs for DBPs are as follows:

DBP	MCL (mg/L)
Bromate	0.010
Chlorite	1.0
Haloacetic acids (HAA5)	0.060
Total trihalomethanes (TTHM)	0.080

(2) Beginning on the date in the following table, a system must comply with the TTHM and HAA5 MCL as a locational RAA at each monitoring location.

System Size (number of people served)	Date system must comply with MCL at each sampling location*
Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system	
System serving at least 100,000 people	April 1, 2012
System serving 50,000-99,999 people	October 1, 2012
System serving 10,000-49,999 people	October 1, 2013
System serving fewer than 10,000 people	October 1, 2013 for all GW systems and for SW/IGW systems that did not collect <i>Cryptosporidium</i> source water samples October 1, 2014 for SW/IGW systems that collected <i>Cryptosporidium</i> source water samples
Other systems that are part of a combined distribution system	
Consecutive or wholesale system	At the same time as the system with the earliest compliance date in the combined distribution system

*The department may grant up to an additional 24 months for compliance with the MCLs and OELs if the system requires capital improvements to comply with an MCL.

c. DBP monitoring requirements.

(1) General.

1. Systems must take all samples during normal operating conditions.
2. Systems may consider multiple wells drawing water from a single aquifer as one treatment plant for determining the minimum number of TTHM and HAA5 samples required, with department approval.

3. Failure to monitor in accordance with the monitoring plan required under 41.6(1)“c”(1)“6” is a monitoring violation.

4. Failure to monitor is a violation for the entire period covered by the annual average where compliance is based on an RAA of monthly or quarterly samples or averages, and the system’s failure to monitor makes it impossible to determine MCL compliance.

5. Systems may use only data collected under the provisions of this rule or 567—43.6(455B) to qualify for reduced monitoring.

6. Each system required to monitor under the provisions of this rule or 567—43.6(455B) must develop and implement a monitoring plan. The system must maintain the plan and make it available for inspection by the department and the general public no later than 30 days following the applicable compliance dates in 41.6(1)“a”(3). All systems using SW or IGW and serving more than 3,300 people must submit a copy of the monitoring plan to the department by the applicable date in 41.6(1)“a”(3)“1.” The department may also require the plan to be submitted by any other system. After review, the department may require changes in any plan elements. The plan must include the following elements:

- Specific locations and schedules for collecting samples for any parameters included in this rule.

- How the system will calculate compliance with MCLs, MRDLs, and TTs.

7. The department may require a monthly monitoring frequency for DBPs, which would be specified in the operation permit.

(2) Bromate. CWSs and NTNCS using ozone for disinfection or oxidation must monitor for bromate.

1. Routine monitoring. Systems must take at least one sample per month for each treatment plant in the system using ozone, collected at each SEP while the ozonation system is operating under normal conditions.

2. Reduced monitoring. A system may reduce monitoring from monthly to quarterly if its RAA bromate concentration is less than or equal to 0.0025 mg/L based on monthly bromate measurements for the most recent four quarters. If a system previously qualified for reduced bromate monitoring and is on quarterly sampling frequency, it may remain on reduced monitoring as long as the RAA of the bromate samples is less than or equal to 0.0025 mg/L. If the RAA of quarterly bromate samples exceeds 0.0025 mg/L, the system must resume routine bromate monitoring. Only three analytical methods may be used for bromate samples under reduced monitoring: EPA Method 317.0 Revision 2.0, Method 326.0, or Method 321.8.

(3) Chlorite. CWS and NTNC using chlorine dioxide, for disinfection or oxidation, must monitor for chlorite. If the system does not use chlorine dioxide on a daily basis, it must conduct the required daily monitoring each day chlorine dioxide is used, and any required monthly monitoring during those months in which chlorine dioxide is used during any portion of the month.

1. Routine daily monitoring. Systems must monitor daily at the SEP. For any daily sample that exceeds the chlorite MCL, the system must take additional samples in the distribution system the following day at the locations required by 41.6(1)“c”(3)“3,” which are in addition to the sample required at the SEP. These daily SEP samples may be analyzed by system personnel, in accordance with 41.6(1)“d.”

2. Routine monthly monitoring. Systems must take a three-sample set each month in the distribution system. The system must take one sample at each of the following locations: near the first customer, at a location representative of average residence time, and at a location reflecting maximum residence time (MRT) in the distribution system. Any additional routine sampling must be conducted in the same manner as the three-sample sets. The system may use the results of additional monitoring conducted in accordance with 41.6(1)“c”(3)“3” to

meet the monitoring requirement in this subparagraph. These monthly samples must be analyzed by a certified laboratory using an approved ion chromatography method, in accordance with 41.6(1) “d.”

3. Additional monitoring. On each day following a routine sample monitoring result that exceeds the chlorite MCL at the SEP the system is required to take three chlorite distribution system samples at the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting MRT in the distribution system). These additional samples must be analyzed by a certified laboratory using an approved ion chromatography method, in accordance with 41.6(1) “d.”

4. Reduced monitoring.

- Daily chlorite monitoring at the SEP required by 41.6(1) “c”(3)“1” may not be reduced.
- The department may allow the monitoring for systems with monthly chlorite monitoring in the distribution system to be reduced to 1 three-sample set per quarter after one year of monitoring where no individual chlorite sample taken in the distribution system under 41.6(1) “c”(3)“2” has exceeded the chlorite MCL and the system has not been required to conduct additional monitoring under 41.6(1) “c”(3)“3.” The system may remain on the reduced monitoring schedule until either any of the three individual chlorite samples taken quarterly in the distribution system under 41.6(1) “c”(3)“2” exceeds the chlorite MCL, or the system is required to conduct additional monitoring under 41.6(1) “c”(3)“3,” at which time it must revert to routine monitoring.

(4) Total trihalomethanes (TTHM) and haloacetic acids (HAA5).

1. Routine monitoring. Systems must monitor at the frequency indicated in the following table. Both the TTHM and HAA5 samples must be collected as paired samples during the same time period in order for each parameter to have the same annual average period for result

comparison. A paired sample is one that is collected at the same location and time and is analyzed for both TTHM and HAA5 parameters.

Routine Monitoring Frequency for TTHM and HAA5

Type of System (source water type and population served)	Minimum Monitoring Frequency	Sample Location in the Distribution System
SW/IGW ³ system serving ≥10,000 persons	4 water samples per quarter per treatment plant	At least 25 percent of all samples collected each quarter at locations representing MRT. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, accounting for number of persons served, different sources of water, and different treatment methods. ¹
SW/IGW ³ system serving 500-9,999 persons	1 water sample per quarter per treatment plant	Locations representing MRT. ¹
SW/IGW ³ system serving <500 persons	1 sample per year per treatment plant during month of warmest water temperature	Locations representing MRT. ¹ If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the MRT in the distribution system, until system meets reduced monitoring criteria in 41.6(1) “c”(4)“2,” second bulleted paragraph.
System using only non-IGW GW using chemical disinfectant and serving ≥10,000 persons	1 water sample per quarter per treatment plant ²	Locations representing MRT. ¹
System using only non-IGW GW using chemical disinfectant and serving <10,000 persons	1 sample per year per treatment plant during month of warmest water temperature	Locations representing MRT. ¹ If the sample (or average of annual samples, if more than one sample is taken) exceeds MCL, system must increase monitoring to one sample per treatment plant per quarter, taken at a point reflecting the MRT time in the distribution system, until system meets reduced monitoring criteria in 41.6(1) “c”(4)“2,” second bulleted paragraph.

¹If a system chooses to sample more frequently than the minimum required, at least 25 percent of all samples collected each quarter (including those taken in excess of the required frequency) must be taken at locations that represent the MRT of the water in the distribution system. The remaining samples must be taken at locations representative of at least average residence time in the distribution system.

²Multiple wells drawing water from a single aquifer may be considered one treatment plant for determining the minimum number of samples required, with department approval.

³SW/IGW indicates those systems that use either SW or IGW, in whole or in part.

2. Reduced monitoring. The department may allow systems a reduced monitoring frequency, except as otherwise provided, in accordance with the following table. Source water total organic carbon (TOC) levels must be determined in accordance with 567—subparagraph 43.6(2) “c”(1).

Reduced Monitoring Frequency for TTHM and HAA5

If you are a ...	And you have monitored at least one year and you have ...	You may reduce monitoring to this level
SW/IGW ¹ system serving ≥10,000 persons with a source water annual average TOC level, before any treatment, of ≤4.0 mg/L.	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L	1 sample per treatment plant per quarter at distribution system location reflecting MRT.
SW/IGW ¹ system serving 500 - 9,999 persons with a source water annual average TOC level, before any treatment, of ≤4.0 mg/L.	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L	1 sample per treatment plant per year at distribution system location reflecting MRT during month of warmest water temperature.
SW/IGW ¹ system serving <500 persons	SW/IGW ¹ systems serving <500 persons may not reduce monitoring to less than 1 sample per treatment plant per year.	
System using only non-IGW GW using chemical disinfectant and serving ≥10,000 persons	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L	1 sample per treatment plant per year at distribution system location reflecting MRT during month of warmest water temperature.
System using only non-IGW GW using chemical disinfectant and serving <10,000 persons	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L for two consecutive years; Or, TTHM annual average ≤0.020 mg/L and HAA5 annual average ≤0.015 mg/L for one year.	1 sample per treatment plant per 3-year monitoring cycle at distribution system location reflecting MRT during month of warmest water temperature, with the 3-year cycle beginning on January 1 following quarter in which system qualifies for reduced monitoring.

¹SW/IGW indicates those systems that use either SW or IGW, in whole or in part.

- Systems on a reduced monitoring schedule may remain on that reduced schedule as long as the average of all samples taken in the year (for systems monitoring quarterly) or the result of the sample (for systems monitoring no more frequently than annually) is less than or equal to 0.060 mg/L for TTHMs and less than or equal to 0.045 mg/L for HAA5. Systems that do not meet these levels must resume monitoring at the frequency identified in 41.6(1)“c”(4)“1” in the quarter immediately following the quarter in which the system exceeds 0.060 mg/L for TTHMs and 0.045 mg/L for HAA5. For systems using only GW not under the direct influence of SW and serving fewer than 10,000 persons, if either the TTHM annual average is >0.080 mg/L or the HAA5 annual average is >0.060 mg/L, the system must go to increased monitoring identified in 41.6(1)“c”(4)“1” in the quarter immediately following the monitoring period in which the system exceeds 0.080 mg/L for TTHMs or 0.060 mg/L for HAA5.

- The department may allow systems on increased monitoring to return to routine monitoring if, after one year of monitoring, TTHM annual average is less than or equal to 0.060 mg/L and HAA5 annual average is less than or equal to 0.045 mg/L.

- The department may return a system to routine monitoring at its discretion.

d. DBP Analytical requirements.

(1) Systems must use only the analytical method(s) specified in this paragraph, or equivalent methods as determined by EPA, to demonstrate compliance with this rule.

(2) Systems must measure DBPs using the methods in the following table, as modified by the footnotes:

Approved Methods for DBP Compliance Monitoring

Contaminant and Methodology	EPA Method ¹	SM ²	ASTM Method ³
TTHM			
P&T/GC/EICD & PID	502.2 ⁴		
P&T/GC/MS	524.2, 524.3, 524.4		
LLE/GC/ECD	551.1		
HAA5			
LLE (diazomethane)/GC/ECD		6251 B ⁵ , 6251 B-07 ¹²	
SPE (acidic methanol)/GC/ECD	552.1 ⁵		
LLE (acidic methanol)/GC/ECD	552.2, 552.3		
IC electrospray ionization tandem MS (IC-ESI-MS/MS)	557 ¹⁰		
Bromate			
IC	300.1		D 6581-00
IC & postcolumn reaction ⁹	317.0 Rev. 2.0 ⁶ , 326.0 ⁶		
IC/ICP-MS ⁹	321.8 ^{6, 7}		
Two-dimensional IC	302.0 ¹¹		
IC electrospray ionization tandem MS (IC-ESI-MS/MS)	557 ¹⁰		
Chemically suppressed IC			D 6581-08 A
Electrolytically suppressed IC			D 6581-08 B
Chlorite⁸			
Amperometric titration		4500-ClO ₂ E ⁸	
Amperometric sensor			ChlordioX Plus ^{8, 13}
Spectrophotometry	327.0 Rev. 1.1 ⁸		
IC	300.0, 300.1, 317.0 Rev. 2, 326.0		
Chemically suppressed IC			D 6581-08 A
Electrolytically suppressed IC			D 6581-08 B

ECD = electron capture detector

EICD = electrolytic conductivity detector

GC = gas chromatography

IC = ion chromatography

LLE = liquid/liquid extraction

MS = mass spectrometer

P&T = purge and trap

PID = photoionization detector

SPE = solid phase extractor

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following

documents was approved by the Director of the Federal Register on February 16, 1999, in accordance with 5 U.S.C. 552(a)

and 1 CFR Part 51. Copies may be obtained from the sources listed below. Information regarding the documents is available

from the Safe Drinking Water Hotline at 800.426.4791. Documents may be inspected at EPA's Drinking Water Docket or at

the Office of Federal Register.

¹EPA: The following methods are available from the NTIS:

Methods 300.0 and 321.8: Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1, August 2000, EPA 815-R-00-014. NTIS, PB2000-106981.

Method 300.1: “Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0,” EPA-600/R-98/118, 1997. NTIS, PB98-169196.

Method 317.0: “Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis, Revision 2.0,” July 2001, EPA 815-B-01-001.

Method 326.0: “Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis, Revision 1.0,” June 2002, EPA 815-R-03-007.

Method 327.0: “Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry, Revision 1.1,” May 2005, EPA 815-R-05-008.

Methods 502.2, 524.2, 551.1, and 552.2: Methods for the Determination of Organic Compounds in Drinking Water—Supplement III, EPA-600/R-95-131, August 1995. NTIS PB95-261616.

Method 524.3: “Measurement of Purgeable Organic Compounds in Water by Capillary Column Gas Chromatography/Mass Spectrometry, Version 1.0,” June 2009. EPA 815-B-09-009, www.nemi.gov.

Method 524.4: “Measurement of Purgeable Organic Compounds in Water by Gas Chromatography/Mass Spectrometry Using Nitrogen Purge Gas, Version 1.0,” May 2013. EPA 815-R-13-002, www.nepis.epa.gov.

Method 552.1: Methods for the Determination of Organic Compounds in Drinking Water—Supplement II, EPA-600/R-92-129, August 1992. NTIS PB92-207703.

Method 552.3: “Determination of Haloacetic Acids and Dalapon in Drinking Water by Liquid-liquid Microextraction, Derivatization, and Gas Chromatography with Electron Capture Detection, Revision 1.0,” July 2003, EPA-815-B-03-002.

²4500-ClO₂ E and 6251B: SM, 19th (1995), 20th (1998), 21st (2005), and 22nd (2012) editions.

³Method D 6581-00: ASTM Volume 11.01, 2001 (or any year containing the cited version).

⁴If TTHMs are the only analytes being measured in the sample, then a PID is not required.

⁵The samples must be extracted within 14 days of sample collection.

⁶IC and postcolumn reaction or IC/ICP-MS must be used for bromate analysis to demonstrate eligibility for reduced monitoring.

⁷Samples must be preserved at sample collection with 50 mg ethylenediamine (EDA)/L of sample and must be analyzed within 28 days.

⁸Amperometric titration or spectrophotometry may be used for routine daily chlorite monitoring at the SEP, as prescribed in 41.6(1) “c”(3)“1.” IC must be used for routine monthly chlorite monitoring and additional chlorite monitoring in the distribution system, as prescribed in 41.6(1) “c”(3)“2” and “3.”

⁹These are the only methods approved for reduced bromate monitoring under 41.6(1) “c”(2)“2.”

¹⁰EPA Method 557, “Determination of Haloacetic Acids, Bromate, and Dalapon in Drinking Water by Ion Chromatography Electrospray Ionization Tandem Mass Spectrometry (IC-ESI-MS/MS),” August 2009. EPA 815-B-09-012, www.nemi.gov.

¹¹EPA Method 302.0, “Determination of Bromate in Drinking Water Using Two-Dimensional Ion Chromatography with Suppressed Conductivity Detection,” September 2009. EPA 815-B-014, www.nemi.gov.

¹²SM Online. The year in which each method was approved is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

¹³ChlordioX Plus. “Chlorine Dioxide and Chlorite in Drinking Water by Amperometry Using Disposable Sensors,” November 2013. Palintest Water Analysis Technologies, www.palintest.com.

(3) DBP analyses under this rule shall only be conducted by laboratories certified in accordance with 567—Chapter 83, except as specified under 41.6(1) “d”(4). The performance evaluation sample acceptance limits and minimum reporting levels are in 40 CFR §141.131(b)(2)(iii).

(4) Daily chlorite samples at the SEP must be measured by a Grade II, III or IV operator meeting the requirements of 567—Chapter 81, any person under the supervision of such an operator, or a laboratory certified in accordance with 567—Chapter 83.

e. DBP compliance requirements.

(1) General.

1. When compliance is based on an RAA of monthly or quarterly samples or averages and the system fails to monitor for TTHM, HAA5, or bromate, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

2. Unless invalidated by the department, all samples taken and analyzed under the provisions of this rule must be included in determining compliance, even if that number is greater than the minimum required.

3. If, during the first year of monitoring under 41.6(1) “c,” any individual quarter’s average will cause the RAA of that system to exceed the MCL, the system is out of compliance at the end of that quarter.

4. Any system that violates the bromate, chlorite, or TTHM and HAA5 MCLs specified in this paragraph must provide PN pursuant to rule 567—40.5(455B) and report to the department pursuant to 567—paragraph 40.8(3) “d.”

(2) Bromate. Compliance must be based on an RAA, computed quarterly, of monthly samples (or, for months in which the system takes more than one sample, the average of all samples taken during the month) collected by the system as prescribed by 41.6(1) “c”(2). If the average of samples covering any consecutive four-quarter period exceeds the MCL, a system is in violation of the MCL. If a PWS fails to complete 12 consecutive months’ monitoring, MCL compliance for the last four-quarter compliance period must be based on an average of the available data.

(3) Chlorite. Compliance must be based on an arithmetic average of each three-sample set taken in the distribution system as prescribed by 41.6(1) “c”(3)“1” and “2.” If the arithmetic average of any three-sample set exceeds the MCL, a system is in violation of the MCL.

(4) TTHM and HAA5.

1. For systems monitoring quarterly, compliance with MCLs in 41.6(1) “b” must be based on an RAA, computed quarterly, of quarterly averages of all samples collected by the system as prescribed by 41.6(1) “c”(4).

2. For systems monitoring less frequently than quarterly, systems demonstrate MCL compliance if the average of samples taken that year under 41.6(1) “c”(4) does not exceed the

MCLs in 41.6(1) “b.” If the average of these samples exceeds the MCL, the system must increase monitoring to once per quarter per treatment plant and is not in violation of the MCL until it has completed one year of quarterly monitoring, unless the result of fewer than four quarters of monitoring will cause the RAA to exceed the MCL, in which case the system is in violation at the end of that quarter. Systems required to increase to quarterly monitoring must calculate compliance by including the sample that triggered the increased monitoring plus the following three quarters of monitoring.

3. If the RAA of quarterly averages covering any consecutive four-quarter period exceeds the MCL

4. If a PWS fails to complete four consecutive quarters of monitoring, MCL compliance for the last four-quarter compliance period must be based on an average of the available data.

f. DBP reporting requirements. Systems required to sample quarterly or more frequently must report to the department within ten days after the end of each quarter in which samples were collected, notwithstanding the PN provisions of rule 567—40.5(455B). Systems required to sample less frequently than quarterly must report to the department within ten days after the end of each monitoring period in which samples were collected. The specific reporting requirements for DBPs are in 567—subparagraph 40.8(3) “d”(2).

41.6(2) *Stage 2 initial distribution system evaluation.* The requirements for the Stage 2 initial distribution system evaluation (IDSE) in 40 CFR 141.600-60,5 as adopted on January 4, 2006, are adopted by reference. This regulation establishes monitoring and requirements for identifying compliance monitoring locations that are used to determine MCL compliance for TTHM and HAA5. All CWS required to comply with 41.6(1) and all NTNC serving at least 10,000 people required to comply with 41.6(1) are required to comply with this subrule. The requirements in this subrule constitute national primary drinking water regulations. Only

the analytical methods specified in 41.6(1) “d” may be used to demonstrate compliance with this subrule.

41.6(3) Stage 2 DBP requirements. The requirements of this subrule constitute national primary drinking water regulations. This subrule establishes monitoring and requirements for achieving MCL compliance based on locational running annual averages (LRAA) for TTHM and HAA5.

a. Applicability. All CWS and NTNC systems that use a primary or residual disinfectant other than UV light or deliver water that has been treated with a primary or residual disinfectant other than UV light must comply with this subrule.

(1) Schedule. Systems must comply with the dates in the appropriate schedule. For the purposes of this subrule, the combined distribution system (CDS) only includes active connections; emergency connections are excluded. Any CWS or NTNC that purchases or sells water on a routine basis through an active connection to another CWS or NTNC is part of a CDS. All systems included in a CDS must adhere to the schedule of the system that serves the largest population in that CDS. The system must comply with the requirements on the schedule for systems that are not a part of a CDS and for systems that serve the largest population in the CDS. The schedule for the other systems that are a part of a CDS, either wholesale or consecutive, is the same schedule as that of the system with the earliest compliance date in the CDS.

Schedule	System Population	Date by Which System Must Begin Stage 2 Compliance Monitoring
1	At least 100,000	April 1, 2012
2	50,000-99,999	October 1, 2012
3	10,000-49,999	October 1, 2013
4	Fewer than 10,000	October 1, 2013, for all GW systems and any SW/IGW systems that did not conduct <i>Cryptosporidium</i> sampling under 567—paragraph 43.11(3) “b”(2)“4” October 1, 2014, for SW/IGW systems that conducted <i>Cryptosporidium</i> sampling under 567—paragraph 43.11(3) “b”(2)“4”

(2) Initiation of compliance monitoring under Stage 2. Systems shall switch from Stage 1 compliance monitoring (41.6(1)) to Stage 2 monitoring as follows:

1. Systems required to monitor quarterly must start monitoring in the first full calendar quarter that includes the compliance date in the preceding table.

2. Systems that conducted IDSE monitoring and have an approved report and that are required to monitor at a frequency less than quarterly must start monitoring in the calendar month recommended in the approved IDSE report.

3. Systems that were not required to prepare an IDSE report under 41.6(2) must update their Stage 1 monitoring plan to meet the Stage 2 requirements and submit it for department approval six months prior to the compliance date in the preceding table.

(3) Timing of initial determination of compliance under Stage 2.

1. Systems required to monitor quarterly must make compliance calculations at the end of the fourth calendar quarter that follows the compliance date or earlier if the LRAA calculated based on fewer than four quarters of data would cause an MCL exceedance regardless of the results of subsequent sampling. Compliance determination must continue at the end of each subsequent quarter.

2. Systems required to monitor at a frequency that is less than quarterly must make compliance calculations beginning with the first compliance sample taken after the compliance date.

(4) Monitoring and compliance.

1. Systems required to monitor quarterly must calculate LRAAs for TTHM and HAA5 using the monitoring results collected under this subrule and determine that each LRAA does not exceed the MCL. If the system does not complete the four consecutive quarters of monitoring, it must calculate MCL compliance based on the average of the available data from the most recent four quarters. If the system collects more than one sample per quarter at a monitoring location, all samples taken in the quarter at that location must be averaged to determine a quarterly average to be used for the LRAA calculation. If a system fails to

monitor, it is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA.

2. Systems required to monitor yearly or triennially must determine that each sample collected is less than the MCL. If any sample exceeds the MCL, the system must comply with 41.6(3)“e.” If no sample exceeds the MCL, the sample result for each monitoring location is considered to be the LRAA for that monitoring location. If a system fails to monitor, it is in violation of the monitoring requirements for each quarter that a monitoring result would be used in calculating an LRAA.

3. The department may grant up to an additional 24 months for compliance with MCLs and operational evaluation levels if the system is required to make capital improvements in order to comply with an MCL.

(5) Any CWS or NTNC that begins using water to which a disinfectant has been added, other than ultraviolet light, after the initial compliance dates for IDSE or Stage 2 compliance monitoring must comply with this subrule.

b. Monitoring plan. All systems must develop and implement a DBP monitoring plan that shall be kept on file at the system for review by the department and the public. The monitoring plan must contain the monitoring locations, monitoring dates, and compliance calculation procedures.

(1) If the system has an approved IDSE-standard monitoring plan (IDSE-SMP), that report contains all of the plan elements and meets this requirement.

(2) If the system does not have an approved IDSE-SMP and does not have sufficient monitoring locations from its initial DBP sampling plan, it must identify additional locations by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified. The

system must provide the rationale for identifying locations as having high levels of TTHM or HAA5.

(3) If the system does not have an approved IDSE-SMP and has more monitoring locations from its initial Stage 1 DBP sampling plan than the number of locations required under the Stage 2 compliance monitoring, it must identify which locations it will use for compliance monitoring by alternating selection of locations representing high TTHM levels and high HAA5 levels until the required number of compliance monitoring locations have been identified.

(4) All plans must be reviewed by the system every three years and updated as system conditions change.

1. A system may revise its monitoring plan to reflect changes in treatment, distribution system operations, and layout (including new service areas), to reflect other factors that may affect TTHM or HAA5 formation, or for department-approved reasons.

2. A system must consult with the department regarding the need for plan changes and the appropriateness of changes. A system must replace existing compliance monitoring locations that have the lowest LRAA with new locations that reflect the current distribution system locations with expected high TTHM or HAA5 levels.

3. The department may require modifications in a system's monitoring plan.

(5) Systems are also required to maintain the disinfectant and MRDL elements of the Stage 1 monitoring plan pursuant to 41.6(1) "c"(1)"6" and 567—paragraph 43.6(1) "c"(1)"5."

(6) All systems are required to have a valid DBP monitoring plan prior to the start of compliance monitoring in 41.6(3) "a"(1).

c. Routine monitoring. Systems are required to start monitoring at the locations specified in the approved DBP monitoring plan and on the schedule specified in 41.6(3) "a"(1). Each

system must monitor the DBPs at the minimum number of locations identified in the table below.

Routine Monitoring for DBPs

Source water type	Population size category	Monitoring frequency	Total number of distribution system monitoring location sites per monitoring period
SW/IGW	<500	per year	2
	500-3,300	per quarter	2
	3,301-9,999	per quarter	2
	10,000-49,999	per quarter	4
	50,000-249,999	per quarter	8
	250,000-999,999	per quarter	12
GW	<500	per year	2
	500-9,999	per year	2
	10,000-99,999	per quarter	4
	100,000-499,999	per quarter	6

(1) All systems must monitor during the month of highest DBP concentrations.

(2) Systems on a quarterly monitoring frequency must collect samples for TTHM and HAA5 every 90 days at each monitoring location, except that SW/IGW systems serving 500 to 3,300 people may collect at one location as provided in 41.6(3)“c”(3). Each sample collected at each location must be analyzed for both TTHM and HAA5 components.

(3) Systems on an annual monitoring frequency and SW/IGW systems serving 500 to 3,300 people are required to collect TTHM and HAA5 samples at the locations with the highest TTHM and HAA5 concentrations, respectively. Each sample must be analyzed for both TTHM and HAA5 components. Sample collection is required from only one location if the highest TTHM concentration and the highest HAA5 concentration occur at the same location.

(4) Analytical methods. Systems must use an approved method in 41.6(1)“d”(2) for TTHM and HAA5 analyses pursuant to this subrule. DBP analyses must be conducted by laboratories certified in accordance with 567—Chapter 83.

d. Reduced monitoring. A system may reduce monitoring to the level specified in the Reduced Monitoring for DBPs table below anytime the LRAA is less than or equal to half the MCL for TTHM and HAA5 at all monitoring locations (i.e., less than or equal to 0.040 mg/L for TTHM and 0.030 mg/L for HAA5). Only data collected under this rule may be used to qualify for reduced monitoring.

Reduced Monitoring for DBPs

Source water type	Population size category	Monitoring frequency ¹	Distribution system monitoring location sites per monitoring period ²
SW/IGW	<500	per year	Monitoring may not be reduced
	500-3,300	per year	1 sample per year at same location if the highest TTHM and HAA5 measurements occurred at the same location and in the same quarter, analyzed for both TTHM and HAA5
	3,301-9,999	per year	2 samples: 1 at location and during quarter with the highest TTHM single measurement; 1 at location and during quarter with the highest HAA5 single measurement
	10,000-49,999	per quarter	2 samples: 1 at highest TTHM LRAA location; 1 at highest HAA5 LRAA location
	50,000-249,999	per quarter	4 samples: 1 sample each at highest two TTHM LRAA locations; 1 sample each at highest two HAA5 LRAA locations
	250,000-999,999	per quarter	6 samples: 1 sample each at highest 3 TTHM LRAA locations; 1 sample each at highest 3 HAA5 LRAA locations
GW	<500	every third year	1 sample at same location if the highest TTHM and HAA5 measurements occurred at the same location and in the same quarter, analyzed for both TTHM and HAA5
	500-9,999	per year	1 sample per year at same location if the highest TTHM and HAA5 measurements occurred at the same location and in the same quarter, analyzed for both TTHM and HAA5
	10,000-99,999	per year	2 samples: 1 at location and during quarter with the highest TTHM single measurement; 1 at location and during quarter with the highest HAA5 single measurement
	100,000-499,999	per quarter	2 samples: 1 at the highest TTHM LRAA location; 1 at the highest HAA5 LRAA location

¹Systems on a quarterly monitoring frequency must collect the sample(s) every 90 days.

²Each sample must be analyzed for all TTHM and HAA5 components.

(1) Additional source water TOC requirement for SW/IGW systems. For SW/IGW systems, the source water RAA TOC level, before any treatment, must be less than or equal to 4.0 mg/L at each treatment plant treating SW or IGW, based on the monitoring conducted under 567—paragraph 43.6(2) “b,” in order to qualify for reduced monitoring.

(2) Continued reduced monitoring frequency. Systems may remain on a reduced monitoring frequency as long as they meet the following criteria. For SW/IGW systems, the

source water annual average TOC level requirement in 41.6(3)“d”(1) must continue to be met.

1. A system with a quarterly reduced monitoring frequency may remain on reduced monitoring as long as the TTHM LRAA is less than or equal to 0.040 mg/L and the HAA5 LRAA is less than or equal to 0.030 mg/L at each monitoring location.

2. A system with an annual or triennial monitoring frequency may remain on reduced monitoring as long as each TTHM sample is less than or equal to 0.060 mg/L and each HAA5 sample is less than or equal to 0.045 mg/L.

(3) Return to routine monitoring frequency. Systems that cannot meet the requirements for reduced monitoring must resume routine monitoring according to 41.6(3)“c” or begin increased monitoring according to 41.6(3)“e.”

1. A system with a quarterly reduced monitoring frequency must resume routine monitoring if the LRAA from any location exceeds either 0.040 mg/L for TTHM or 0.030 mg/L for HAA5.

2. A system with an annual or triennial monitoring frequency must resume routine monitoring if the annual sample at any location exceeds either 0.060 mg/L for TTHM or 0.045 mg/L for HAA5.

3. Any SW/IGW system must resume routine monitoring if the RAA source water TOC level, prior to any treatment, is more than 4.0 mg/L.

4. In addition, the department may require any system to resume routine monitoring at the department’s discretion.

(4) Remaining on reduced monitoring from Stage 1 to Stage 2 transition. A system may remain on reduced monitoring after the dates in 41.6(3)“a”(1) if all of the following three criteria are met. If the three criteria are not met, the system must return to routine monitoring.

1. Under the IDSE, the system qualified for a 40/30 certification or received a very small system waiver;

2. The system meets the reduced monitoring criteria of this paragraph; and

3. The system has not changed or added locations for DBP monitoring from those used under the Stage 1 requirements in 41.6(1).

e. Increased monitoring.

(1) Systems that are monitoring annually or triennially must increase their monitoring frequency to quarterly if the following conditions are met.

1. Single result exceeds the TTHM or HAA5 MCL. A system that is monitoring annually or triennially must increase monitoring to quarterly at all locations if a single TTHM sample is greater than 0.080 mg/L or a single HAA5 sample is greater than 0.060 mg/L. Quarterly samples must be analyzed for both TTHM and HAA5 components.

2. Systems with a TTHM or HAA5 MCL violation. A system that is monitoring annually or triennially that is in violation of the TTHM or HAA5 MCL, based upon the LRAA, must increase monitoring to quarterly at all locations. Quarterly samples must be analyzed for both TTHM and HAA5 components. Calculate the LRAA using either four consecutive quarters of monitoring or using fewer quarters of monitoring if the MCL would be exceeded regardless of the monitoring results of subsequent quarters.

(2) Systems on a quarterly monitoring frequency during Stage 1 to Stage 2 transition. A system that was on increased monitoring under Stage 1 must remain on increased monitoring until it qualifies for a return to routine monitoring under 41.6(3)“e”(3). The system must conduct the increased monitoring at the monitoring locations in the monitoring plan developed under 41.6(3)“b,” beginning on the date identified in 41.6(3)“a”(1).

(3) Return to routine monitoring frequency. A system may return to routine monitoring once it has conducted increased monitoring for at least four consecutive quarters and the

LRAA for every monitoring location is less than or equal to 0.060 mg/L for TTHM and less than or equal to 0.045 mg/L for HAA5. A system may not have any monitoring violations during the most recent four consecutive quarters.

f. Operational evaluation level (OEL).

(1) TTHM OEL. The TTHM OEL is determined by the sum of the two previous quarters' TTHM results plus twice the current quarter's TTHM result, divided by four to determine an average. If that average exceeds 0.080 mg/L, a system has exceeded the TTHM OEL.

(2) HAA5 OEL. The HAA5 OEL is determined by the sum of the two previous quarters' HAA5 results plus twice the current quarter's HAA5 result, divided by four to determine an average. If that average exceeds 0.060 mg/L, a system has exceeded the HAA5 OEL.

(3) OEL compliance. A system must calculate the OEL at any monitoring location that has a single analytical result in excess of the TTHM or HAA5 MCL in the analytical data used to calculate the current 12-month LRAA. A system must determine compliance with the OEL every quarter.

(4) OEL exceedance requirements. A system must conduct an operational evaluation and submit a written evaluation report to the department within 90 days after the system is notified of the analytical result that caused it to exceed the OEL. The report must be made available to the public upon request. The report must include an evaluation of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in source water or source water quality, and treatment changes or problems that may contribute to DBP formation, and what steps could be considered to minimize future exceedances.

1. A system may request that the department limit the scope of the evaluation if it is able to identify the cause of the OEL exceedance. The 90-day report submission deadline cannot be extended.

2. A system must have written department approval to limit the scope of the evaluation. The approval must be kept with the completed report.

g. Reporting and recordkeeping. All systems required to comply with this rule must meet the reporting requirements of 567—paragraph 40.8(3) “d,” and retain monitoring plans and analytical results as required by 567—subrule 40.9(8).

567—41.7(455B) Groundwater (GW) rule: sanitary survey, microbial source water monitoring, TT.

41.7(1) *General requirements.*

a. Scope. The requirements of this rule constitute national primary drinking water regulations.

b. Applicability. This rule applies to all PWSs that use GW, except for PWSs that combine all of their GW with SW or with IGW prior to treatment under 567—43.5(455B). For the purposes of this rule, “GW system” is defined as any PWS meeting this applicability statement, including consecutive systems receiving finished GW. For the purposes of this rule, “4-log virus treatment” means treatment that includes inactivation, removal, or a department-approved combination of inactivation and removal before or at the first customer of 4-log (99.99 percent) of viruses.

c. General. Systems subject to this rule must comply with the following:

- (1) Sanitary survey requirements for all GW systems are described in 41.7(2).
- (2) Microbial source water monitoring requirements for GW systems that do not treat all of their GW to at least 99.99 percent (4-log) virus treatment, as described in 41.7(3).
- (3) TT requirements that apply to GW systems either with fecally contaminated source waters, as determined by monitoring conducted under 41.7(3), or with significant department-identified deficiencies. A GW system with fecally contaminated source water or with

significant deficiencies subject to the TT requirements of this rule must implement one or more of the following corrective action options:

1. Correct all significant deficiencies;
2. Provide an alternate source of water;
3. Eliminate the source of contamination; or
4. Provide treatment that reliably achieves at least 4-log virus treatment before or at the

first customer.

(4) GW systems that provide at least 4-log virus treatment must conduct compliance monitoring to demonstrate treatment effectiveness, as described in 41.7(4).

(5) If requested, GW systems must provide information that will enable the department to perform a hydrogeologic sensitivity assessment. For the purposes of this rule, “hydrogeologic sensitivity assessment” is a determination of whether GW systems obtain water from hydrogeologically sensitive settings.

(6) Analyses under this rule shall only be conducted by laboratories certified in accordance with 567—Chapter 83.

41.7(2) *Sanitary surveys for GW systems.* For the purposes of this rule, a “sanitary survey” conducted in accordance with 567—subrule 43.1(7), includes, but is not limited to, an on-site review of the water sources (identifying sources of contamination using source water assessments or other relevant information), facilities, equipment, operation, maintenance, and monitoring compliance of a PWS.

41.7(3) *GW source microbial monitoring and analytical methods.* A GW system that has a department-approved 4-log virus treatment process and is fulfilling the requirements of 41.7(4)“b” is not required to conduct the triggered source water monitoring under 41.7(3)“a.”

a. Triggered source water monitoring requirements.

(1) General. A GW system must conduct triggered source water monitoring if it:

1. Does not provide at least 4-log virus treatment for each GW source; and
2. Is notified that a sample collected under 41.2(1) “e” and “f” is total coliform-positive, and the sample is not invalidated under 41.2(1) “d.”

(2) Sampling. A GW system must collect at least one GW source sample from each GW source in use at the time the total coliform-positive sample was collected under 41.2(1) “e” and “f” that could have reasonably contributed to the positive sample. The source sample must be collected within 24 hours of the system’s receipt of the total coliform-positive sample.

1. The department may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the GW source sample within 24 hours due to circumstances beyond its control. The department must specify how much time the system has to collect the sample.

2. A GW system serving 1,000 or fewer people may use a repeat sample collected from a GW source to meet both the requirements of 41.2(1) “g” and this paragraph if:

- The department approves the use of *E. coli* as the fecal indicator,
- The system only has one GW source required to be sampled,
- The system has no treatment, and
- Should the source water sample be *E. coli*-positive, the system would incur an acute coliform bacteria MCL violation, and would need to comply with Tier 1 PN requirements and the additional sample monitoring in 41.7(3) “a”(3).

(3) Additional sampling. Unless the department requires corrective action for a valid triggered source water sample that tested positive for the fecal indicator, the system must collect five additional source water samples from that same source within 24 hours of receipt of a fecal indicator-positive sample result.

(4) Consecutive and wholesale systems. In addition to the other requirements in this paragraph:

1. A consecutive GW system that has a total coliform-positive sample collected under 41.2(1)“f” must notify the wholesale system(s) within 24 hours of receipt of the total coliform-positive sample, and

2. A wholesale GW system that does not provide 4-log virus treatment must comply with the following:

- A wholesale GW system that receives notice from a consecutive system it serves that a sample collected under 41.2(1)“f” is total coliform-positive must, within 24 hours of receipt, collect triggered sample(s) from its GW source(s) under 41.7(3)“a”(2) and analyze the sample(s) for a fecal indicator.

- If the triggered source sample(s) is fecal indicator-positive, the wholesale GW system must, within 24 hours of receipt of the result, notify all consecutive systems served by that GW source of the fecal indicator-positive result and collect the required additional five source water samples in accordance with 41.7(3)“a.”

(5) Exceptions. A GW system is not required to comply with the triggered source water monitoring requirements of this paragraph if either of the following conditions exists:

1. The department determines in writing that the total coliform-positive sample collected under 41.2(1)“e” and “f” was caused by a distribution system deficiency; or

2. The total coliform-positive sample collected under 41.2(1)“e” and “g” is collected at a location that meets department criteria for distribution system conditions that will cause total coliform-positive samples.

b. Assessment source water monitoring. If directed by the department, GW systems must conduct assessment source water monitoring that meets department-determined requirements. GW systems conducting assessment source water monitoring may use a triggered source water sample collected under 41.7(3)“a”(2) to meet the requirements of this paragraph. Department-determined assessment source water monitoring requirements may include:

(1) Collection of:

1. A total of 12 GW source samples representing each month the system provides GW to the public;
2. Samples from each well, unless the system obtains written department approval to conduct monitoring at one or more wells within the GW system that are representative of multiple wells used by that system and that draw water from the same hydrogeologic setting;
3. A standard sample volume of at least 100 mL for fecal indicator analysis, regardless of technical indicator or analytical method used;
4. GW source samples at a location before any treatment of the GW source, unless the department approves a sampling location after treatment; and
5. GW source samples at the well itself, unless the system's configuration does not allow for sampling at the well itself and the department approves an alternate sampling location representative of the water quality of that well; or

(2) Analysis of all GW source samples using one of the analytical methods listed in 41.7(3)“c” for the presence of *E. coli*, enterococci, or coliphage.

c. Analytical methods.

(1) GW systems subject to the source water monitoring requirements of this rule must collect a standard sample volume of at least 100 mL for fecal indicator analysis regardless of the fecal indicator or analytical method used.

(2) GW systems must analyze all GW source samples collected under this rule using one of the analytical methods in the following table for the presence of *E. coli*, enterococci, or coliphage.

Analytical Methods for Source Water Monitoring

Fecal Indicator ¹	Methodology	Method Citation
<i>E. coli</i>	Colilert ³	9223B ^{2, 12, 13} , 9223 B-97, B-04 ¹⁸
	Colisure ³	9223B ^{2, 12, 13} , 9223 B-97, B-04 ¹⁸
	Membrane filter method with MI agar	EPA Method 1604 ⁴
	Colilert-18	9223B ^{2, 12, 13} , 9223B-97, B-0418

	m-ColiBlue24 Test ⁵	
	E*Colite Test ⁶	
	EC-MUG ⁷	9221F ^{2, 13} , 9221 F-06 ¹⁸
	NA-MUG ⁷	9222G ²
	Readycult	Readycult ¹⁴
	Colitag	Modified Colitag ¹⁵
	Chromocult	Chromocult ¹⁶
	Tecta EC/TC	Tecta EC/TC ¹⁹
Enterococci	Multiple-tube technique	9230B ² , 9230 B-04 ¹⁸
	Membrane filter technique	9230C ² , EPA Method 1600 ⁸
	Enterolert ⁹	
Coliphage	Two-step enrichment presence-absence procedure	EPA Method 1601 ¹⁰ , FastPhage ¹⁷
	Single agar layer procedure	EPA Method 1602 ¹¹

Analyses must be conducted in accordance with the documents listed below. The Director of the Federal Register approves the incorporation by reference of the documents listed in footnotes 2 through 11 in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from the sources listed below or inspected at EPA's Drinking Water Docket or at NARA.

¹The time from sample collection to initiation of analysis may not exceed 30 hours. GW systems are encouraged but not required to hold samples below 10 degrees Celsius during transit.

²Methods are described in SM, 20th edition (1998).

³Medium is available through IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, ME 04092.

⁴EPA Method 1604: Total Coliforms and *Escherichia coli* in Water by Membrane Filtration Using a Simultaneous Detection Technique (MI Medium); September 2002, EPA 821-R-02-024, www.nemi.gov.

⁵A description of the m-ColiBlue24 Test, "Total Coliforms and *E. coli* Membrane Filtration Method with m-ColiBlue24 Broth," Method No. 10029, Revision 2, August 17, 1999, Hach Company, 100 Dayton Avenue, Ames, IA 50010.

⁶A description of the E*Colite Test, "Charm E*Colite Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Drinking Water," January 9, 1998, Charm Sciences, Inc., 659 Andover Street, Lawrence, MA 01843-1032.

⁷EC-MUG (Method 9221F) or NA-MUG (Method 9222G) can be used for *E. coli* testing step as described in 41.2(1)"f"(6) or (7) after use of SM 9221B, 9221D, 9222B, or 9222C.

⁸EPA Method 1600: Enterococci in Water by Membrane Filtration Using Membrane-Enterococcus Indoxyl-β-D-Glucoside Agar (MEI), EPA 821-R-02-022 (September 2002), is an approved variation of SM 9230C, www.nemi.gov. The holding time and temperature for GW samples is specified in footnote 1 above, rather than as specified in Section 8 of EPA Method 1600.

⁹Medium is available through IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, ME 04092. Preparation and use of the medium is set forth in the article “Evaluation of Enterolert for Enumeration of Enterococci in Recreational Waters” by Budnick, G.E., Howard, R.T., and Mayo, D.R., 1996, Applied and Environmental Microbiology, 62:3881-3884.

¹⁰EPA Method 1601: Male-Specific (F+) and Somatic Coliphage in Water by Two-Step Enrichment Procedure; April 2001, EPA 821-R-01-030, www.nemi.gov.

¹¹EPA Method 1602: Male-Specific (F+) and Somatic Coliphage in Water by Single Agar Layer (SAL) Procedure; April 2001, EPA 821-R-01-029, www.nemi.gov.

¹²SM, 21st edition (2005).

¹³SM, 22nd edition (2012).

¹⁴ReadyCult Method, “ReadyCult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters,” January 2007, Version 1.1. EMD Millipore, 290 Concord Road, Billerica, MA 01821.

¹⁵Modified Colitag Method, “Modified Colitag Test Method for the Simultaneous Detection of *E. coli* and Other Total Coliforms in Water (ATP D05-0035),” August 28, 2009, www.nemi.gov or CPI International, 5580 Skyline Blvd., Santa Rosa, CA 95403.

¹⁶Chromocult Method, “Chromocult Coliform Agar Presence/Absence Membrane Filter Test Method for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters,” November 2000, Version 1.0. EMD Millipore, 290 Concord Road, Billerica, MA 01821.

¹⁷Charm Sciences, Inc., “FastPhage Test Procedure. Presence/Absence for Coliphage in Ground Water with Same Day Positive Prediction,” Version 009, November 2012, www.charmsciences.com.

¹⁸SM Online. The year in which each method was approved is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

¹⁹Tecta EC/TC. “Presence/Absence Method for Simultaneous Detection of Total Coliforms and *Escherichia coli* in Drinking Water,” April 2014. Veolia Water Solutions and Technologies, Suite 4697, Biosciences Complex, 116 Barrie Street, Kingston, Ontario, Canada K7L 3N6.

d. Invalidation of a fecal indicator-positive GW source sample.

(1) GW systems may obtain invalidation from the department of a fecal indicator-positive GW source sample collected under 41.7(3) “a” only under these conditions:

1. The system provides the department with written notice from the laboratory that improper sample analysis occurred; or

2. The department determines in writing that there is substantial evidence that a fecal indicator-positive GW source sample is not related to source water quality.

(2) If the department invalidates a fecal indicator-positive GW source sample, the system must collect another source water sample under 41.7(3)“a” within 24 hours of department notification of the invalidation decision. The sample must be analyzed for the same fecal indicator using the analytical methods in 41.7(3)“c.” The department may extend the 24-hour time limit on a case-by-case basis if the system cannot collect the source water sample within 24 hours due to circumstances beyond its control. For an extension, the department must specify how much time the system has to collect the sample.

e. Sampling location.

(1) Any GW source sample required under 41.7(3)“a” must be collected at a location prior to any treatment of the GW source, unless the department approves a sampling location after treatment.

(2) If the system’s configuration does not allow for sampling at the well itself, the system may collect a sample at a department-approved location to meet the requirements of 41.7(3)“a” if the sample is representative of the water quality of that well.

f. New sources. As directed by the department, a GW system that places a new GW source into service must conduct assessment source water monitoring, including the sampling and analysis in 41.7(3)“b”(3) to 41.7(3)“b”(6). If directed, the system must begin monitoring before the GW source is used to provide water to the public.

g. PN. A system with a GW source sample collected under 41.7(3)“a” or “b” that is fecal indicator-positive and that is not invalidated under 41.7(3)“d,” including consecutive systems served by the GW source, must conduct Tier 1 PN under 567—subrule 40.5(2).

h. Monitoring violations. Failure to meet the requirements of 41.7(3) “a” through “f” is a monitoring violation that requires the system to provide Tier 3 PN under 567—subrule 40.5(4).

41.7(4) *GW system TT requirements.*

a. GW systems with significant deficiencies or source water fecal contamination.

(1) The TT requirements of this subrule must be met by GW systems when a significant deficiency is identified or when a GW source sample collected under 41.7(3) “a”(3) is fecal indicator-positive.

(2) If directed by the department, a GW system with a GW source sample collected under 41.7(3) “a”(2), 41.7(3) “a”(4), or 41.7(3) “b” that is fecal indicator-positive must comply with the TT requirements of this subrule.

(3) When a significant deficiency is identified at a SW or IGW system that also uses a GW source not under the influence of SW, the system must comply with provisions of this paragraph, except in cases where the department determines that the significant deficiency is in a portion of the distribution system that is served solely by the SW or IGW source.

(4) Unless the department directs the GW system to implement a specific corrective action, the system must consult with the department regarding the appropriate corrective action within 30 days of either receiving a written department notice of a significant deficiency, written notice from a laboratory that a GW source sample collected under 41.7(3) “a”(3) is fecal indicator-positive, or direction from the department that a fecal indicator-positive sample collected under 41.7(3) “a”(2), 41.7(3) “a”(4), or 41.7(3) “b” requires corrective action. For the purposes of this subrule, significant deficiencies include, but are not limited to, defects in design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the department determines to be causing, or

have potential for causing, the introduction of contamination into the water delivered to consumers.

(5) Within 120 days, or earlier if directed by the department, of either receiving written department notification of a significant deficiency, written notice from a laboratory that a GW source sample collected under 41.7(3) “a”(3) is fecal indicator-positive, or direction from the department that a fecal indicator-positive sample collected under 41.7(3) “a”(2), 41.7(3) “a”(4), or 41.7(3) “b” requires corrective action, the GW system must either:

1. Have completed corrective action in accordance with applicable department plan review processes or other department guidance or direction, if any, including department-specified interim measures; or

2. Be in compliance with a department-approved corrective action plan and schedule, subject to the following conditions:

- Any subsequent modifications to a department-approved corrective action plan and schedule must also be approved by the department; and

- If the department specifies interim measures for public health protection, pending department approval of the corrective action plan and schedule, or pending completion of the corrective action plan, the system must comply with these interim measures in addition to any department-specified schedule.

(6) Corrective action alternatives. GW systems meeting the conditions of 41.7(4) “a”(1) or (2) must implement one or more of the following corrective action alternatives:

1. Correct all significant deficiencies;
2. Provide an alternate source of water;
3. Eliminate the source of contamination; or
4. Provide treatment that reliably achieves at least 4-log virus treatment for the GW source.

(7) Special PN of significant deficiencies or source water fecal contamination.

1. In addition to the Tier 1 PN requirements of 567—subrule 40.5(2), a community GW system that receives department notice of a significant deficiency or notification of a fecal indicator-positive GW source sample that is not invalidated under this rule must inform the public served by the water system of the fecal indicator-positive source sample or of any uncorrected significant deficiency, in accordance with 567—paragraph 40.7(9) “e.” The system must continue to inform the public annually until the significant deficiency is corrected or until the department determines that the fecal contamination in the GW source is corrected, in accordance with 41.7(3) “a”(5).

2. In addition to the Tier 1 PN requirements of 567—subrule 40.5(2), a noncommunity GW system that receives department notice of a significant deficiency must inform the public served by the system, in a department-approved manner, of any significant deficiency that is not corrected within 12 months of department notification or earlier if directed by the department. The system must continue to inform the public annually until the significant deficiency is corrected. The information must include:

- The nature of the significant deficiency and the date it was identified by the department;
- The department-approved plan and schedule for correction of the significant deficiency, including interim measures, progress to date, and any interim measures completed; and
- For systems with a large proportion of non-English speaking consumers, as determined by the department, information in the applicable language(s) regarding the importance of the notice, or a telephone number or address where consumers may contact the system to obtain a translated copy of the notice or assistance in the appropriate language.

3. If directed by the department, an NCWS with significant deficiencies that have been corrected must inform its customers of the significant deficiencies, how the deficiencies were corrected, and the dates of correction under 41.7(4) “a”(7)“2.”

b. Compliance monitoring.

(1) Existing GW sources. A GW system that provides at least 4-log virus treatment must submit a request to the department to avoid the source water monitoring requirements of 41.7(3). The request must include engineering, operational, or other information that the department may need to evaluate the submission. The department must approve the request in writing before the system can avoid the GW source monitoring requirements. The system's operation permit will include the mandatory operational requirements for the approved 4-log virus treatment. If the system subsequently discontinues 4-log virus treatment or no longer wishes to be exempt, the system must conduct GW source monitoring as required under 41.7(3).

(2) New GW sources. A GW system that places a GW source in service that is not required to meet the source water monitoring requirements of this subrule because it provides at least 4-log virus treatment for the GW source must comply with the following requirements:

1. The system must notify the department in writing that it provides at least 4-log virus treatment for the GW source. The department notification must include engineering, operational, or other information that the department requests to evaluate the submission. The contact time values for virus inactivation using free chlorine, chlorine dioxide, and ozone are in 567—Chapter 43, Appendix C. No CT table is provided for chloramines and total chlorine as the CT values would be prohibitively high for GW systems.

2. The system must conduct compliance monitoring under 41.7(4) "b"(3) within 30 days of placing the source in service.

3. The system must conduct GW source monitoring under 41.7(3) if it subsequently discontinues 4-log virus treatment for the GW source.

(3) Monitoring requirements. A GW system subject to 41.7(4) “a,” 41.7(4) “b”(1), and 41.7(4) “b”(2) must monitor the effectiveness and reliability of treatment for that GW source before or at the first customer as follows:

1. Chemical disinfection. A GW system must monitor the residual disinfectant concentration, using analytical methods specified in 567—subparagraph 43.5(4) “a”(5), at a department-approved location and must record the lowest residual disinfectant concentration each day that water from the GW source is served to the public. A GW system must maintain the department-determined minimum residual disinfectant concentration every day the GW system serves water from the GW source to the public.

- A GW system serving more than 3,300 people must monitor continuously. If there is a failure in the continuous monitoring equipment, the system must conduct grab sampling every four hours until the continuous monitoring equipment is returned to service. The system must resume continuous residual disinfectant monitoring within 14 days.

- A GW system serving 3,300 or fewer people must take a daily grab sample during the hour of peak flow or at another department-specified time. If any daily grab sample measurement falls below the department-determined minimum residual disinfectant concentration, the system must take follow-up samples every four hours until the residual disinfectant concentration is restored to the department-determined minimum level. Alternatively, a GW system that serves 3,300 or fewer people may monitor continuously and meet the requirements of 41.7(4) “b”(3) “1,” first bulleted paragraph.

2. Membrane filtration. A GW system using membrane filtration to meet the requirements of this paragraph to provide at least 4-log virus treatment must monitor and operate the membrane filtration process in accordance with all department-specified monitoring and compliance requirements. A GW system that uses membrane filtration is in compliance with the requirement to achieve at least 4-log virus removal when:

- The membrane has an absolute molecular weight cut-off (MWCO), or an alternate parameter that describes the exclusion characteristics of the membrane, that can reliably achieve at least 4-log virus removal;

- The membrane process is operated in accordance with department-specified compliance requirements; and

- The integrity of the membrane is intact.

3. Alternative treatment. A GW system using a department-approved alternative treatment to meet the requirements of 41.7(4) “b” by providing at least 4-log virus treatment must:

- Monitor the alternative treatment in accordance with all department-specified monitoring requirements; and

- Operate the alternative treatment in accordance with all compliance requirements that the department determines to be necessary to achieve at least 4-log virus treatment.

c. Discontinuing treatment. A GW system may discontinue 4-log virus treatment for a GW source if the department determines in writing that 4-log virus treatment is no longer necessary for that GW source. A system that discontinues 4-log virus treatment is subject to 41.7(3).

d. Monitoring violation. Failure to meet the monitoring requirements of 41.7(4) “b” is a monitoring violation and requires the GW system to provide Tier 3 PN under 567—subrule 40.5(4).

41.7(5) GW system TT violations. A GW system must give Tier 2 PN under 567—subrule 40.5(3) for the TT violations specified in this subrule.

a. Significant deficiency. A GW system with a significant deficiency is in violation of the TT requirement if, within 120 days (or earlier if directed by the department) of receiving written department notice of the significant deficiency, the system:

(1) Does not complete corrective action in accordance with any applicable department plan review processes or other department direction, including department-specified interim measures; or

(2) Is not in compliance with a department-approved corrective action plan and schedule.

b. Fecal indicator-positive source sample. Unless the department invalidates a fecal indicator-positive GW source sample under 41.7(3) “d”(1), a GW system is in violation of the TT requirement if, within 120 days (or earlier if directed by the department) of meeting the conditions of 41.7(4) “a”(1) or 41.7(4) “a”(2), the system:

(1) Does not complete corrective action in accordance with any applicable department plan review processes or other department direction, including department-specified interim measures; or

(2) Is not in compliance with a department-approved corrective action plan and schedule.

c. Failure to maintain 4-log treatment. A GW system subject to 41.7(4) “b”(3) that fails to maintain at least 4-log virus treatment for a GW source is in violation of the TT requirement if the failure is not corrected within four hours of the determination that the system is not maintaining at least 4-log virus treatment before or at the first customer.

41.7(6) *GW system reporting and recordkeeping.*

a. Reporting. In addition to meeting the requirements of 567—subrule 40.8(1), GW systems must provide the following information to the department:

(1) A GW system conducting compliance monitoring under 41.7(4) “b” must provide notification any time it fails to meet any of the requirements for 4-log virus treatment including, but not limited to, minimum residual disinfectant concentration, membrane operating criteria or membrane integrity, and alternative treatment operating criteria, if operation in accordance with the criteria or requirements is not restored within four hours.

Notification must be provided as soon as possible but in no case later than the end of the next business day.

(2) Notification of action completion, within 30 days of completing any corrective action under 41.7(4) “a.”

(3) If a GW system subject to 41.7(3) “a” does not conduct source water monitoring under 41.7(3) “a”(5) “2,” the system must provide documentation within 30 days of the total coliform-positive sample that it met the department’s criteria.

b. Recordkeeping. In addition to the requirements in 567—40.9(455B), GW systems must maintain the following information for the specified time period:

(1) Documentation of corrective actions must be kept for not less than ten years.

(2) Documentation of PN required under 41.7(4) “a”(7) must be kept for not less than three years.

(3) Records of decisions under 41.7(3) “a”(5) “2” and records of fecal indicator-positive GW source sample invalidation under 41.7(3) “d”(1) must be kept for not less than five years.

(4) For consecutive systems, documentation of notification to the wholesale system(s) of total coliform-positive samples that are not invalidated under 41.2(1) “d” must be kept for not less than five years.

(5) Systems, including wholesale systems, required to perform compliance monitoring under 41.7(4) “b”(1), must maintain the following records:

1. The department-specified minimum disinfectant residual must be kept for not less than ten years.

2. Both the lowest daily residual disinfectant concentration and the date and duration of any failure to maintain the department-prescribed minimum residual disinfectant concentration for more than four hours must be kept for not less than five years.

3. Department-specified compliance requirements for membrane filtration, department-specified parameters for department-approved alternative treatment, and the date and duration of any failure to meet the membrane operating, membrane integrity, or alternative treatment operating requirements for more than four hours must be kept for not less than five years.

567—41.8(455B) Radionuclides.

41.8(1) *Radionuclides.*

a. Applicability.

(1) This rule applies to all CWSs and specifies radionuclide MCLs, analytical methodology requirements, and monitoring requirements. Radionuclide reporting requirements are listed in 567—subrule 40.8(1), PN requirements are in 567—40.5(455B), and BAT is in 567—subparagraph 43.3(10)“b”(3). All CWSs must comply with the requirements and MCLs for gross alpha particle activity, radium-226, radium-228, uranium, beta particle activity, and photon emitter radioactivity. Only those CWSs designated by the department to be vulnerable to man-made radioactivity contamination are required to monitor for beta particle activity and photon emitter radioactivity. To determine whether a system is vulnerable to man-made nuclear radioactivity, the department will evaluate proximity to a nuclear facility, source water, historical analytical data, ongoing surveillance data from the nuclear facility, and any other factor considered to be relevant.

(2) Compliance dates. CWS must comply with the MCLs in 41.8(1)“b”(1). Compliance shall be determined in accordance with 41.8(1)“c” through “f.” Compliance with the radionuclides reporting requirements is required. All CWSs must conduct initial monitoring to determine compliance with 41.8(1)“b”(1) by December 31, 2007.

b. MCLs for radionuclides.

(1) Gross alpha particle activity, radium-226, radium-228, and uranium MCLs are specified in the following table:

Contaminant	MCL
Gross alpha particle activity, including Radium-226 but excluding radon and uranium	15 pCi/L
Combined Radium-226 and Radium-228	5 pCi/L ¹
Uranium	30 µg/L

¹Determine the combined radium-226 and radium-228 by the adding the results of analysis for radium-226 and radium-228.

(2) Beta particle activity and photon radioactivity MCLs.

1. The average annual concentration of beta particle and photon radioactivity from man-made radionuclides in drinking water must not produce an annual dose equivalent to the total body or any internal organ greater than 4 mrem/year.

2. Except for the radionuclides listed below, the concentration of man-made radionuclides causing 4 mrem total body or organ dose equivalents must be calculated on the basis of 2 liter per day drinking water intake, using the 168-hour data lists in “Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure,” National Bureau of Standards Handbook 69 as amended August 1963, U.S. Department of Commerce. If two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 mrem/year.

**Average Annual Concentrations Assumed to Produce a
Total Body or Organ Dose of 4 mrem/year**

Radionuclide	Critical Organ	Concentration
Strontium-90	Bone marrow	8 pCi/L
Tritium	Total body	20,000 pCi/L

c. Detection limits and compliance determinations. Compliance with the radionuclide MCLs will be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL, the system is in violation of the MCL. If a system is in violation of an MCL, the supplier of the water is required to give notice to the department in accordance with 567—subrule 40.8(1) and to provide PN as required by rule 567—40.5(455B).

(1) Detection limits. When monitoring gross alpha particle activity, radium-226, radium-228, uranium, and beta particle and photon radioactivity concentration in drinking water, the required sensitivity of the radioanalysis is defined in terms of a detection limit. The detection limit shall be that concentration which can be counted with a precision of plus or minus 100 percent at the confidence level (1.960 sigma, where sigma is the standard deviation of the net counting rate of the sample).

1. To determine compliance with the specified radionuclide MCLs, the detection limit shall not exceed the following concentrations:

**Detection Limits for Gross Alpha Particle Activity,
Radium-226, Radium-228, and Uranium**

Contaminant	Detection Limit
Gross alpha particle activity	3 pCi/L
Radium-226	1 pCi/L
Radium-228	1 pCi/L
Uranium	1 µg/L

2. To determine compliance with the specified radionuclide MCLs, the detection limits shall not exceed the following concentrations:

Detection Limits for Man-Made Beta Particle and Photon Emitters

Contaminant	Detection Limit
Gross beta	4 pCi/L
Cesium-134	10 pCi/L
Iodine-131	1 pCi/L
Strontium-89	10 pCi/L
Strontium-90	2 pCi/L
Tritium	1,000 pCi/L
Other radionuclides	1/10 of the applicable limit

(2) Compliance determination.

1. For systems monitoring more than once per year, MCL compliance is determined by a running annual average (RAA) at each sampling point. If the average of any sampling point is greater than the MCL, the system is immediately in violation of the MCL. If any sample

result causes the RAA to exceed the MCL at any sample point, the system is immediately in violation of the MCL.

2. Systems monitoring annually or less frequently whose sample result exceeds the MCL must revert to quarterly sampling for that contaminant during the next quarter. Systems are required to conduct quarterly monitoring only at the SEP at which the sample was collected and for the specific contaminant that triggered the increased monitoring frequency. Systems triggered into increased monitoring will not be considered in violation of the MCL until they have completed one year of quarterly sampling. If any sample result causes the RAA to exceed the MCL at any sample point, the system is immediately in violation of the MCL.

3. Systems must include all samples taken and analyzed under the provisions of this rule in determining compliance, even if that number is greater than the minimum required by the department.

4. If a system does not collect all required samples when compliance is based on an RAA of quarterly samples, compliance will be based on the running average of the samples collected.

5. If a sample result is less than the detection limit, use a value of zero to calculate the annual average.

6. The department may invalidate results of obvious sampling or analytical errors.

7. To judge compliance with the radionuclide MCLs, averages of data shall be used and shall be rounded to the same number of significant figures as the MCL for the contaminant in question.

(3) The department will determine compliance or initiate enforcement action based upon analytical results or other information compiled by department staff or the department's designee.

(4) The department may assign additional requirements deemed necessary to protect public health, including PN requirements.

d. Radionuclide analytical methodology. Analysis for radionuclides shall be conducted to determine compliance with the radionuclide MCLs in accordance with the methods in the following table, or equivalent methods determined in accordance with rule 567—41.10(455B).

(1) Radionuclide Analytical Methodology Table.

Radionuclide Analytical Methodology

Contaminant	Methodology	Reference (method or page number)								
		EPA ¹	EPA ²	EPA ³	EPA ⁴	SM ⁵	ASTM ⁶	USGS ⁷	DOE ⁸	Other
Naturally occurring:										
Gross alpha ¹¹ & beta	Evaporation	900.0	p. 1	00-01	p. 1	302, 7110B, 7110 B-00		R-1120-76		
Gross alpha ¹¹	Co-precipitation			00-02		7110C, 7110 C-00				
Radium-226	Radon emanation	903.1	p. 16	Ra-04	p. 19	305, 7500-Ra C, 7500Ra C-01	D 3454-97, 05	R-1141-76	Ra-04	NY ⁹
	Radiochemical	903.0	p. 13	Ra-03		304, 7500-Ra B, 7500-Ra B-01	D 2460-97, 07	R-1140-76		GA ¹⁴
Radium-228	Radiochemical	904.0	p. 24	Ra-05	p. 19	7500-Ra D, 7500-Ra D-01		R-1142-76		NY ⁹ NJ ¹⁰ GA ¹⁴
Uranium ¹²	Radiochemical	908.0				7500-U B, 7500-U B-00				
	Fluorometric	908.1				7500-U C (17th ed.)	D 2907-97	R-1180-76 R-1181-76	U-04	
	ICP-MS	200.8 ¹³				3125	D 5673-03, 05, 10			
	Alpha spectrometry			00-07	p. 33	7500-U C, 7500-U C-00	D 3972-97, 02, 09	R-1182-76	U-02	
	Laser phosphorimetry						D 5174-97, 02, 07			
	Alpha liquid scintillation spectrometry						D 6239-09			
Man-made:										
Radioactive Cesium	Radiochemical	901.0	p. 4			7500-Cs B, 7500-Cs B-00	D 2459-72	R-1111-76		
	Gamma ray spectrometry	901.1			p. 92	7120, 7120-97	D 3649-91, 98a, 06	R-1110-76	4.5.2.3	
Radioactive Iodine	Radiochemical	902.0	p. 6 p. 9			7500-I B, 7500-I B-00, 7500-I C, 7500-I C-00, 7500-I D, 7500-I D-00	D 3649-91, 98a, 06			
	Gamma ray spectrometry	901.1			p. 92	7120, 7120-97	D 4785-93, 00a, 08		4.5.2.3	
Radioactive Strontium 89, 90	Radiochemical	905.0	p. 29	Sr-04	p. 65	303, 7500-Sr B, 7500-Sr B-01		R-1160-76	Sr-01 Sr-02	

Tritium	Liquid scintillation	906.0	p. 34	H-02	p. 87	306, 7500- ³ H B, 7500- ³ H B-00	D 4107-91, 98 (Reapproved 2002), 08	R-1171-76		
Gamma emitters	Gamma ray spectrometry	901.1 902.0 901.0			p. 92	7120, 7500-Cs B, 7500-Cs B-00, 7500-I B, 7500-I B-00	D 3649-91, 98a, 06 D 4785-93, 00a, 08	R-1110-76	Ga-01-R	

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of documents 1 through 10 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies may be obtained from the sources listed below. Information regarding the documents can be obtained from the Safe Drinking Water Hotline at 800.426.4791. Documents may be inspected at EPA's Drinking Water Docket or at the Office of Federal Register.

¹"Prescribed Procedures for Measurement of Radioactivity in Drinking Water," EPA 600/4-80-032, August 1980. NTIS, PB 80-224744.

²"Interim Radiochemical Methodology for Drinking Water," EPA 600/4-75-008(revised), March 1976. NTIS, *ibid.* PB 253258.

³"Radiochemistry Procedures Manual," EPA 520/5-84-006, December 1987. NTIS, *ibid.* PB 84-215581.

⁴"Radiochemical Analytical Procedures for Analysis of Environmental Samples," March 1979. NTIS, *ibid.* EMSL LV 053917.

⁵SM, 13th, 17th, 18th, 19th, 20th, 21st, and 22nd editions, 1971, 1989, 1992, 1995, 1998, 2005, and 2012. Methods 302, 303, 304, 305, and 306 are in the 13th edition. Methods 7110B, 7500-Ra B, 7500-Ra C, 7500-Ra D, 7500-U B, 7500-Cs B, 7500-I B, 7500-I C, 7500-I D, 7500-Sr B, 7500-3H B are in the 17th, 18th, 19th, 20th, 21st, and 22nd editions. Method 7110C and Method 7500-U C Alpha spectrometry are in the 18th, 19th, 20th, 21st, and 22nd editions. Method 7500-U C Fluorimetric Uranium is in the 17th and 21st editions. Method 7120 is in the 19th, 20th, 21st, and 22nd editions. Method 3125 is in the 20th edition. Methods 7110 B-00, 7110 C-00, 7500-Ra B-01, 7500-Ra C-01, 7500-Ra D-01, 7500-U B-00, 7500-U C-00, 7500-I B-00, 7500-I C-00, 7500-I D-00, 7120-97, 7500-Sr B-01, and 7500-3H B-00. The year that each method was approved is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

⁶ASTM, Volumes 11.01 and 11.02, 2002. Any year containing the cited version of the method may be used.

⁷"Methods for Determination of Radioactive Substances in Water and Fluvial Sediments," Chapter A5 in Book 5 of Techniques of Water-Resources Investigations of the USGS, 1977. USGS Information Services, Box 25286, Federal Center, Denver, CO 80225-0425.

⁸“EML Procedures Manual,” 28th (1997) or 27th (1990) edition, Volumes 1 and 2; either edition may be used. In the 27th edition, Method Ra-04 is listed as Ra-05, and Method Ga-01-R is listed as Sect. 4.5.2.3. Environmental Measurements Laboratory, U.S. Department of Energy, 376 Hudson Street, New York, NY 10014-3621.

⁹“Determination of Ra-226 and Ra-228 (Ra-02),” January 1980, revised June 1982. Radiological Sciences Institute Center for Laboratories and Research, New York State Department of Health, Empire State Plaza, Albany, NY 12201.

¹⁰“Determination of Radium-228 in Drinking Water,” August 1980. State of New Jersey, Department of Environmental Protection, Division of Environmental Quality, Bureau of Radiation and Inorganic Analytical Services, 9 Ewing Street, Trenton, NJ 08625.

¹¹Natural uranium and thorium-230 are approved as gross alpha calibration standards for gross alpha with co-precipitation and evaporation methods; americium-241 is approved with co-precipitation methods.

¹²If uranium (U) is determined by mass, a 0.67 pCi/μg of uranium conversion factor must be used. This conversion factor is based on the 1:1 activity ratio of U-234 to U-238 that is characteristic of naturally occurring uranium.

¹³“Determination of Trace Elements in Waters and Wastes by Inductively Coupled Plasma-Mass Spectrometry,” Revision 5.4, published in “Methods for the Determination of Metals in Environmental Samples – Supplement 1,” EPA 600-R-94-111, May 1994. NTIS, PB 95-125472.

¹⁴“The Determination of Radium-226 and Radium-228 in Drinking Water by Gamma-Ray Spectrometry Using HPGW or Ge(Li) Detectors,” Revision 1.2, December 2004. Environmental Resources Center, Georgia Institute of Technology, 620 Cherry Street, Atlanta, GA 30332-0335.

(2) Method references for other radionuclides. When the identification and measurement of radionuclides other than those listed in 41.8(1) “b” are required, the following references shall be used, except in cases where alternative methods have been approved in accordance with 567—41.12(455B).

1. “Procedures for Radiochemical Analysis of Nuclear Reactor Aqueous Solutions,” H. L. Krieger and S. Gold, EPA-R4-73-014, EPA, Cincinnati, Ohio 45268 (May 1973).

2. “HASL Procedure Manual,” edited by John H. Harley. HASL 300, ERDA Health and Safety Laboratory, New York, NY (1973).

e. Monitoring requirements for gross alpha, radium-226, radium-228, and uranium.

(1) General.

1. Monitoring frequency and confirmation samples. The department may require more frequent monitoring than specified in this paragraph and may require confirmation samples at its discretion. The results of the initial and confirmation samples will be averaged for use in compliance determinations.

2. Monitoring period. Each PWS shall monitor during the time period specified in the operation permit.

(2) Applicability and sampling locations.

1. Existing systems and sources. All existing CWSs must sample at every SEP representative of all sources being used under normal operating conditions. Systems must take each sample at the same SEP sampling point, unless conditions make another alternate sampling point more representative of each source, or the department has designated a distribution system location, in accordance with this paragraph. The department must approve any alternate sampling point for radionuclides.

2. New systems and sources. All new CWSs or CWSs that use a new source of water must begin initial monitoring for the new system or source within the first calendar quarter after initiating use of the system or source. More frequent monitoring must be conducted by a CWS when required by the department, in the event of possible contamination, or when changes in the distribution system or treatment processes occur which may increase the concentration of radioactivity in finished water.

(3) Initial monitoring. Systems must conduct initial monitoring for gross alpha particle activity, radium-226, radium-228, and uranium as follows. If the average of the initial monitoring results for an SEP is above the MCL, a system must collect and analyze quarterly samples at that SEP until it has results from four consecutive quarters that are at or below the MCL unless it enters into another schedule as part of a formal compliance agreement with the department.

1. Systems without historical monitoring data. Systems without historical monitoring data must collect four consecutive quarterly samples at all SEP sampling points before December 31, 2007. The department may waive the final two quarters of initial monitoring from an SEP if the results of the samples from the previous two quarters are below the detection limit.

2. Systems with historical monitoring data and one SEP. Systems with only one SEP may use historical monitoring data collected between January 1, 2000, and December 31, 2003, from either the representative point in the distribution system or the SEP to satisfy the initial monitoring requirement.

3. Systems with historical SEP monitoring data and multiple SEPs. Systems with multiple SEPs that also have appropriate historical monitoring data for each SEP may use the monitoring data collected between January 1, 2000, and December 31, 2003, to satisfy the initial monitoring requirement.

4. Systems with historical distribution system monitoring data and multiple SEPs. Systems with appropriate historical data for a representative point in the distribution system and multiple SEPs may use the monitoring data collected between January 1, 2000, and December 31, 2003, provided that the department determines that the historical data satisfactorily demonstrates that each SEP is expected to be in compliance based upon the historical data and reasonable assumptions about the variability of contaminant levels between SEPs. The department must make a written finding indicating how the data conforms to these requirements in order for the data to satisfy the initial monitoring requirements.

(4) Reduced monitoring. The department may allow a CWS to reduce the future monitoring frequency from once every three years to once every six or nine years at each SEP, based on the following criteria. The samples collected during the reduced monitoring period must be used to determine the monitoring frequency for subsequent monitoring periods. If a system has a monitoring result that exceeds an MCL while on reduced monitoring, the system

must collect and analyze quarterly samples at that SEP until it has results from four consecutive quarters that are below the MCL unless it enters into another schedule as part of a formal compliance agreement with the department.

1. Nine-year frequency. If the average of the initial monitoring results for each contaminant is below the radionuclide detection limits specified in this subrule, a system must collect and analyze for that contaminant using at least one sample at that SEP every nine years.

2. Six-year frequency. If the average of the initial monitoring results for gross alpha particle activity, uranium, and combined radium-226 and radium-228 is at or above the detection limit and at or below half the MCL for a contaminant, a system must collect and analyze for that contaminant using at least one sample at that SEP every six years. The analytical results for radium-226 and radium-228 must be added together to yield the combined result.

3. Three-year frequency. If the average of the initial monitoring results for gross alpha particle activity, uranium, and combined radium-226 and radium-228 is above half of the MCL and at or below the MCL for a contaminant, a system must collect and analyze for that contaminant using at least one sample at that SEP every three years. The analytical results for radium-226 and radium-228 must be added together to yield the combined result.

- (5) Composite samples. To fulfill quarterly monitoring requirements for gross alpha particle activity, radium-226, radium-228, or uranium, a system may composite up to four consecutive quarterly samples from a single entry point if analysis is done within one year of the first sample. The analytical results from the composited samples will be considered by the department as the average analytical result to determine MCL compliance and to determine the future monitoring frequency. If the analytical result from the composited sample is greater than half of the MCL, the department may require additional quarterly samples from the system before the system will be allowed to sample under a reduced monitoring schedule.

(6) Data substitution using gross alpha particle activity results.

1. A gross alpha particle activity measurement may be substituted for the required uranium measurement provided that the measured gross alpha particle activity does not exceed 15 pCi/L.

2. The gross alpha particle activity measurement shall have a confidence interval of 95 percent (1.65 sigma, where sigma is the standard deviation of the net counting rate of the sample) for uranium. When a system uses a gross alpha particle activity measurement in lieu of a uranium measurement, the gross alpha particle activity analytical result will be used to determine the future monitoring frequency for uranium. If the gross alpha particle activity result is less than the detection limit, half the detection limit will be used to determine compliance and the future monitoring frequency.

f. Monitoring requirements for beta particle and photon emitters. To determine compliance with the radionuclide MCLs for beta particle and photon radioactivity, a system must monitor at a frequency specified in this paragraph.

(1) General.

1. Monitoring frequency and confirmation samples. The department may require more frequent monitoring than specified in this paragraph and may require confirmation samples at its discretion. The results of the initial and confirmation samples will be averaged for use in compliance determinations.

2. Monitoring period. Each PWS shall monitor during the time period designated by the department in the operation permit.

(2) Systems designated by the department as vulnerable to man-made radioactivity.

1. Initial monitoring. Systems that have been determined by the department to be vulnerable to man-made radioactivity must collect quarterly samples for beta emitters and annual samples for tritium and strontium-90 at each SEP, beginning within one quarter after

being notified by the department of this requirement. Systems already required to conduct beta particle and photon radioactivity monitoring must continue to sample until the department removes the monitoring requirement.

2. Reduced monitoring. The department may reduce the monitoring frequency at that sampling point to once every three years, if the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at an SEP has an RAA (computed quarterly) of less than or equal to 50 pCi/L (screening level). Systems must collect all of the samples required in “1” of this subparagraph during the reduced monitoring period.

3. Data substitution. For a system in the vicinity of a nuclear facility, the department may allow the system to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at its SEP(s), where the department determines such data is applicable. In the event that there is a release from a nuclear facility, systems using surveillance data must begin monitoring at its SEP(s) in accordance with this subparagraph.

(3) Systems determined to utilize waters contaminated by effluents from nuclear facilities.

1. Initial monitoring. Systems designated by the department as utilizing water contaminated by effluents from nuclear facilities must sample for beta particle and photon radioactivity. Systems must collect quarterly samples for beta emitters and iodine-131 and annual samples for tritium and strontium-90 at each SEP, beginning within one quarter after department notification. Systems already designated by the department as systems using waters contaminated by effluents from nuclear facilities must continue to sample until the department removes the sampling requirement.

- Gross beta particle activity. Quarterly monitoring for gross beta particle activity shall be based on the analysis of monthly samples or the analysis of a composite of three monthly samples. The former is recommended.

- Iodine-131. A composite of five consecutive daily samples shall be analyzed once each quarter for iodine-131. The department may require more frequent monitoring when iodine-131 is identified in the finished water.

- Strontium-90 and tritium. Annual monitoring for strontium-90 and tritium shall be conducted either by analyzing a composite of four consecutive quarterly samples or by analyzing four quarterly samples. The latter is recommended.

2. Reduced monitoring. If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity at a sampling point has an RAA (computed quarterly) less than or equal to 15 pCi/L (screening level), the department may reduce the monitoring frequency at that sampling point to every three years. Systems must collect all samples required in this subparagraph during the reduced monitoring period.

3. Data substitution. For systems in the vicinity of a nuclear facility, the department may allow a CWS to utilize environmental surveillance data collected by the nuclear facility in lieu of monitoring at the system's entry point(s), where the department determines such data is applicable. In the event that there is a release from a nuclear facility, systems that are using surveillance data must begin monitoring at the CWS SEP in accordance with 41.8(1) "f"(2) "1."

(4) Monitoring frequency waiver. A CWS designated by the department to monitor for beta particle and photon radioactivity cannot apply to the department for a waiver from the monitoring frequencies in 41.8(1) "f"(2) or (3).

(5) CWSs may analyze for naturally occurring potassium-40 beta particle activity from the same or an equivalent sample used for the gross beta particle activity analysis. Systems are allowed to subtract the potassium-40 beta particle activity value from the total gross beta particle activity value to determine if the screening level is exceeded. The potassium-40 beta

particle activity must be calculated by multiplying elemental potassium concentrations (in mg/L) by a factor of 0.82.

(6) If the gross beta particle activity minus the naturally occurring potassium-40 beta particle activity exceeds the appropriate screening level, a sample analysis must be performed to identify the major radioactive constituents present in the sample, and the appropriate doses must be calculated and summed to determine compliance with 41.8(1) “b”(2)“1,” using the formula in 41.8(1) “b”(2)“2.” Doses must also be calculated and summed for measured levels of tritium and strontium to determine compliance.

(7) Monitoring after an MCL violation. Systems must monitor monthly at the sampling point(s) that exceed the MCL in 41.8(1) “b”(2) beginning the month after the exceedance occurs. Systems must continue monthly monitoring until a system has established, by a rolling average of three monthly samples, that the MCL is being met. Systems that establish that the MCL is being met must return to quarterly monitoring until they meet the requirements of 41.8(1) “f”(2) or 41.8(1) “f”(3)“2.”

41.8(2) Reserved.

567—41.9(455B) Special monitoring.

41.9(1) *Sodium special monitoring.* Suppliers of water for CWSs shall collect and have analyzed one sample per source or plant to determine the sodium concentration in the distribution system. Systems utilizing multiple wells that draw raw water from a single aquifer may, with departmental approval, be considered as one source for determining the minimum number of samples to be collected. Sampling frequency and approved analytical methods are as follows:

a. SW systems. Systems utilizing a SW source, in whole or in part, shall monitor for sodium at least once annually at the SEP.

b. GW systems. Systems utilizing GW sources shall monitor at least once every three years at the SEP.

c. Increased monitoring. Suppliers may be required to monitor more frequently where sodium levels are variable or if certain types of treatment are used, such as cation exchange softening.

d. Analytical methodology. Sodium analyses shall be performed in accordance with 41.3(1)“e”(1).

e. Reporting. The sodium level shall be reported to the public by at least one of the following methods:

(1) The CWS shall notify the appropriate local public health officials of the sodium levels by written notice by direct mail within three months of receipt of the analytical results. A copy of each notice required by this subrule shall be sent to the department within ten days of its issuance.

(2) In lieu of the reporting requirement in this paragraph, the CWS shall include the sodium level in its annual consumer confidence report, pursuant to 567—subparagraph 40.7(4)“a”(11).

f. CWSs using cation exchange treatment. CWS utilizing cation exchange treatment shall collect one sodium sample of the finished water per year after all treatment. Analysis and reporting must be done in accordance with this subrule.

41.9(2) *Ammonia special monitoring.* Ammonia in GW is a precursor to the development of nitrite and nitrate in a drinking water system, which are both contaminants with acute health effects. This subrule lists the ammonia analytical methodology, sample preservation requirements, and holding times to be used for drinking water samples.

a. Analytical methodology. Analyses for ammonia shall be performed in accordance with the following methodology, with a detection limit of 0.1 mg/L ammonia as N:

Analytical Methodology for Ammonia

Methodology	EPA ¹	SM (20th edition)	ASTM	USGS ²	Other
Manual distillation at pH 9.5 ⁴ , followed by:	350.2	4500-NH3 B			973.49 ³
Titration	350.2				
Manual electrode	350.3	4500-NH3 D or E	D1426-93(B)		
Automated phenate	350.1	4500-NH3 G		I-4523-85	
Automated electrode					See note 5

¹“Methods for Chemical Analysis of Water and Wastes,” EPA-600/4-79-020, Revised March 1983 and 1979 where applicable.

²Fishman, M.J., et al., “Methods for Analysis of Inorganic Substances in Water and Fluvial Sediments,” U.S. Department of the Interior, Techniques of Water—Resource Investigations of the USGS, Denver, CO, Revised 1989, unless otherwise stated.

³“Official Methods of Analysis of the Association of Official Analytical Chemists,” 15th edition, 1990.

⁴Manual distillation is not required if the samples are very low in turbidity; however, manual distillation should be used whenever matrix interferences could be present in the sample, and will be required to resolve any controversies.

⁵Ammonia, Automated Electrode Method, Industrial Method Number 379-75 WE, February 19, 1976, Bran & Luebbe (Technicon) Auto Analyzer II, Bran & Luebbe Analyzing Technologies, Inc., Elmsford, NY 10523.

b. Sample preservation and holding time. Systems must collect a 500 mL grab sample into a plastic or glass bottle. The sample must be acidified at the time of collection to a pH of less than 2 by the addition of sulfuric acid (H₂SO₄) and refrigerated at 4 degrees Celsius. The sample must be analyzed within 28 days. If the sample is analyzed within 24 hours of collection, the sample acidification is not required.

567—41.10(455B) Department analytical results used to determine compliance.

Analytical results or other information compiled by departmental staff may be used to determine compliance with the MCLs, TTs, or ALs in this chapter or 567—Chapter 43 or for initiating remedial action with respect to these violations.

567—41.11(455B) Other monitoring.

41.11(1) Monitoring of interconnected PWS. When a PWS system supplies water to one or more other PWSs, the department may modify the monitoring requirements imposed by this chapter to the extent that the interconnection of the systems justifies treating them as a

single system for monitoring purposes. Any modified monitoring shall be conducted pursuant to a schedule specified by the department and concurred with by the EPA administrator.

41.11(2) *Monitoring of other contaminants.* If the department determines that other contaminants are present in a PWS, and the contaminants are known to pose, or scientific evidence strongly suggests that they pose, a threat to human health, a water supply may be required to monitor for such contaminants. The water supply will monitor at a frequency and in a manner which will adequately identify the magnitude and extent of the contamination. The monitoring frequency and sampling location will be determined by the department. All analytical results will be obtained using EPA-approved methods and submitted to the department for review and evaluation. Any monitoring required under this paragraph will be incorporated into an operation permit or an order.

These rules are intended to implement Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192.

**Iowa Department of Natural Resources
Environmental Protection Commission**

Decision Item

16. Chapter 43, “Water Supplies—Design and Operation” – Final Rule

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 43. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 43 implements federal health-based drinking water standards and minimum drinking water treatment requirements in Iowa, consistent with the federal Safe Drinking Water Act (SDWA). The chapter establishes the following for water supply systems: emergency procedures, engineering and construction standards and associated permitting, sanitary survey procedures, operation permitting and procedures, and certain drinking water treatment requirements. This chapter is necessary for the State of Iowa to maintain primacy for enforcing the SDWA since Iowa’s rules must be at least as stringent as the federal requirements. This chapter was reviewed and edited consistent with Executive Order 10.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 11, 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8617C. Two public hearings were held on January 30, 2025 and January 31, 2025.

Changes from NOIA: Four people attended the first public hearing, and four attended the second hearing. No public comments were received at the hearings. Two email comments and one comment letter were received during the public comment period. This final rule is substantially identical to the NOIA. Erroneous rule references were corrected in the final rule, and a subrule regarding recordkeeping was reinserted, as it was mistakenly omitted in the NOIA. Additional minor changes were made to the final rule based on the comments, including the removal of an erroneous phrase; the removal of an obsolete compliance schedule extension; the addition of units to Appendix A; and the correction of typos and additional erroneous rule references.

Effective Date of Final Rule: June 18, 2025

Carmily Stone, MPH, Water Supply Engineering Supervisor
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 43 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 43, “Water Supplies—Design and Operation,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3), 455B.173(3) and 455B.173(5) through 455B.173(10).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192 and the federal Safe Drinking Water Act (SDWA) as amended (42 U.S.C. §300f et seq.).

Purpose and Summary

New Chapter 43 implements federal health-based drinking water standards and minimum drinking water treatment requirements in Iowa. The chapter establishes the following for water supply systems: emergency procedures, engineering and construction standards and associated permitting, procedures for periodic sanitary surveys to ensure compliance with the federal Safe Drinking Water Act (SDWA), operation permitting and procedures, and certain drinking water treatment requirements for compliance with the SDWA. This chapter is necessary for the State of Iowa to maintain primacy for enforcing the federal SDWA since Iowa’s rules must be at least as stringent as the requirements. This chapter has been reviewed and edited consistent with Executive Order 10.

Public Comment and Changes to Rulemaking

Notice of Intended Action (NOIA) for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8617C**.

Two public hearings were held. The first public hearing was held on January 30, 2025 from 2:00 PM to 3:00 PM virtually via Zoom. The second public hearing was held on January 31, 2025 from 9:00 AM to 10:00 AM virtually via Zoom.

Four people attended the first public hearing, and four attended the second hearing. No public comments were received at the hearings. Two email comments and one comment letter were received during the public comment period.

This final rule is substantially identical to the NOIA. Erroneous rule references were corrected in the final rule, and the subrule regarding recordkeeping for enhanced *Cryptosporidium* treatment was reinserted, as it was mistakenly omitted in the NOIA. Additional minor changes were made to the final rule based on the comments, including the removal of an erroneous phrase from the paragraph concerning field surveys for source evaluations, as the phrase was mistakenly left in the revised paragraph in the NOIA; the removal of language regarding an obsolete compliance schedule extension that is nine years out of date; the addition of units to the header paragraph and tables in Appendix A; and the correction of typos and additional erroneous rule references.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 43 and adopt the following **new** chapter in lieu thereof:

CHAPTER 43

WATER SUPPLIES—DESIGN AND OPERATION

567—43.1(455B) General information.

43.1(1) *Emergency actions regarding water supplies.* When, in the opinion of the director, an actual or imminent hazard exists, a water supplier shall comply with the directives or orders of the director necessary to eliminate or minimize that hazard.

a. Water hauling on an emergency basis. A system that is providing finished drinking water hauled from another PWS must ensure the safety of the water in an emergency situation.

(1) Hauled water must come from a PWS currently regulated by the department and in compliance with 567—Chapters 40 through 43. Written department approval is required prior to the use of water from any PWS with a chronic health-based standard violation.

(2) The receiving PWS must have written department approval prior to the use of water from any PWS located in another state. The providing PWS must be in compliance with SDWA requirements.

(3) The hauled water must be disinfected with chlorine to ensure bacterial safety in the tanker, storage vessel, and distribution system. If the PWS providing the water does not disinfect, chlorine disinfectant must be added to the hauled water before use or storage at the receiving PWS. A minimum disinfectant residual of 2.0 mg/L as total chlorine or chloramines or 0.5 mg/L as free chlorine must be maintained in the tanker, storage vessel, and distribution system. If no disinfectant is used, the transported water must be boiled before any human consumptive use, which includes drinking, bathing, handwashing, oral hygiene, food preparation, dishwashing, ice making, or food processing.

(4) The tanker or water bladder must be approved for hauling or storing food grade materials and be sanitized in accordance with AWWA C652 prior to first use.

(5) Both filling and dispensing devices must include backflow protection to protect the source water, such as an air gap, double-check-valve assembly, or reduced pressure zone device.

(6) Total coliform bacteria samples must be collected from the tanker, storage tank or bladder, and distribution system as follows:

1. Tanker: one sample after cleaning and one before first potable water use.
2. Storage tank or bladder: one sample after cleaning and one before first use.
3. Distribution system: one sample initially before first use and with each new load of water or once per month, whichever is more frequent.

(7) Records must be maintained and available for inspection for five years.

b. Water hauling on a nonemergency basis. A system that is providing finished drinking water hauled from another PWS must comply with the conditions in its operation permit.

43.1(2) *Prohibition on the use of lead.* Any pipe, pipe fitting, plumbing fitting, plumbing fixture, solder, or flux that is used in the installation or repair of any public water supply system (PWS) or any plumbing in a facility providing water for human consumption that is connected to a PWS shall be lead free as defined in ~~567—40.2~~(455B). This shall not apply to leaded joints necessary for the repair of cast iron pipe.

a. The following items are exempted from the prohibition, depending upon their use in the system: pipes, pipe fittings, plumbing fittings, or fixtures, including backflow preventers, that are used exclusively for nonpotable services such as manufacturing, industrial processing, irrigation, outdoor watering, or any other uses where the water is not anticipated to be used for human consumption.

b. Additional products that could be used exclusively for nonpotable services include:

(1) Products that are clearly labeled on the product, package, or tags with a phrase such as “not for use with water for human consumption” or another phrase that conveys the same meaning in plain language;

(2) Products that are incapable of use in potable services with other products that would be needed to convey water for potable uses; or

(3) Products that are plainly identifiable and marketed as being solely for a use other than the conveyance of water. These other uses include conveyance of air, chemicals other than water, hydraulic fluids, refrigerants, gases, or other nonwater fluids.

c. The following items are exempted from the prohibition: toilets, bidets, urinals, fill valves, flushometer valves, tub fillers, shower valves, fire hydrants, service saddles, water distribution main gate valves two inches in diameter or larger, clothes washing machines, emergency drench showers, emergency face wash equipment, eyewash devices, fire suppression sprinklers, steam capable clothes dryers, and sump pumps.

43.1(3) *Use of noncentralized treatment devices.*

a. Community PWS. CWSs shall not use bottled water, point-of-use (POU) or point-of-entry (POE) devices to achieve permanent compliance with a maximum contaminant level (MCL), treatment technique (TT), or action level (AL) requirement in 567—Chapters 41 and 43.

b. Noncommunity PWS. The department may allow NCWSs to use POU devices to achieve MCL compliance, provided the contaminant does not pose an imminent threat to health (such as bacteria) nor place a sensitive population at risk (such as infants for nitrate or nitrite).

c. Reduced monitoring requirements. Bottled water, POU, or POE devices cannot be used to avoid the monitoring requirements of 567—Chapters 41 and 43, but the department may allow reduced monitoring requirements in specific instances.

d. Bottled water requirements. The department may require a PWS exceeding an MCL, TT, or AL requirement in 567—Chapters 41 and 43 to use bottled water as a condition of an interim compliance schedule or as a temporary measure to avoid an unreasonable health risk. Any bottled water must meet the federal Food and Drug Administration (FDA) bottled water standards in 21 CFR §165.110. The system must meet the following requirements:

(1) Monitoring program. Submit a monitoring program for bottled water to the department. The monitoring program must provide reasonable assurances that the bottled water complies with all MCLs, TT, or AL requirements in 567—Chapters 41 and 43. The PWS must monitor a representative sample of bottled water for all contaminants regulated under 567—Chapters 41 and 43 the first quarter that it supplies the bottled water to the public, and annually thereafter. Monitoring program results shall be provided to the department annually. If the bottled water is from a CWS that currently meets all of the federal SDWA requirements, the monitoring requirements of this subparagraph shall be waived by the department. The specific supplier of the bottled water must be identified in order for the department to waive the monitoring requirements.

(2) Certification. The PWS must receive a certification from the bottled water company that the bottled water supplied has been taken from an approved source; the bottled water company has conducted monitoring in accordance with 43.1(3) “b”(1); and the bottled water meets MCL, TT, or AL requirements in 567—Chapters 41 and 43. The PWS shall provide the certification to the department the first quarter after it supplies bottled water and annually thereafter.

(3) Provision of bottled water. The PWS is fully responsible for the provision of sufficient quantities of bottled water to every person supplied by the PWS via door-to-door bottled water delivery.

43.1(4) *Cross-connection control.* To prevent backflow or backsiphonage of contaminants into a PWS, connection shall not be permitted between a PWS and any other system that does not meet the monitoring and drinking water standards of this chapter, except as provided in 43.1(4) “a,” “b,” or “c.”

a. Piping and plumbing systems. Piping systems or plumbing equipment carrying nonpotable water, contaminated water, stagnant water, liquids, mixtures, or waste mixtures shall not be connected to a PWS unless properly equipped with an antisiphon device or backflow preventer acceptable to the department.

b. Water loading stations. The Ten States Standards contain the construction standards regarding water loading stations.

c. Contamination as a result of cross-connection. When, in the department’s opinion, evidence clearly indicates the source of contamination within a system is the result of a cross-connection, the department may require a PWS to provide public notice (PN), identify and eliminate the connection, and implement a systemwide cross-connection program.

43.1(5) *Requirement for certified operator.* The department maintains a list of certified operators in accordance with 567—Chapter 81. The list includes the operator’s name,

certification classification (Water Treatment, Water Distribution, or Grade A Water System), and grade (A, I, II, III, or IV), and is periodically updated during the year.

a. CWS and NTNC systems. All CWSs and NTNCs must have a certified operator in direct responsible charge (DRC) of the treatment and distribution systems, pursuant to 567—Chapters 40 through 44 and 81.

b. TNC systems.

(1) Any TNCs owned by the state or federal government or using a surface water (SW) or IGW source must have a certified operator in DRC of the treatment and distribution systems, pursuant to 567—Chapters 40 through 44 and 81.

(2) Any TNC that uses chlorine dioxide as a disinfectant or oxidant must have a certified operator in DRC of the system, pursuant to 567—Chapter 81.

(3) The department may require any TNC to have a certified operator in DRC.

43.1(6) *Return water in PWSs.* Steam condensate, cooling water from engine jackets, water used in conjunction with heat exchange devices, or treated wastewater shall not be returned to a PWS.

43.1(7) *Sanitary surveys.* Each PWS must have a periodic sanitary survey conducted by the department or its designee. Systems must provide, upon request, any information that will enable the department to conduct the sanitary survey.

a. A sanitary survey is a records review and on-site inspection that evaluates a system's ability to produce and distribute safe drinking water and identifies improvements necessary to maintain or improve drinking water quality. A survey includes review and inspection of the following areas: water source; treatment facilities; distribution systems; finished water storage; pumps, pump facilities, controls and other equipment; monitoring, reporting, and data verification, including self-monitoring; system operation and management; maintenance; operator certification; and records.

b. A sanitary survey report is issued by the department or its designee, and may include both enforceable required actions for remedying significant deficiencies and nonenforceable recommended actions.

c. Sanitary surveys shall be conducted at least once every five years for TNCs and NTNCs and once every three years for CWSs.

d. The department or its designee shall provide the PWS with a written notice describing any significant deficiencies identified during the survey no later than 30 days after identification of the deficiency. The notice may be included in the sanitary survey report and may specify corrective actions and deadlines for completion of corrective actions. Systems must respond in writing to significant deficiencies outlined in the sanitary survey report or written notice and indicate how and on what schedule the system will address the noted deficiencies, either within 30 days of receiving the survey report or notice or within the time period specified in the report or notice. All systems must take the steps necessary to address significant deficiencies identified in a sanitary survey report or written notice that are within the control of the system and its governing body.

567—43.2(455B) PWS operation permit.

43.2(1) Fees.

a. *Annual fee.* A fee for the operation of a PWS shall be paid annually. The fee will not be prorated and is nonrefundable. The fee shall be based on the population served. The fee shall be the greater of \$25 per year or \$0.14 multiplied by the total population served by the PWS for all CWSs and NTNCs. The fee shall be \$25 per year for all TNCs. Where a system provides water to another PWS (consecutive PWS) that is required to have an operation permit, the population of the recipient system shall not be counted as a part of the PWS providing the water.

b. Fee notices. The department will send annual notices to PWSs at least 60 days prior to the operation fee due date.

c. Fee payments. The annual operation fee must be paid to the department by September 1 each year.

d. Fee adjustment. The department may adjust the per capita fee payment by up to +/- \$0.02 per person served so as to achieve the targeted revenue of \$350,000 during each fiscal year. The commission must approve any per capita fee rate above \$0.14 per person. Any fee adjustment shall comply with Iowa Code section 455B.183A.

e. Exempted PWSs. PWSs located on Indian lands are exempt from the fee requirements.

f. Late fees. When the owner of a PWS fails to remit payment of fees by September 1, the department will notify the system by a single notice of violation and assess a late fee of \$100. The department may thereafter issue an administrative order pursuant to Iowa Code section 455B.175(1) or request a referral to the attorney general under Iowa Code section 455B.175(3).

43.2(2) *Operation permit requirement.* Except as provided in 43.2(3), no person shall operate any PWS or part thereof without, or contrary to any condition of, an operation permit issued by the director.

43.2(3) *Operation permit applications.* The owner of any PWS or part thereof must submit an application for an operation permit. Upon submission of a completed application form, the time requirement for having a valid operation permit is automatically extended until the application has either been approved or disapproved by the director.

a. Application forms and timeline.

(1) Applications for operation permits shall be made on forms provided by the department.

(2) An application shall be filed at least 90 days prior to the date operation is scheduled to begin unless a shorter time is approved by the director.

(3) The director shall issue or deny operation permits within 60 days of receipt of a completed application, unless a longer period is required and the applicant is so notified.

(4) The director may require the submission of additional information deemed necessary to evaluate an application.

(5) An application that is incomplete or otherwise deficient shall not be processed until the applicant has supplied the missing information or otherwise corrected the deficiency.

b. Identity of signatories. The person who signs the application for an operation permit shall be:

(1) Corporation. In the case of a corporation, a principal executive officer of at least the level of vice president. The corporation has the option of appointing a designated signatory to satisfy this requirement.

(2) Partnership. In the case of a partnership, a general partner.

(3) Sole proprietorship. In the case of a sole proprietorship, the proprietor.

(4) Public facility. In the case of a municipal, state or other public facility, by either the principal executive officer or the ranking elected official.

c. Late applications. When the owner of a PWS fails to make timely application, the department will notify the system by a single notice of violation and may thereafter issue an administrative order pursuant to Iowa Code section 455B.175(1) or request a referral to the attorney general under Iowa Code section 455B.175(3).

43.2(4) *Operation permit conditions.*

a. Conditions. Operation permits may contain conditions deemed necessary by the director to ensure compliance with all applicable department rules, to ensure that a PWS is properly operated and maintained, to ensure that potential hazards to the water consumer are eliminated promptly, and to ensure compliance with the SDWA.

b. Compliance schedule. Where one or more MCLs, TTs, ALs, or designated HAs cannot be met immediately, a compliance schedule for achieving compliance with standards may be included in a permit. A compliance schedule requiring alterations in accordance with the standards for construction in 43.3(1) and 43.3(2) may also be included for any supply that, in the opinion of the director, contains a potential hazard.

c. Treatment. If the department determines that a treatment method identified in 43.3(10) is technically feasible, the department may require a system to install or use that treatment method in connection with a compliance schedule, pursuant to 43.2(4) “*b.*” The department’s determination shall be based upon studies by the system and other relevant information.

43.2(5) *Notification of change.* The owner of a PWS shall notify the director within 30 days of any change in conditions identified in the permit application. This notice does not relieve the owner of the responsibility to obtain a construction permit as required by 567—43.3(455B).

43.2(6) *Renewal.* The department may issue operation permits for durations of up to five years. Operation permits must be renewed prior to expiration in order to remain valid. The renewal date shall be specified in the permit or in any renewal. Application for renewal must be submitted in accordance with 43.2(3).

43.2(7) *Denial, modification, or suspension.* The director may deny a new or renewal of, modify, or suspend, in whole or in part, any operation permit for good cause. Denial of a new permit, renewal of an existing permit, or modification of a permit may be appealed to the commission pursuant to 567—Chapter 7. Suspension or revocation may occur after hearing, pursuant to 567—Chapter 7. Good cause includes:

- a.* Violation of any term or condition of the permit.
- b.* Failure to pay the fee in accordance with 43.2(1).

c. Obtaining a permit by misrepresentation of fact or failure to disclose fully all material facts.

d. A change in any condition that requires either a permanent or temporary modification of a permit condition.

e. Failure to submit records and information the director may require both generally and as a condition of the operation permit in order to ensure compliance with permit conditions.

f. Violation of any requirements in, or significant noncompliance with, 567—Chapters 40 through 43, including noncompliance with applicable MCLs, TTs, or ALs.

g. Inability of a system to either achieve or maintain technical, managerial, or financial viability, as determined in 567—43.8(455B).

567—43.3(455B) PWS construction.

43.3(1) *PWS standards.*

a. Any PWS that does not meet the drinking water standards in 567—Chapters 41 and 43 shall make alterations necessary to comply with the drinking water standards in accordance with the construction standards contained in this rule unless the PWS has been granted a waiver from an MCL or TT as a provision of its operation permit pursuant to this chapter, provided that the PWS meets the schedule established pursuant to this chapter.

b. Any PWS that, in the opinion of the director, contains a potential hazard shall make alterations necessary to eliminate or minimize the hazard in accordance with the construction standards in this rule.

c. A PWS that is not operating within the construction standards may be required by the department via a compliance schedule to upgrade the deficient areas of the system before a construction permit will be issued for any work that does not address the current deficiencies.

43.3(2) *Construction standards.*

a. The construction standards for a drinking water project are the Ten States Standards, the AWWA Standards as adopted through 2023, and 43.3(7) through 43.3(9). In any conflict between the Ten States Standards, and the AWWA Standards, and 43.3(7) through 43.3(9), the Ten States Standards, 43.3(2), and 43.3(7) to 43.3(9) shall prevail. Additional standards include the following:

(1) Polyvinyl chloride (PVC) pipe manufactured in accordance with ASTM D2241, AWWA C900, AWWA C905, ASTM F1483, or AWWA C909 may be used for water main construction. The maximum allowable pressure for PVC or polyethylene pipe shall be determined based on a safety factor of 2.0 and a surge allowance of no less than two feet per second.

(2) For CWS groundwater (GW) systems, a minimum of two wells shall be provided, unless the system demonstrates to the department's satisfaction that a single well will provide a reliable and adequate source. For NTNC and TNC GW systems, a single well is acceptable.

(3) Separation of water mains from sanitary and combined sewers.

1. Horizontal separation of water mains from gravity sanitary and combined sewers. Water mains shall be separated from gravity sanitary and combined sewer mains by a horizontal distance of at least ten feet measured edge to edge unless the bottom of the water main is at least 18 inches above the top of the sewer, and either:

- The water main is placed in a separate trench, or
- The water main is located on a bench of undisturbed earth at a minimum horizontal separation of three feet from the sewer.

If it is not possible to obtain a horizontal separation of three feet and a vertical separation of 18 inches between the bottom of the water main and the top of the sewer, a linear separation of at least three feet shall be provided, and one of the following shall be utilized:

- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight end seals, or

- The sewer shall be constructed of water main materials.

The separation distance (SD) between the water main and the sewer shall be the maximum feasible in all cases.

2. Horizontal separation of water mains from sanitary sewer force mains. Water mains shall be separated from sanitary sewer force mains by a horizontal distance of at least ten feet measured edge to edge unless the sanitary sewer force main is constructed of water main materials and the water main is laid at least four feet horizontally from the sanitary sewer force main. The SD between the water main and the sanitary sewer force main shall be the maximum feasible in all cases.

3. Vertical separation of water mains from sanitary and combined sewer crossovers. Vertical separation of water mains crossing over any sanitary or combined sewers shall be at least 18 inches when measured from the bottom of the water main to the top of the sewer. If it is not possible to maintain the required vertical separation, one of the following shall be utilized:

- The bottom of the water main shall not be placed closer than six inches above the top of a sewer, or

- The top of the water main shall not be placed closer than 18 inches below the bottom of a sewer.

When a water main crosses below or less than 18 inches above a sanitary or combined sewer, one of the following shall be utilized within approximately ten feet measured edge to edge horizontally, centered on the crossing, with joints located as far as possible from the point of crossing:

- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight ends, or

- Sewer pipe of water main material shall be installed.

The SD shall be the maximum feasible in all cases. Wherever a water main crosses a sanitary or combined sewer, the water main and sanitary or combined sewer pipes must be adequately supported. A low permeability soil shall be used for backfill material within ten feet of the point of crossing along the water main.

4. Horizontal separation of water mains from sanitary and combined sewer manholes. No water pipe shall pass through or come in contact with any part of a sanitary or combined sewer manhole. A minimum horizontal separation of three feet shall be maintained.

(4) Separation of water mains from storm sewers.

1. Horizontal separation of water mains from gravity storm sewers. Water mains shall be separated horizontally from gravity storm sewers by at least ten feet measured edge to edge. If it is not possible to maintain the required horizontal separation of ten feet, a minimum of three feet of separation shall be maintained and one of the following shall be utilized within ten feet measured edge to edge:

- The water main shall be constructed of ductile iron pipe with gaskets impermeable to hydrocarbons, or

- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight end seals, or

- Storm sewer pipe of water main material shall be installed, or

- Reinforced concrete pipe storm sewers shall be constructed with gaskets manufactured in accordance with ASTM C443.

2. Vertical separation of water mains from storm sewer crossovers. Water mains shall be vertically separated from storm sewers by at least 18 inches between the outside edges of the

water main and the storm sewer. The SD shall be the maximum feasible in all cases. In all cases where a water main crosses a storm sewer, the water main and storm sewer pipes must be adequately supported. A low permeability soil shall be used for backfill material within ten feet of the point of crossing along the water main. If it is not possible to obtain 18 inches of vertical separation where the water main crosses above a storm sewer, a minimum of 6 inches vertical separation shall be maintained and one of the following shall be utilized within ten feet measured edge to edge horizontally, centered on the crossing:

- The water main shall be constructed of ductile iron pipe with gaskets impermeable to hydrocarbons, or
- The water main shall be enclosed in watertight casing pipe with an evenly spaced annular gap and watertight end seals, or
- Storm sewer pipe of water main material shall be installed, or
- Reinforced concrete pipe storm sewers shall be constructed with gaskets manufactured in accordance with ASTM C443.

(5) All water mains, including those not designed to provide fire protection, shall be sized based on flow demands and pressure requirements. For regional water systems and for major distribution system upgrades, a hydraulic analysis may be required as part of the project submittal. Systems shall be designed to maintain a minimum pressure of 20 psi at ground level at all points in the distribution system under all conditions of flow. The normal working pressure in the distribution system should be approximately 60 to 80 psi and should not be less than 35 psi.

b. When engineering justification satisfactory to the director is provided substantially demonstrating that a waiver from the construction standards will result in equivalent or improved effectiveness, a waiver may be granted by the director. A waiver denial may be appealed to the commission pursuant to 567—Chapter 7. Waiver requests for projects

qualifying for a waiver from the engineering requirement of 43.3(4) may be made without the retained services of a professional engineer.

43.3(3) *Construction permits.* No person shall construct, install or modify any project without first obtaining, or contrary to any condition of, a construction permit issued by the director or by a local public works department authorized to issue permits under 567—Chapter 9, except as provided in this chapter. Construction permits are not required for POU treatment devices installed by a noncommunity water system (NCWS), except for those devices required by the department to meet a drinking water standard pursuant to 567—Chapters 41 and 43. No construction permit will be issued for a new PWS without a completed, department-approved viability assessment, which demonstrates that the system is viable pursuant to 567—43.8(455B).

a. Issuance conditions. A construction permit shall be issued by the director if the director concludes that the project will comply with department rules. Project construction must begin within one year from the permit issuance date; if it does not, the permit is no longer valid. If construction is ongoing and continuous (aside from weather delays) and the permitted project cannot be completed within one year, the permit shall remain valid until the project is completed. The department may extend a permit for a multiphase project, for a maximum two additional years.

b. Applications. A construction permit application for any project shall be submitted to the department at least 30 days prior to the proposed date for commencing construction or awarding contracts. This requirement may be waived when the department determines that an imminent health hazard exists to a PWS's consumers. Under this waiver, construction, installation, or modification may be allowed by the department prior to review and issuance of a permit if all the following conditions are met:

- (1) The construction, installation, or modification will alleviate the health hazard;

(2) The construction is done in accordance with the construction standards, pursuant to 43.3(2);

(3) Plans and specifications are submitted within 30 days after construction;

(4) A professional engineer, licensed in the state of Iowa, supervises the construction; and

(5) The supplier of water receives approval of this waiver prior to any construction, installation, or modification.

c. Fees. A nonrefundable fee, as noted in this paragraph, shall be submitted with a construction permit application.

(1) Construction permit fees. The fee shall be determined based upon the total length of water main plus the non-water-main-related construction costs, calculated as follows:

1. Water mains (minimum \$100; maximum \$5,000):

Length of permitted water main	Rate
First 1,000 ft.	\$100
Next 19,000 ft.	\$0.10/ft.
Next 300,000 ft.	\$0.01/ft.
Over 320,000 ft.	No additional charge

2. Non-water-main-related construction costs, including source, treatment, pumping, storage and waste handling (minimum \$100; maximum \$16,000):

Estimated construction cost	Rate
First \$50,000	\$100
Next \$950,000	0.2% of estimated construction cost
Next \$14,000,000	0.1% of estimated construction cost
Over \$15,000,000	No additional charge

(2) “As-built” construction fees. “As-built” construction is defined as construction that occurred before a construction permit is issued. The fee shall be calculated according to 43.3(3) “c”(1), plus an additional fee of \$200. The fee for water main projects permitted in accordance with 43.3(3) “e” shall be calculated in accordance with 43.3(3) “c”(1); however, the additional “as-built” fee of \$200 shall not be assessed for these projects.

(3) Other fees. A fee for change orders, addenda, or permit supplements will only be charged if the aggregate of the changes approved for the project to date causes the total project

construction cost to exceed the original project construction cost by at least 5 percent. For water main extensions, the fee will be charged if the total length of water main exceeds the original approved length by 5 percent. The request for a time extension is a flat fee.

Other Categories	Rate
Change orders, addenda, and permit supplements for water mains	\$0.10/ft. of additional water main, minimum: \$50
Change orders, addenda, and permit supplements for non-water-main-related construction costs	0.2% of additional non-water-main-related construction costs, minimum: \$50
Request for time extension	\$50

(4) Calendar year fee cap. The total amount of construction permit fees for a PWS owner during any calendar year shall not exceed \$5,000 for water mains and \$16,000 for non-water-main-related construction projects.

d. Water well construction. All water well construction must be performed by a certified well contractor in accordance with 567—Chapter 82. It is the responsibility of the PWS and certified well contractor to ensure that a public well construction permit has been issued by the department prior to initiation of well construction and to ensure that all well construction is performed in accordance with this chapter.

e. Minor water main construction permit. A PWS may obtain a minor water main construction permit from the department for construction or replacement of minor water mains that serve additional users. By obtaining this permit, the system is able to construct, extend, or replace new or existing minor water mains without obtaining an individual construction permit for each specific water main. The permit shall allow construction or replacement of minor water mains that do not exceed six inches in diameter and, in aggregation, do not increase the average daily demand (in gallons per day) of the PWS by more than 5 percent over the duration of the permit.

The additional users must have been included in the system's approved hydraulic analysis. The water demands of the additional users must be consistent with the water demands in the approved hydraulic analysis.

(1) A minor water main construction permit shall be issued subject to the following conditions:

1. The system has approved standard specifications for water main construction filed with the department;
2. The system has adequate source capacity and, where treatment is provided, adequate treatment plant capacity to meet the peak day demand of all existing users and the proposed additional users covered under the permit;
3. The system has adequate storage capacity to meet the average day demand of all existing users and the proposed additional users covered under the permit; and
4. The system submits an application for a minor water main construction permit to the department 90 days before the anticipated first use of the permit. Construction shall not commence prior to the issuance of a permit.

(2) An application for minor water main construction permit shall include:

1. An up-to-date hydraulic analysis of the system, prepared by a licensed professional engineer (unless one is already on file with the department). The hydraulic basis of flow (gallons per minute per connection) used in the analysis must be acceptable to the department.

A hydraulic analysis shall include:

- All existing water mains within the system;
- All proposed water mains intended to be covered by the permit;
- A demonstration that the system has adequate hydraulic capacity to serve the existing and new users under peak flow conditions without causing the pressure to fall below 20 psi anywhere within the system;
- The location of all potential users of the system;
- The diameter of all existing and proposed pipes;
- The projected system flows; and

- The static and dynamic pressures anticipated throughout the system with the addition of the new users incorporated in the analysis.

2. A completed Schedule 1b, Form 542-3151.

(3) The PWS must submit completed Schedule 2c, Form 542-3152, prior to the construction or replacement of each minor water main covered by a permit. Each water main covered by a permit must have either been included in the previously submitted hydraulic analysis or must be included in an update to the hydraulic analysis, submitted with Schedule 2c. If an update to the hydraulic analysis is submitted, it must include all portions of the distribution system potentially affected by the new construction.

(4) By January 31 of the year following permit issuance, the PWS shall submit the following to the department:

1. A complete set of plans for all water main extensions constructed under the permit, prepared and submitted by a licensed professional engineer.

2. Completed Schedules 1a, 1c, and 2a.

3. The construction permit fee calculated in accordance with 43.3(3)“c”(1). The fee calculation shall be based upon the total length of water main constructed under a permit. For the purpose of calculating the total fee amount in accordance with 43.3(3)“c”(4), the fee shall be credited to the calendar year in which it was received by the department.

(5) A permit shall contain conditions deemed necessary by the director to ensure compliance with all applicable department rules.

(6) The director may modify a permit, in whole or in part, at any time. The director may suspend or revoke a permit, in whole or in part, at any time by providing written notice to the permit holder, and is not obligated to renew the permit. Cause for modification, suspension, or revocation of a permit includes but is not limited to:

1. Violation of any term or condition of a permit;

2. Misrepresentation of fact or failure to disclose fully all material facts in order to obtain a permit;

3. Failure to submit department-required records and information, both generally and as condition of a permit;

4. Failure to submit timely reports from previous permits; or

5. Failure to construct in accordance with either approved construction standards, in accordance with 43.3(2), or with the system's approved standard specifications.

(7) A minor water main construction permit expires on December 31 of the year in which it is issued.

(8) No waiver to the construction standards is allowed under a minor water main construction permit, except for AWWA C651 Section 5.1, Sampling Frequency. If a waiver to the construction standards is needed, the system must apply for an individual construction permit following the procedures in 567—subrule 40.4(1).

43.3(4) *Waiver from engineering requirements.* The requirement for preparation of plans and specifications by a licensed professional engineer may be waived for the following types of projects, provided the proposed improvement complies with the construction standards. This waiver does not relieve the supplier of water from meeting the application and permit requirements of 43.3(3), except that the applicant need not obtain a written permit prior to installing the equipment.

a. Simple chemical feed, if all the following conditions are met:

(1) The improvement consists only of a simple chemical solution application or installation, which in no way affects the performance of a larger treatment process, or is included as part of a larger treatment project;

(2) The chemical application is by a positive displacement pump, the acceptability of said pump to be determined by the department;

(3) The supplier of water provides the department with a schematic of the installation and manufacturer's specifications sufficient to determine if the simple chemical feed installation meets the applicable construction standards, pursuant to 43.3(2);

(4) The final installation is approved based on an on-site inspection by department staff; and

(5) The installation includes only the prepackaged delivery of chemicals (from sacks, containers, or carboys) and does not include the bulk storage or transfer of chemicals (from a delivery vehicle).

b. Self-contained treatment unit, if all the following conditions are met:

(1) The equipment can be purchased "off the shelf"; is self-contained, requiring only a piping hookup for installation; and operates throughout a range of 35 to 80 psi;

(2) The plant is designed to serve no more than an average of 250 individuals per day;

(3) The supplier of water provides the department with a schematic of the installation, manufacturer's specifications, or other necessary information, sufficient to determine if the installation of the self-contained treatment unit will alleviate an MCL violation; and

(4) The final installation is approved based on an on-site inspection by department staff.

43.3(5) *Project planning and design basis.* An engineering report describing the project design basis must be submitted to the department either with the project or in advance of construction.

a. The report must contain information and data necessary to determine:

(1) Project conformance with the construction and operation standards in 43.3(2), and

(2) The adequacy of the project to supply water in sufficient quantity, at sufficient pressure, and of a quality that complies with drinking water standards in 567—Chapters 41 and 43.

b. The report must supply pertinent information as set forth in part one of the Ten States Standards.

c. The department may reject receipt or delay review of the plans and specifications until an adequate design basis is received.

43.3(6) *Standard specifications for water main construction.* Standard specifications for water main construction by an entity may be submitted to the department or an authorized local public works department for approval.

a. An approval shall apply to all future water main construction by or for that entity for which plans are submitted with a statement requiring construction in accordance with all applicable approved standard specifications unless the standards for PWSs specified in 43.3(2) are modified subsequent to an approval and the standard specifications would not be approvable under the modified standards.

b. Where approved specifications are on file, construction may commence 30 days following plan receipt by the department or an authorized local public works department, if no response has been received indicating construction shall not commence until a permit is issued.

43.3(7) *Site and monitoring requirements for new raw water source(s) and underground finished water storage facilities, and water supply separation distances (SDs).*

a. *Site approval.* The site for each proposed raw source or finished water below-ground level storage facility must be approved by the department prior to the submission of plans and specifications.

b. *Site approval criteria.* A site may be approved if the director concludes that the criteria in this paragraph are met.

(1) Groundwater (GW) source. GW wells shall be planned and constructed to adapt to the geologic and GW conditions of the proposed site to ensure production of water that is both microbially safe and free of substances that could cause harmful human health effects. GW wells must meet the following requirements:

1. Drainage must be directed away from a well in all directions for a minimum radius of 15 feet.

2. A well site must meet the minimum SDs from contamination sources specified in Table A in 43.3(7) “d.”

3. After a well site has received preliminary department approval, the owner of the proposed well must submit, as part of the construction permit application, proof of legal control of the land for a 200-foot radius around the well, through purchase, lease, easement, ordinance, or other similar means. Legal control must be maintained by the PWS for the life of the well. The SDs specified in Table A in 43.3(7) “d” must be maintained for the life of the well as legal control allows. However, if the proposed well is for an existing NCWS and is replacing an existing well that either does not meet the current standards or is in poor condition, the 200-foot legal control requirement may be waived by the department, provided that:

- The proposed well is located on the best available site;
- The existing facility does not have adequate land to provide the 200-foot control zone;
- The owner has attempted to obtain legal control without success; and
- There is no other PWS available to which the supply could connect.

4. No GW well shall be constructed within the projected plume of any known anthropogenic GW contamination without the department’s written approval. The department may allow well construction within a contamination plume if an applicant can provide treatment that ensures all drinking water standards are met and ensures that the pumpage of the proposed well will not cause plume migration that impacts the water quality of other nearby wells. An applicant must demonstrate, using a hydrogeologic model acceptable to the department, that the time of transport is greater than two years for any viral, bacterial, or other microorganism contaminant and greater than ten years for all chemical contaminants. The

projected plume modeling must account for the proposed well pumpage rate. The department may require additional construction standards for these situations to ensure protection of the GW from contamination.

5. The department may require that an identification tag be applied to each GW well and may supply the numbered tag. The responsibility for ensuring that the tag is properly attached to the well is with the certified water well contractor for new wells and with the department for existing wells.

(2) Surface water (SW) source.

1. An applicant must submit proof that a proposed SW source can, through readily available treatment methodology, comply with 567—Chapters 41 and 43, and that the SW source is adequately protected against potential health hazards including, but not limited to, point source discharges, hazardous chemical spills, and the potential sources of contamination listed in Table A in 43.3(7) “d.”

2. After a SW impoundment has received preliminary department approval for use as a raw water source, the owner of the PWS shall submit proof of legal control through ownership, lease, easement, or other similar means, of contiguous land for a distance of 400 feet from the shoreline at the maximum water level. Legal control shall be for the life of the impoundment and shall control location of sources of contamination specified in Table A in 43.3(7) “d” within the 400-foot distance. Proof of legal control should be submitted with the construction permit application and shall be submitted prior to issuance of a construction permit.

c. New source water monitoring requirements. Water quality monitoring shall be conducted on all new water sources and results submitted to the department prior to placing the new water source into service.

(1) All sources. Water samples shall be collected from each new water source and analyzed for all appropriate contaminants, as specified in 567—Chapter 41, consistent with the particular system classification. If multiple new sources are being added, sample compositing (within a single system) shall be allowed in accordance with the composite sampling requirements in 567—Chapter 41. A single sample may be allowed to meet this requirement, if approved by the department. Subsequent water testing shall be conducted consistent with the system's operation permit monitoring schedule.

(2) GW sources. Water samples from GW sources shall be collected at the conclusion of the drawdown/yield test pumping procedure, with the exception of bacteriological monitoring. Bacteriological monitoring must be conducted after disinfection of each new well and subsequent pumping of the chlorinated water to waste. Water samples must be analyzed for ammonia and should be analyzed for alkalinity, pH, calcium, chloride, copper, hardness, iron, magnesium, manganese, potassium, silica, specific conductance, sodium, sulfate, filterable and nonfilterable solids, and zinc.

(3) SW sources. Water samples from SW sources should be collected prior to the design of the SW treatment facility and shall be collected and analyzed prior to utilization of the source. Samples shall be collected during June, July, and August. In addition, quarterly monitoring shall be conducted in March, June, September, and December at a location representative of the raw water at its point of withdrawal. Samples shall be analyzed for turbidity, alkalinity, pH, calcium, chloride, color, copper, hardness, iron, magnesium, manganese, potassium, silica, specific conductance, sodium, sulfate, filterable and nonfilterable solids, carbonate, bicarbonate, algae (qualitative and quantitative), total organic carbon (TOC), five-day biochemical oxygen demand, dissolved oxygen, surfactants, nitrogen series (organic, ammonia, nitrite, and nitrate), and phosphate.

d. Separation distances (SDs). The minimum lateral SDs between wells and belowground finished water storage facilities and structures or sources of contamination are specified below in Table A. Additional legal and conveyance-specific SD requirements are specified for public wells in 43.3(7) “b” and for water mains in 43.3(2) “a”(3) and 43.3(2) “a”(4).

(1) There shall be no physical connection between a public or private potable water supply system and a sewer, or appurtenance thereto, that would permit the passage of any sewage into a potable water supply.

(2) When a proposed well is located in an existing well field and will withdraw water from the same aquifer as the existing well(s), the individual SDs listed in Table A may be waived if substantial historical data are available indicating that no contamination has resulted.

(3) Greater SDs than those listed in Table A may be required where necessary to ensure that no adverse effects to systems or the existing environment will result. Lesser SDs may be considered if detailed justification is provided by the applicant’s engineer showing that no adverse effects will result from the lesser distance and the regional department field office staff recommend approval of the lesser distance. Such exceptions must be based on special construction techniques or localized geologic or hydrologic conditions.

TABLE A: PUBLIC WELL AND BELOWGROUND LEVEL FINISHED WATER STORAGE FACILITY SEPARATION DISTANCES

Structure or Source of Contamination	Required Minimum Lateral Distance, as Measured Horizontally on the Ground Surface, in feet		
	Public Wells		Belowground level finished water storage facility
	Deep Well ¹	Shallow Well ¹	
PRIVATE WELLS:			
Private wells (new or existing, deep or shallow)	200	400	50
GHEX loop boreholes ²	200		50
WASTEWATER STRUCTURES:			
Land Disposal of Treated Wastes:			
Irrigation of wastewater	200	400	50
Land application of solid wastes ³	200	400	50
Land application of septage ⁴	500		50
Water treatment plant waste discharged to the ground surface	50		50
Other sanitary and industrial discharges to the ground surface	400		50
Wastewater Disposal Systems:			
Water treatment plant waste treatment structures ⁵	50		50

PSDSs and onsite treatment systems – closed portion ⁶	100	200	50
PSDSs and onsite treatment systems – open portion ⁶	200	400	50
Lagoons ⁷	400	1000	50
Mechanical wastewater treatment plants ⁸	200	400	50
CHEMICALS:			
Transmission pipelines (including, but not limited to, fertilizer, liquid petroleum, or anhydrous ammonia)	200	400	50
Chemical applications to ground surface	100	200	50
Chemical and mineral storage, except for liquid propane gas (LPG)			
Above ground storage ⁹	100	200	50
On or under ground storage	200	400	50
Liquid propane gas (LPG) storage tanks	15		15
ANIMALS:			
Animal pasturage	50		50
Animal enclosures (such as confinement buildings or open feedlots)	200	400	50
Earthen silage storage trenches or pits	100	200	50
Animal Wastes:			
Storage basins or lagoons or runoff control basins	400	1000	50
Solids stockpiles, solids settling facilities, or storage tanks	200	400	50
Land application of liquid, slurry, or solids	200	400	50
WATERBODIES:			
Flowing streams, ponds, lakes, reservoirs, wetlands, or drainage channels ¹⁰	50		50
MISCELLANEOUS STRUCTURES:			
Basements, pits, or sumps ¹¹	10		10
Cemeteries	200		50
Cisterns	50	100	50
Railroads	100	200	50
Solid waste landfills and disposal sites ¹²	1000		50
GRAVITY SANITARY SEWER MAINS AND STORM SEWERS¹³			
Includes sewers carrying water treatment plant wastes, building sewer service lines, and laterals ¹⁴			
General gravity sanitary and storm sewer minimums	0-25: prohibited		0-25: prohibited
Water main materials ¹⁵	25-75		25
Standard sanitary sewer materials ¹⁵	75-200		50
SANITARY SEWER FORCE MAINS:¹³			
General sanitary sewer force main minimums	0-75: prohibited		0-50: prohibited
Water main materials ¹⁵	75-400		50
Standard sanitary sewer materials ¹⁵	400-1000		50
DRAINS:¹³			
General drains, including well house floor drains to sewers:			
General drain minimums	0-25: prohibited		0-25: prohibited
General drains - water main materials ¹⁵	25-75		25-50
General drains - sanitary sewer materials ¹⁵	75-200		50
Well house floor drains to surface:			
General well house floor drains to surface minimums	0-5: prohibited		0-5: prohibited
Standard sanitary sewer material ¹⁵	5-50		5-50
MISCELLANEOUS CONVEYANCES:¹³			
Internal conveyance piping for water plant treatment process wastes treated onsite:			
Internal conveyance piping minimums	0-5: prohibited		0-5: prohibited
Standard sanitary sewer materials ¹⁵	5-50		5-50

¹Deep and shallow wells are defined in 567—40.2(455B).

²GHEX loop boreholes are defined in 567—49.2(455B).

³Solid wastes, for the purpose of land application, are those derived from the treatment of water or wastewater, including sewage sludge, as defined in 567—Chapter 67. Certain types of solid wastes from water treatment processes may be land-applied within the SD on an individual, case-by-case basis.

⁴Septage shall be land applied in accordance with 567—Chapter 68.

⁵The term “water treatment plant waste treatment structures” includes lagoons that are used solely to store wastes or wastewater from drinking water treatment plants, such as lime sludge storage lagoons.

⁶PSDS (private sewage disposal system) is defined in 567—subrule 69.1(2). “Onsite treatment system” includes any wastewater treatment system not included in the definition of a private sewage disposal system (i.e., provides treatment or disposal of domestic sewage from more than four dwelling units or 16 or more individuals on a continuing basis) that is utilizing onsite wastewater treatment technologies described in 567—Chapter 69 to treat domestic waste. Closed portion refers to the part of a treatment system that is fully contained and does not allow effluent or pretreated effluent to enter soil or groundwater (e.g., septic tank or impervious vault toilet). Open portion refers to the part of a treatment system that allows effluent or pretreated effluent to discharge into soil or groundwater for treatment or disposal (e.g., soil absorption system or unlined ISSF system). These SDs also apply to septic systems that are not considered privately owned.

⁷The term “lagoons” includes aerated lagoon systems, advanced aerated lagoon systems, and waste stabilization lagoons as defined in 567—subrule 81.1(1) and holding ponds, equalization basins, and sludge digestion or holding tanks as described in the IWFDS. The term does not include lagoons used to dispose of water treatment plant wastes and anaerobic lagoons used for animal wastes. The SD from lagoons shall be measured from the water surface.

⁸The term “mechanical treatment plants” include activated sludge systems and fixed film biological treatment systems, as defined in 567—subrule 81.1(1), and any other wastewater disposal system that is not a PSDS, an onsite treatment system, or a lagoon.

⁹The minimum SD for liquid fuel storage associated with standby power generators shall be 50 feet if secondary containment is provided. Secondary containment shall provide for a minimum of 110 percent of the liquid fuel storage capacity. Double-walled storage tanks shall not be considered as secondary containment. Electrical power transformers mounted on a single utility pole are exempt from the SD requirements.

¹⁰Includes drainage channels that may have a direct connection to the groundwater table or a surface water.

¹¹The SDs from basements, pits, and sumps must be met in order for a well to be considered a protected source for the purposes of the coliform sampling frequency determination in 567—subparagraph 41.2(1)“e”(4).

¹²Solid waste, when referring to landfills and disposal sites, means garbage, refuse, rubbish, and other similar discarded solid or semisolid materials, including but not limited to such materials resulting from industrial, commercial, agricultural, and domestic activities.

¹³The SDs are dependent upon the two following factors: the type of piping that is in the existing sewer or drain, as noted in the table, and whether the piping was properly installed in accordance with the standards.

¹⁴The distances for building sewer service lines and laterals shall be considered the minimum distances when constructing sewer lines and shall be increased where possible to provide better protection.

¹⁵These are the type of materials or pipe used to construct the type of sewer, main, or drain as specified in accordance with 43.3(2) and Section 2.4 of the IWFDS.

43.3(8) *Drinking water system components.* Drinking water system components that come into contact with raw, partially treated, or finished water must be suitable for the intended use in a potable water system. Components must be certified by an American National Standards Institute (ANSI) accredited third party for conformance with ANSI/NSF Standard 61 and ANSI/NSF lead-free (through annex G of 372) specifications, if such specification exists for the particular product, unless approved components are not reasonably available for use. Component materials generally excluded from ANSI/NSF 61 requirements include concrete, stainless steel, and aluminum. If the component does not meet the ANSI/NSF Standard 61 and lead-free specifications or no specification is available, the person seeking to supply or use the component must prove to the department's satisfaction that the component is not toxic or otherwise a potential hazard in a potable PWS.

43.3(9) *Water treatment filter media material.* For single media filters, grain sizes up to 0.8 mm effective size may be approved for filters designed to remove constituents other than those contained in the primary drinking water standards. Pilot or full-scale studies demonstrating satisfactory treatment efficiency and operation with the proposed media will be required prior to issuing any construction permits that allow filter media sizes greater than 0.55 mm.

43.3(10) *Best available treatment (BAT) technology.*

a. BATs for organic compounds. The table in 40 CFR §141.61(b) identifies either granular activated carbon (GAC), packed tower aeration (PTA), or oxidation (OXID) as the BAT, TT, or other means available for achieving compliance with the MCL for organic contaminants

identified in 567—paragraph 41.5(1)“b.” When setting MCLs for synthetic organic chemicals (SOCs), any BAT must be at least as effective as GAC.

b. BATs for inorganic chemicals (IOCs) and radionuclides.

(1) IOCs. The BAT for Inorganic Compounds table in 40 CFR §141.62(c) identifies the BAT technology, TT, or other means available for achieving compliance with the MCLs for the IOC contaminants listed in 567—paragraph 41.3(1)“b,” except fluoride.

(2) Arsenic. The Small System Compliance Technologies for Arsenic table in 40 CFR §141.62(c) identifies the affordable technology, TT, or other means available to systems serving 10,000 or fewer persons for achieving compliance with the arsenic MCL.

(3) Radionuclides.

1. Table B in 40 CFR §141.66(g) identifies the BAT for achieving compliance with the radionuclide MCL.

2. Table D in 40 CFR §141.66(h) identifies the radionuclides BATs for systems serving 10,000 or fewer people.

c. BATs for disinfection byproducts (DBPs) and disinfectants. The BATs for achieving compliance with the MCLs for the DPBs listed in 567—paragraph 41.5(2)“b” and the MRDLs listed in 567—paragraph 41.5(2)“c” are identified in 40 CFR §141.64.

d. Requirement to install the BAT. The department shall require CWSs and NTNCs to install and use any treatment method identified in 43.3(10) as a condition for granting an interim contaminant level, except as provided in 43.3(10)“e.” If, after installation of the treatment method, a system cannot meet the MCL, it shall be eligible for a compliance schedule with an interim contaminant level granted under 567—subrule 40.5(9) and 567—43.2(455B).

e. Engineering assessment option. If a system can demonstrate through comprehensive engineering assessments, which may include pilot plant studies at the department’s discretion,

that the treatment methods identified in 43.3(10) would only achieve a de minimis reduction in contaminants, the department may establish a compliance schedule that requires the system being granted the waiver to examine other treatment methods as a condition of obtaining the interim contaminant level.

f. Compliance schedule. If the department determines that a treatment method identified in 43.3(10) “a,” “b,” and “c” is technically feasible, the department may require a system to install or use a treatment method in connection with a compliance schedule established under 567—40.5(9) and 567—43.2(455B). The determination shall be based upon studies by the system and other relevant information.

g. Avoidance of unacceptable risk to health (URTH). To avoid an URTH, the department may require a PWS to use bottled water, POU devices, POE devices, or other means as a condition of granting a waiver or an exemption from the requirements of 43.3(10) or as a condition of a compliance schedule.

567—43.4(455B) Certification of completion. Within 30 days after completion of construction, installation or modification of any project, the construction permit holder shall submit a certification by a licensed professional engineer that the project was completed in accordance with the approved plans and specifications, except if the project received a waiver pursuant to 43.3(4).

567—43.5(455B) Filtration and disinfection for surface water (SW) and influenced groundwater (IGW) PWSs.

43.5(1) Applicability/general requirements. These rules apply to all PWSs using SW or IGW, in whole or in part, and establish criteria under which filtration is required as a treatment technique (TT). In addition, these rules establish TT requirements in lieu of MCLs for *Giardia lamblia*, heterotrophic plate count (HPC) bacteria, *Legionella*, viruses and turbidity. Each PWS with a SW or IGW must provide source water treatment that complies with these TT

requirements. Systems that serve at least 10,000 persons must also comply with ~~567—43.9(455B)~~. Systems that serve fewer than 10,000 persons must also comply with ~~567—43.10(455B)~~.

a. TT requirements. The TT requirements consist of installing and properly operating water treatment processes which reliably achieve:

(1) At least 99.9 percent (3-log) removal or inactivation of *Giardia lamblia* cysts between a point where the raw water is not subject to recontamination by SW runoff and a point downstream before or at the first customer; and

(2) At least 99.99 percent (4-log) virus removal or inactivation between a point where the raw water is not subject to recontamination by SW runoff and a point downstream before or at the first customer.

b. Criteria for identification of IGW. Direct GW influence must be determined for individual sources in accordance with department criteria. The department determination of direct influence may be based on site-specific measurements of water quality or documentation of well construction characteristics and geology with field evaluation.

c. Sources subject to this rule. Only SW and IGW that are at risk to the contamination from *Giardia* cysts are subject to this rule. GW sources shall not be subject to this rule.

d. Source evaluation criteria. The identification of a source as SW or IGW shall be determined for an individual source, by the department, in accordance with the criteria in this rule. These criteria shall be used to delineate between SW, IGW, and GW. The PWS shall provide to the department that information necessary to make the determination.

e. Preliminary evaluation. For all sources, the department shall conduct a preliminary evaluation of information provided by the PWS to determine if the source is an obvious SW or is an IGW. The source shall be evaluated during that period of highest susceptibility to influence from SW. A preliminary evaluation may include a review of surveys, reports,

geological information of the area, physical properties of the source, and departmental and PWS records.

(1) If the source is identified as a SW, no additional evaluation is needed.

(2) If the source is GW and identified as a deep well, no additional evaluation is needed unless through direct knowledge or documentation the source does not meet the well source evaluation requirements in 43.5(1) “*f.*” The deep well shall then be evaluated using a formal evaluation in accordance with 43.5(1) “*g.*”

(3) If the source is a shallow well, a well source evaluation shall be conducted in accordance with 43.5(1) “*f.*”

(4) If the source is a spring, infiltration gallery, radial collector well, or any other subsurface source, a formal evaluation shall be conducted in accordance with 43.5(1) “*g.*”

f. Well source evaluation. Shallow wells greater than 50 feet in lateral distance from a SW source shall be evaluated for direct influence of SW through a review of departmental or PWS files in accordance with this paragraph. Sources that meet these criteria shall be considered to be not under the direct influence of SW, and no additional evaluation will be required. Shallow wells 50 feet or less in lateral distance from a SW shall be evaluated in accordance with 43.5(1) “*g.*” and “*h.*”

(1) Well construction criteria. The well shall be constructed so as to prevent SW from entering the well or traversing the casing.

(2) Water quality criteria. Water quality records shall indicate:

1. No record of total coliform or fecal coliform contamination in untreated samples collected over the past three years.

2. No history of turbidity problems associated with the well, other than turbidity as a result of inorganic chemical precipitates.

3. No history of known or suspected outbreak of *Giardia* or other pathogenic organisms associated with SW (e.g., *Cryptosporidium*) that has been attributed to the well.

(3) Other available data. If data on particulate matter analysis of the well are available, there shall be no evidence of particulate matter present that is associated with SW. If information on turbidity or temperature monitoring of the well and nearby SW is available, there shall be no data on the source which correlates with that of a nearby SW.

(4) Further evaluation. Wells that do not meet all the requirements of this paragraph shall require a formal evaluation in accordance with 43.5(1)“g” and may require a particulate analysis and physical properties evaluation in accordance with 43.5(1)“h.”

g. Formal evaluation. A formal evaluation shall be conducted by the department or a licensed professional engineer at the direction of the PWS.

(1) A formal evaluation shall include a complete file review and may include a field survey, as noted below.

1. Complete file review. In addition to the information gathered in a preliminary evaluation in 43.5(1)“e,” a complete file review for a well source shall consider, but not be limited to, design and construction details; evidence of direct SW contamination; water quality analysis; indications of waterborne disease outbreaks; operational procedures; and customer complaints regarding water quality or water-related infectious illness.

2. Field survey. An evaluation of a source other than a well source shall include a complete file review and a field survey. A field survey shall substantiate findings of the complete file review and determine if the source is at risk to pathogens from direct SW influence. A survey shall examine the source for evidence that SW enters the source through defects, which may include but is not limited to infiltration gallery laterals exposed to SW, springs open to the atmosphere, or surface runoff entering a spring or other collector. A field survey shall note the distances to obvious SW sources.

(2) A report summarizing the findings of the complete file review and the field survey, when conducted, shall be submitted to the department for final review and classification of the source. Either method or both may be used to demonstrate that the source is an SW or an IGW.

1. If the complete file review or field survey demonstrates conclusively that the source is subject to the direct SW influence, the source shall be classified as an IGW.

2. If the findings do not demonstrate conclusive evidence of direct influence of SW, the analysis and evaluation in 43.5(1) "h" should be conducted.

h. Particulate analysis and physical properties evaluation.

(1) SW indicators. Particulate analysis shall be conducted to identify organisms that only occur in SWs as opposed to GWs, and whose presence in GW would indicate the direct influence of SW.

1. Identification of a *Giardia* cyst, live diatoms, and blue-green, green, or other chloroplast containing algae in any source water shall be considered evidence of direct SW influence.

2. Rotifers and insect parts are indicators of SW. Without knowledge of which species is present, the finding of rotifers indicates that the source is either directly influenced by SW, or the water contains organic matter sufficient to support the growth of rotifers. Insects or insect parts shall be considered strong evidence of SW influence, if not direct evidence.

3. The presence of coccidia (e.g., *Cryptosporidium*) in the source water is considered a good indicator of direct influence of SW. Other macroorganisms (greater than 7 um) that are parasitic to animals and fish, such as, but not limited to, helminths (e.g., tapeworm cysts), ascaris, and Diphyllbothrium, shall be considered as indicators of direct influence of SW.

(2) Physical properties. Turbidity, temperature, pH and conductivity provide supportive, but less direct, evidence of direct influence of SW. Temperature fluctuations or turbidity fluctuations of greater than 0.5-1.0 NTU over the course of a year may indicate direct

influence of SW. Changes in other chemical parameters such as pH, conductivity, or hardness may indirectly indicate influence by nearby SW.

i. Compliance. A PWS using a SW source or an IGW is considered to be in compliance with this subrule if it meets the filtration requirements in 43.5(3) and the disinfection requirements in 43.5(2).

j. Certified operator requirement. Each PWS using a SW source or an IGW must be operated by a certified operator who meets the requirements of 567—Chapter 81.

43.5(2) Disinfection requirements. All CWS, NTNC, and TNC using SW or IGW in whole or in part shall be required to provide disinfection in compliance with this subrule and filtration in compliance with 43.5(3). If the department has determined that filtration is required, the system must comply with any interim disinfection requirements the department deems necessary before filtration is installed. A system providing filtration on or before December 30, 1991, must comply with this subrule beginning June 29, 1993. A system providing filtration after December 30, 1991, must comply with this subrule when filtration is installed. Failure to meet any requirement of this subrule after the applicable date is a TT violation.

a. Disinfection treatment criteria.

(1) Disinfection treatment must be sufficient to ensure that the total treatment processes of a system achieve at least 99.9 percent (3-log) inactivation or removal of *Giardia lamblia* cysts and at least 99.99 percent (4-log) virus inactivation or removal, acceptable to the department.

(2) At least 0.5 log inactivation of *Giardia lamblia* cysts must be achieved through disinfection treatment using a chemical disinfectant even if the required inactivation or removal is met or exceeded through physical treatment processes.

(3) Each system must calculate the total inactivation ratio ($CT_{\text{calculated}}/CT_{\text{required}}$) each day the treatment plant is in operation. A system's total inactivation ratio must be equal to or

greater than 1.0 to ensure that the minimum inactivation and removal requirements have been achieved. If a system's total inactivation ratio for the day is below 1.0, it must notify the department within 24 hours.

b. Disinfection system. The disinfection system must include either:

(1) Redundant components, including an auxiliary power supply with automatic start-up and alarm, to ensure that disinfectant application is maintained continuously while water is being delivered to the distribution system, or

(2) Automatic shutoff of delivery of water to the distribution system when there is less than 0.3 mg/L of residual disinfectant concentration (RDC) in the water. If the department determines that automatic shutoff would cause unreasonable risk to health or interfere with fire protection, the system must comply with 43.5(2) "b"(1).

c. Residual disinfectant entering system. The RDC in the water entering the distribution system, measured as specified in 43.5(4) "a"(4) and 43.5(4) "b"(2)"1", cannot be less than 0.3 mg/L free residual or 1.5 mg/L total residual chlorine for more than four hours.

d. Residual disinfectant in the system. The RDC in the distribution system, measured as total chlorine, combined chlorine, or chlorine dioxide, as specified in 43.5(4) "a"(4) and 43.5(4) "b"(2)"2", cannot be undetectable in more than five percent of the samples each month for any two consecutive months that the system serves water to the public. Water within the distribution system with an HPC bacteria concentration less than or equal to 500/mL, measured as HPC as specified in 567—paragraph 41.2(3) "e," is deemed to have a detectable disinfectant residual for purposes of determining compliance with this requirement. Therefore, the value "V" in the following formula cannot exceed five percent in one month for any two consecutive months.

$$V = [(c + d + e) / (a + b)] \times 100$$

where the letters indicate the number of instances in which:

a = RDC is measured

b = RDC is not measured but HPC bacteria is measured

c = RDC is measured but not detected and no HPC is measured

d = no RDC is detected and where the HPC is greater than 500/mL

e = RDC is not measured and HPC is greater than 500/mL

43.5(3) *Filtration requirements.* Turbidity measurements required by this subrule shall be made in accordance with 43.5(4) “a”(1) and 43.5(4) “b”(1).

a. Applicability. A PWS that uses a SW source or an IGW source must provide treatment consisting of both disinfection, as specified in 43.5(2), and filtration treatment that complies with the turbidity requirements of 43.5(3), 43.5(4), and 43.5(5). A system shall install filtration within 18 months after the department determines, in writing, that filtration is required. The department may require, and a system shall comply, with any interim turbidity requirements the department deems necessary. Failure to meet any requirements of the subrules referenced below after the dates specified is a TT violation.

(1) A system providing or required to provide filtration:

1. On or before December 30, 1991, must comply with this subrule by June 29, 1993; and
2. After December 30, 1991, must comply with this subrule when filtration is installed.

(2) Beginning:

1. January 1, 2002, systems serving at least 10,000 people must meet the turbidity requirements in 567—43.9(455B); and
2. January 1, 2005, systems serving fewer than 10,000 people must meet the turbidity requirements in 567—43.10(455B).

b. Conventional filtration treatment or direct filtration.

(1) Systems using conventional filtration serving at least 10,000 people must meet the turbidity level requirements in 43.9(3) “a.”

(2) Systems using conventional filtration or direct filtration serving fewer than 10,000 people must meet the turbidity level requirements in 43.10(4) “c.”

c. Slow sand filtration.

(1) For systems using slow sand filtration, the turbidity level of representative samples of a system’s filtered water must be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month.

(2) The turbidity level of representative samples of a system’s filtered water must not exceed 1 NTU in two consecutive 15-minute recordings.

d. Diatomaceous earth filtration.

(1) For systems using diatomaceous earth filtration, the turbidity level of representative samples of a system’s filtered water must be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month.

(2) The turbidity level of representative samples of a system’s filtered water must not exceed 1 NTU in two consecutive 15-minute recordings.

e. Other filtration technologies. A PWS may use either a filtration technology not listed in 43.5(3) “b” to “d” or a filtration technology listed in 43.5(3) “b” or “c” at a higher turbidity level if it demonstrates to the department, through a preliminary report submitted by a licensed professional engineer using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of 43.5(2), consistently achieves 99.9 percent removal or inactivation of *Giardia lamblia* and 99.99 percent virus removal or inactivation. For a system that uses alternative filtration technology and makes this demonstration, the turbidity TT requirements are as follows:

(1) The turbidity level of representative samples of a system’s filtered water must be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month.

(2) The turbidity level of representative samples of a system's filtered water must not exceed 1 NTU. Beginning January 1, 2002, systems serving at least 10,000 people must meet the requirements for other filtration technologies in 43.9(3) "b." Beginning January 1, 2005, systems serving fewer than 10,000 people must meet the requirements for other filtration technologies in 43.10(4).

43.5(4) *Analytical and monitoring requirements.*

a. Analytical methods. Only the analytical method(s) specified in this paragraph, or otherwise approved by the department, may be used to demonstrate compliance with 43.5(2) and 43.5(3). Measurements for pH, temperature, turbidity, and RDCs must be conducted by a Grade II, III or IV operator meeting the requirements of 567—Chapter 81, any person under the supervision of such an operator, or a laboratory certified in accordance with 567—Chapter 83. For consecutive PWSs from a SW or IGW system, the disinfectant concentration analyses must be conducted by a certified operator who meets the requirements of 567—Chapter 81. Heterotrophic plate count (HPC) bacteria measurements must be conducted by a laboratory certified by the department to do such analysis.

(1) Turbidity shall be analyzed using the methodology in the following table. Calibrate each turbidimeter at least once every 90 days with a primary standard. The calibration of each turbidimeter used for compliance must be verified at least once per week with a primary standard, secondary standard, the manufacturer's proprietary calibration confirmation device, or by a department-approved method. If the verification is not within plus or minus 0.05 NTU for measurements of less than or equal to 0.5 NTU, or within plus or minus 10 percent of measurements greater than 0.5 NTU, the turbidimeter must be recalibrated.

Turbidity Methodology

Methodology	Analytical Method				
	EPA	SM	GLI	HACH	Other
Nephelometric ⁵	180.1 ¹	2130B ²	Method 2 ³	FilterTrak 10133 ⁴ ; Hach Method 8195, Rev. 3.0 ¹⁵	

Laser Nephelometry (online)					Mitchell M5271 ⁶ ; Mitchell M5331 Rev. 1.2 ¹⁰ ; Lovibond PTV 6000 ¹³
LED Nephelometry (online)					Mitchell M5331 ⁷ ; Mitchell M5331 Rev. 1.2 ¹⁰ ; AMI Turbiwell ⁹ ; Lovibond PTV 2000 ¹² ; Lovibond PTV 1000 ¹⁴
LED Nephelometry (portable)					Orion AQ4500 ⁸
360-degree Nephelometry					Hach Method 10258 ¹¹

¹⁴“Methods for the Determination of Inorganic Substances in Environmental Samples,” EPA-600/R-93-100, August 1993.

NTIS, PB94-121811.

²SM, 18th (1992), 19th (1995), 20th (1998), 21st (2005), 22nd (2012), and 23rd (2017) editions (any of these editions may be used).

³GLI Method 2, “Turbidity,” November 2, 1992, Great Lakes Instruments, Inc., 8855 North 55th Street, Milwaukee, WI 53223.

⁴Hach FilterTrak Method 10133, “Determination of Turbidity by Laser Nephelometry,” January 2000, Revision 2.0, www.hach.com.

⁵Styrene divinyl benzene beads (e.g., AMCO-AEPA-1 or equivalent) and stabilized formazin (e.g., Hach StablCal™ or equivalent) are acceptable substitutes for formazin.

⁶Mitchell Method M5271, Revision 1.1. “Determination of Turbidity by Laser Nephelometry,” March 5, 2009, www.nemi.gov.

⁷Mitchell Method M5331, Revision 1.1. “Determination of Turbidity by LED Nephelometry,” March 5, 2009, www.nemi.gov.

⁸Orion Method AQ4500, Revision 1.0. “Determination of Turbidity by LED Nephelometry,” May 8, 2009, www.nemi.gov or Thermo Scientific, www.thermo.com.

⁹AMI Turbiwell, “Continuous Measurement of Turbidity Using a SWAN AMI Turbiwell Turbidimeter,” August 2009, www.nemi.gov.

¹⁰Mitchell Method M5331, Revision 1.2. “Determination of Turbidity by LED or Laser Nephelometry,” February 2016, www.nemi.gov.

¹¹Hach Company. “Hach Method 10258 – Determination of Turbidity by 360-Degree Nephelometry,” January 2016 and March 2018, revision 2.0, www.hach.com.

¹²Lovibond PTV 2000. “Continuous Measurement of Drinking Water Turbidity Using a Lovibond PTV 2000 660-nm LED Turbidimeter,” December 2016, Revision 1.0, Tintometer, Inc., 6456 Parkland Drive, Sarasota, FL 34243.

¹³Lovibond PTV 6000. “Continuous Measurement of Drinking Water Turbidity Using a Lovibond PTV 6000 Laser Turbidimeter,” December 2016, Revision 1.0, Tintometer, Inc., 6456 Parkland Drive, Sarasota, FL 34243.

¹⁴Lovibond PTV 1000. “Continuous Measurement of Drinking Water Turbidity Using a Lovibond PTV 1000 White Light LED Turbidimeter,” December 2016, Revision 1.0, Tintometer, Inc., 6456 Parkland Drive, Sarasota, FL 34243.

¹⁵Hach Company. “Hach Method 8195-Determination of Turbidity by Nephelometry,” March 2018, Revision 3.0, www.hach.com.

(2) The temperature and pH (hydrogen ion concentration) shall be determined in compliance with the methodology in 567—subparagraph 41.4(1) “g”(1).

(3) The HPC bacteria sampling and analysis shall be conducted in compliance with 567—subrule 41.2(3) and 43.5(2) “d.” The time from sample collection to initiation of analysis shall not exceed eight hours, and the samples must be held below 10 degrees Celsius during transit.

(4) The residual disinfectant concentrations (RDCs) shall be determined using one of the analytical methods in the following table. RDCs for free chlorine and total chlorine may also be measured by using DPD colorimetric test kits. Free and total chlorine residuals may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument provided the chemistry, accuracy, and precision remain the same. Instruments used for continuous monitoring must be verified with a grab sample measurement at least every seven days. The analyzer concentration must be within plus or minus 0.1 mg/L or plus or minus 15 percent (whichever is larger) of the grab sample measurement. If the verification is not within this range, immediate actions must be taken to resolve the issue and another verification must be conducted.

Disinfectant Analytical Methodology

Residual	Methodology	SM ^{1,2}	SM Online ⁶	Other
Free chlorine	Amperometric Titration	4500-Cl D	4500-Cl D-00	D1253-03 ⁴ , 08, 14
	DPD Ferrous Titrimetric	4500-Cl F	4500-Cl F-00	
	DPD Colorimetric	4500-Cl G	4500-Cl G-00	Hach Method 10260 ¹⁰
	Syringaldazine (FACTS)	4500-Cl H	4500-Cl H-00	
	Online Chlorine Analyzer			EPA 334.0 ⁷
	Amperometric Sensor			ChloroSense ⁸
	Indophenol Colorimetric			Hach Method 10241 ¹¹
Total chlorine	Amperometric Titration	4500-Cl D	4500-Cl D-00	D1253-03 ⁴ , 08, 14
	Amperometric Titration (low-level measurement)	4500-Cl E	4500-Cl E-00	
	DPD Ferrous Titrimetric	4500-Cl F	4500-Cl F-00	
	DPD Colorimetric	4500-Cl G	4500-Cl G-00	Hach Method 10260 ¹⁰
	Iodometric Electrode	4500-Cl I	4500-Cl I-00	
	Online Chlorine Analyzer			EPA 334.0 ⁷
	Amperometric Sensor			ChloroSense ⁸
	Amperometric Titration	4500-ClO ₂ C	4500-C10 ₂ C-00	

Chlorine dioxide	DPD Method Amperometric Titration Amperometric Sensor Spectrophotometric	4500-ClO ₂ D 4500-ClO ₂ E	4500-ClO ₂ E-00	ChlordioX Plus ⁹ 327.0, Revision 1.1 ⁵
Ozone	Indigo method	4500-O ₃ B ³	4500-O ₃ B-97	

¹SM, 18th (1992), 19th (1995), 20th (1998), 21st (2005), 22nd (2012), and 23rd (2017) editions (any of these editions may be used). Only the 18th, 19th, and 20th editions may be used for chlorine dioxide Method 4500-ClO₂ D.

²Other analytical test procedures are contained within Technical Notes on Drinking Water Methods, EPA-600/R-94-173, October 1994, NTIS PB95-104766.

³SM, 18th (1992), 19th (1995), 21st (2005), and 22nd (2012) editions (any edition may be used).

⁴ASTM, Vol. 11.01, 2004; any year containing the cited version of the method may be used.

⁵EPA Method 327.0, Revision 1.1, "Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry," May 2005, EPA 815-R-05-008, www.nemi.gov.

⁶SM Online, www.standardmethods.org. The year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that may be used.

⁷EPA Method 334.0, "Determination of Residual Chlorine in Drinking Water Using an On-Line Chlorine Analyzer," September 2009. EPA 815-B-09-013, www.nemi.gov.

⁸ChloroSense, "Measurement of Free and Total Chlorine in Drinking Water by Palintest ChloroSense," September 2009, www.nemi.gov or Palintest Water Analysis Technologies, www.palintest.com.

⁹ChlordioX Plus. "Chlorine Dioxide and Chlorite in Drinking Water by Amperometry Using Disposable Sensors," November 2013, Palintest Water Analysis Technologies, www.palintest.com.

¹⁰Hach Company. "Hach Method 10260 – Determination of Chlorinated Oxidants (Free and Total) in Water Using Disposable Planar Reagent-Filled Cuvettes and Mesofluidic Channel Colorimetry," April 2013, www.hach.com.

¹¹Hach Company. "Hach Method 10241 – Spectrophotometric Measurement of Free Chlorine in Finished Drinking Water," November 2015, Revision 1.2, www.hach.com.

b. Monitoring. A PWS that uses a SW or IGW source must monitor in accordance with this paragraph.

(1) Turbidity.

1. Routine monitoring. Turbidity measurements required by 43.5(3) must be performed on representative samples of the system's filtered water utilizing continuous turbidity monitoring equipment. Turbidity monitoring results must be recorded at least every 15 minutes. Turbidity must be monitored according to a written turbidity protocol approved by the department and audited for compliance during sanitary surveys.

2. Monitoring protocol. The turbidity monitoring protocol shall include, but is not limited to: sample measurement location; calibration method, frequency, and standards; verification method, frequency, and documentation; and data collection, recording frequency, and reporting.

3. Failure of continuous monitoring equipment. If there is a failure in the continuous turbidity monitoring equipment, the system must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is repaired and back online. A system has a maximum of five working days after failure to repair the equipment or else the system is in violation. The system must notify the department within 24 hours of both when the turbidimeter was taken offline and when it was returned online. It is a TT violation if the turbidity exceeds 1 NTU at any time during grab sampling. The system must inform the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with 567—subparagraph 40.5(3) "b"(3).

(2) Residual disinfectant.

1. Residual entering the system. The RDC of the water entering the distribution system shall be monitored continuously, and the lowest value recorded each day. If there is a failure in the continuous monitoring equipment, grab sampling every four hours may be conducted in lieu of continuous monitoring, but shall not exceed five working days following the equipment failure. If acceptable to the department, systems serving 3,300 or fewer persons

may take grab samples in lieu of providing continuous monitoring on an ongoing basis at the frequencies prescribed below:

Residual Disinfectant Samples Required of SW or IGW PWS

System size (persons served)	Samples per day*
500 or fewer	1
501 to 1,000	2
1,001 to 2,500	3
2,501 to 3,300	4

*When more than one grab sample is required per day, the day's samples cannot be taken at the same time. The sampling intervals must be a minimum of four-hour intervals.

If at any time the disinfectant concentration falls below 0.3 mg/L free residual or 1.5 mg/L total residual chlorine (TRC) in a system using grab sampling in lieu of continuous monitoring, the system shall take a grab sample every four hours until the RDC is equal to or greater than 0.3 mg/L free residual or 1.5 mg/L TRC.

2. Residual in the system. The RDC must be measured at least daily in the distribution system. Residual disinfectant measurements that are required as part of the total coliform bacteria sample collection under 567—subparagraph 41.2(1)“c”(7) shall be used to satisfy this requirement on the day(s) when a bacteria sample(s) is collected. The department may allow a PWS that uses both a GW source and a SW source or uses an IGW to take residual disinfectant samples at points other than the total coliform sampling points, if these points are included as a part of the coliform sample site plan meeting the requirements of 567—paragraph 41.2(1)“c”(1)“1” and if the department determines that such points are representative of treated (disinfected) water quality within the distribution system. HPC may be measured in lieu of RDC, using the analytical methods in 567—subparagraph 41.2(3)“e”(1). The time from sample collection to initiation of analysis shall not exceed eight hours. All HPC samples must be kept below 10 degrees Celsius during laboratory transit, and must be analyzed by a laboratory certified in accordance with 567—Chapter 83.

43.5(5) Reporting. PWSs shall report the results of routine monitoring required to demonstrate compliance with rule 567—43.5(455B) and TT violations as follows:

a. Waterborne disease outbreak. Each system, upon discovering that a waterborne disease outbreak potentially attributable to that system has occurred, must report that occurrence to the department as soon as possible, but no later than by the end of the next business day.

b. Turbidity exceeds 5 NTU. If at any time the turbidity exceeds 5 NTU, the system must inform the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with the PN requirements in 567—subparagraph 40.5(3) “b”(3).

c. Residual disinfectant entering distribution system below 0.3 mg/L free residual chlorine or 1.5 mg/L total residual chlorine (TRC). If at any time the residual falls below 0.3 mg/L free residual chlorine or 1.5 mg/L TRC in the water entering the distribution system, the system must notify the department as soon as possible, but no later than by the end of the next business day. The system also must notify the department by the end of the next business day whether or not the residual was restored to at least 0.3 mg/L free residual chlorine or 1.5 mg/L TRC within four hours.

d. Routine monitoring. Routine monitoring results shall be provided as part of the MORs in accordance with rule 567—40.3(455B) and 567—subrule 40.8(3).

e. Total inactivation ratio below 1.0. If the system’s total inactivation ratio for the day is below 1.0, the system must notify the department within 24 hours.

43.5(6) Filter backwash recycle provisions. All SW or IGW systems that employ conventional filtration or direct filtration treatment and that recycle spent filter backwash water, thickener supernatant, or liquids from dewatering processes must comply with this subrule.

a. Reporting. A system must notify the department in writing by December 8, 2003, if it recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes. This notification must include the following information.

(1) A plan schematic showing the origin of all recycled flows (including, but not limited to, spent filter backwash water, thickener supernatant, and liquids from dewatering processes), the hydraulic conveyance used to transport them, and the location where they are reintroduced back into the treatment plant.

(2) In gallons per minute (GPM), the typical recycle flow, highest observed plant flow experience in the previous year, design flow for the treatment plant, minimum plant rate during which the filter backwash will be recycled, and the department-approved operating capacity for the plant where the department has made such determinations.

b. Treatment technique (TT) requirement. Any system that recycles spent filter backwash water, thickener supernatant, or liquids from dewatering processes must return these flows through the processes of its existing conventional or direct filtration system or at an alternate location approved by the department by June 8, 2004. However, if capital improvements are necessary to modify the recycle location to meet this requirement, all capital improvements must be completed no later than June 8, 2006.

c. Recordkeeping. The system must collect and retain on file the recycle flow information specified below for department review and evaluation.

(1) A copy of the recycle notification and information submitted to the department under 43.5(6) "a";

(2) A list of all recycle flows and their return frequency;

(3) The average and maximum backwash flow rate through the filters and the average and maximum duration of the filter backwash process in minutes;

(4) The typical filter run length and a written summary of how filter run length is determined;

(5) The type of treatment provided for the recycle flow; and

(6) Data on the physical dimensions of the equalization and treatment units, typical and maximum hydraulic loading rates, type of treatment chemicals used including average dose and frequency of use, and frequency of solids removal, if applicable.

567—43.6(455B) Residual disinfectant and disinfection byproduct (DBP) precursors.

43.6(1) *Residual disinfectant.*

a. Applicability.

(1) CWSs and NTNCs. This rule establishes criteria under which CWSs and NTNCs that add a chemical disinfectant to the water in any part of the drinking water treatment process or that provide water that contains a chemical disinfectant must modify their practices to meet the MCLs in 567—41.6(455B), the MRDLs in this subrule, and the TT requirements for DBP precursors in 43.6(3).

(2) TNC systems with chlorine dioxide disinfection. This rule establishes criteria under which TNCs that use chlorine dioxide as a disinfectant or oxidant must modify their practices to meet the chlorine dioxide MRDL in 43.6(1) “*b.*”

(3) Compliance dates. Compliance dates for this rule are based upon the source water type and the population served. Systems must comply with this rule as follows, unless otherwise noted:

1. SW and IGW CWSs and NTNCs. CWSs and NTNCs using SW or IGW in whole or in part and that serve 10,000 or more persons must comply with this rule. CWSs and NTNCs using SW or IGW that serve fewer than 10,000 persons must comply with this rule.

2. GW CWSs and NTNCs. CWSs and NTNCs using only GW not under the direct influence of SW must comply with this rule.

3. TNC systems using chlorine dioxide. TNC systems serving over 10,000 persons and using SW or IGW and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide requirements in this rule. TNC systems serving 10,000 persons or less, regardless of source water type, and using chlorine dioxide as a disinfectant or oxidant must comply with the chlorine dioxide requirements in this rule.

(4) Residual disinfectant control. Notwithstanding the MRDLs in this rule, systems may increase residual disinfectant levels of chlorine or chloramines (but not chlorine dioxide) in the distribution system to a level and for a time necessary to protect public health or to address specific microbiological contamination problems caused by circumstances including, but not limited to, distribution line breaks, storm run-off events, source water contamination events, or cross-connection events.

(5) Consecutive systems. Consecutive systems that provide water containing a disinfectant or oxidant must comply with this rule.

(6) Systems with multiple water sources. Systems with water sources that are used independently from each other, are not from the same source as determined by the department, or do not go through identical treatment processes must monitor for the applicable disinfectants or oxidants and DBPs during operation of each source. Systems must comply with this rule during the use of each water source.

b. MRDLs. The MRDLs are as follows:

Residual Disinfectant	MRDL (mg/L)
Chloramines	4.0 as Cl ₂
Chlorine	4.0 as Cl ₂
Chlorine dioxide	0.8 as ClO ₂

c. Residual disinfectant monitoring requirements.

(1) General requirements.

1. Systems must take all samples during normal operating conditions. If a system does not use the disinfectant or oxidant on a daily basis, it must conduct the required daily monitoring

each day the disinfectant or oxidant is used, and any required monthly monitoring during those months in which the disinfectant or oxidant is used during any portion of the month.

2. Failure to monitor in accordance with the monitoring plan required under 43.6(1) “c”(1)“5” is a monitoring violation.

3. Failure to monitor is a violation for the entire period covered by the annual average where compliance is based on an RAA of monthly or quarterly samples or averages. The system’s failure to monitor makes it impossible to determine MRDL compliance.

4. Systems may use only data collected under this rule or of 567—41.6(455B) to qualify for reduced monitoring.

5. Systems required to monitor under this rule or 567—41.6(455B) must develop and implement a monitoring plan, in accordance with 567—paragraph 41.6(1) “c”(1)“6.”

(2) Chlorine and chloramines.

1. Routine monitoring. CWSs and NTNCs using chlorine or chloramines must measure the residual disinfectant level at the same points in the distribution system and at the same time as total coliforms are sampled, as specified in 567—subrule 41.2(1). SW and IGW systems may use the results of RDC sampling conducted under 43.5(4) “b”(2)“2,” in lieu of taking separate samples.

2. Reduced monitoring. Chlorine and chloramine monitoring may not be reduced.

(3) Chlorine dioxide.

1. Routine monitoring. Any PWSs using chlorine dioxide for disinfection or oxidation must take daily samples at the SEP.

2. Additional monitoring. On each day following a routine daily sample monitoring result that exceeds the MRDL, a system is required to take three chlorine dioxide distribution system samples at the locations required below, in addition to the routine daily sample required at the SEP.

- If chlorine dioxide or chloramines are used to maintain a residual disinfectant in the distribution system, or if chlorine is used to maintain a residual disinfectant in the distribution system and there are no disinfection addition points after the SEP (i.e., no booster chlorination), a system must take three samples as close to the first customer as possible, at intervals of at least six hours.

- If chlorine is used to maintain a residual disinfectant in the distribution system and there are one or more disinfection addition points after the SEP (i.e., booster chlorination), a system must take one sample at each of the following locations: as close to the first customer as possible, in a location representative of average residence time, and as close to the end of the distribution system as possible (reflecting maximum residence time in the distribution system).

3. Reduced monitoring. Chlorine dioxide monitoring may not be reduced.

d. Residual disinfectant analytical requirements.

(1) Analytical methods. Systems must measure RDCs for free chlorine, combined chlorine (chloramines), and chlorine dioxide by the methods listed in the following table:

Approved Methods for Residual Disinfectant Compliance Monitoring

Methodology	SM ¹	Other Method	Residual measured ²			
			Free Chlorine	Combined Chlorine	Total Chlorine	Chlorine Dioxide
Amperometric Titration	4500-Cl D	ASTM: D 1253-86 ³ (96), 03, 08, 14	X	X	X	
Low Level Amperometric Titration	4500-Cl E				X	
DPD Ferrous Titrimetric	4500-Cl F		X	X	X	
DPD Colorimetric	4500-Cl G	Hach Method 10260 ⁶	X	X	X	
Syringaldazine (FACTS)	4500-Cl H		X			
Amperometric Sensor		ChloroSense ⁵	X		X	
Online Chlorine Analyzer		EPA 334.0 ⁴	X		X	
Indophenol Colorimetric		Hach Method 10241 ⁸	X	X	X	
Iodometric Electrode	4500-Cl I				X	
DPD	4500-ClO ₂ D					X
Amperometric Method II	4500-ClO ₂ E					X
Lissamine Green Spectrophotometric		EPA 327.0 Rev. 1.1				X
Amperometric Sensor		ChlordioX Plus ⁷				X

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register on February 16, 1999, in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. The document sources are listed below, and further document information is available from the Safe Drinking Water Hotline, 800.426.4791. Documents may be inspected at EPA's Drinking Water Docket; or at the Office of Federal Register.

The following method is available from the NTIS: "Determination of Chlorine Dioxide and Chlorite Ion in Drinking Water Using Lissamine Green B and Horseradish Peroxidase with Detection by Visible Spectrophotometry, Revision 1.1," EPA, May 2005, EPA 815-R-05-008.

¹SM, 19th (1995), 20th (1998), 21st (2005), 22nd (2012), and 23rd (2017) editions. Methods: 4500-Cl D, 4500-Cl E, 4500-Cl F, 4500-Cl G, 4500-Cl H, 4500-Cl I, 4500-ClO₂ E. Only the 19th and 20th editions may be used for the chlorine dioxide Method 4500-ClO₂ D.

²X indicates method is approved for measuring the specified residual disinfectant. Free chlorine or total chlorine may be measured for demonstrating compliance with the chlorine MRDL, and combined chlorine or total chlorine may be measured for demonstrating compliance with the chloramine MRDL.

³ASTM, Volume 11.01, 1996, Method D 1253-86.

⁴EPA Method 334.0, "Determination of Residual Chlorine in Drinking Water Using an On-Line Chlorine Analyzer," September 2009. EPA 815-B-09-013, www.epa.gov/safewater/methods/analyticalmethods_ogwdw.html.

⁵ChloroSense, "Measurement of Free and Total Chlorine in Drinking Water by Palintest ChloroSense," September 2009, www.nemi.gov or Palintest Water Analysis Technologies, www.palintest.com.

⁶Hach Method 10260, "Determination of Chlorinated Oxidants (Free and Total) in Water Using Disposable Planar Reagent-Filled Cuvettes and Mesofluidic Channel Colorimetry," April 2013, www.hach.com.

⁷ChlordioX Plus. "Chlorine Dioxide and Chlorite in Drinking Water by Amperometry Using Disposable Sensors," November 2013, Palintest Water Analysis Technologies, www.palintest.com.

⁸Hach Company. "Hach Method 10241 – Spectrophotometric Measurement of Free Chlorine in Finished Drinking Water," November 2015, Revision 1.2, www.hach.com.

(2) Test kit use. Systems may also measure RDCs for chlorine, chloramines, and chlorine dioxide by using DPD colorimetric test kits acceptable to the department. Free and total chlorine RDCs may be measured continuously by adapting a specified chlorine residual method for use with a continuous monitoring instrument provided the chemistry, accuracy,

and precision remain the same. Continuous monitoring instruments must be verified with a grab sample measurement at least every five days.

(3) Operator requirement. RDC measurements shall be conducted by a Grade A through IV operator meeting the requirements of 567—Chapter 81, any person under the direct supervision of such an operator, or a laboratory certified in accordance with 567—Chapter 83.

e. Residual disinfectant compliance requirements.

(1) General requirements.

1. When compliance is based on an RAA of monthly or quarterly samples or averages and the system's failure to monitor makes it impossible to determine MRDL compliance for chlorine and chloramines, this failure to monitor will be treated as a monitoring violation for the entire period covered by the annual average.

2. All samples taken and analyzed under this rule must be included in determining compliance, even if that number is greater than the minimum required.

(2) Chlorine and chloramines.

1. Compliance must be based on an RAA, computed quarterly, of monthly averages of all samples collected by the system under 43.6(1) "c" (2). If the average covering any consecutive four-quarter period exceeds the MRDL, the system is in violation of the MRDL and must provide PN pursuant to 567—40.5(455B) and report to the department pursuant to 567—paragraph 40.8(3) "d."

2. In cases where systems switch between the use of chlorine and chloramines for residual disinfection during the year, compliance must be determined by including together all monitoring results of both chlorine and chloramines. Reports submitted pursuant to 567—paragraph 40.8(3) "d" must clearly indicate which residual disinfectant was analyzed for each sample.

(3) Chlorine dioxide.

1. Acute violations. Compliance must be based on consecutive daily samples collected under 43.6(1)“c”(3). If any daily sample taken at the SEP exceeds the MRDL, and on the following day one or more of the three samples taken in the distribution system exceed the MRDL, the system is in violation of the MRDL and shall take immediate corrective action to lower the level of chlorine dioxide below the MRDL. Failure to take samples in the distribution system the day following an exceedance of the chlorine dioxide MRDL at the SEP is also an MRDL violation. For either violation, the system must provide notice pursuant to the Tier 1 PN requirements in 567—subrule 40.5(2), and report to the department pursuant to 567—paragraph 40.8(3)“d.”

2. Nonacute violations. Compliance must be based on consecutive daily samples collected under 43.6(1)“c”(3). If any two consecutive daily samples taken at the SEP exceed the MRDL and all distribution system samples taken are below the MRDL, the system is in violation of the MRDL and must take corrective action to lower the level of chlorine dioxide below the MRDL at the point of sampling. Failure to monitor at the SEP the day following an exceedance of the chlorine dioxide MRDL at the SEP is also an MRDL violation. For either violation, the system must provide notice pursuant to the Tier 2 PN requirements in 567—subrule 40.5(3), and report to the department pursuant to 567—paragraph 40.8(3)“d.”

f. Reporting requirements for disinfectants. Systems required to sample quarterly or more frequently must report to the department within ten days after the end of each quarter in which samples were collected, notwithstanding the PN provisions of rule 567—40.5(455B). Systems required to sample less frequently than quarterly must report to the department within ten days after the end of each monitoring period in which samples were collected. Other disinfectant reporting requirements are in 567—subparagraph 40.8(3)“d”(3).

43.6(2) DBP precursors.

a. Applicability.

(1) SW or IGW CWS and NTNC systems with conventional filtration. This rule establishes criteria under which SW or IGW CWSs and NTNCs using conventional filtration treatment that either add a chemical disinfectant to the water in any part of the drinking water treatment process, or that provide water that contains a chemical disinfectant, must modify their practices to meet the MCLs in 567—41.6(455B) and the MRDL and TT requirements for DBP precursors in this rule.

(2) CWSs and NTNCs that use ozone in their treatment process must comply with the bromide requirements of this subrule.

(3) Compliance dates for this rule are based upon the population served. CWS and NTNC systems using SW or IGW in whole or in part and that serve 10,000 or more persons must comply with this rule beginning January 1, 2002; while those systems serving fewer than 10,000 persons must comply with this rule beginning January 1, 2004.

(4) The department may require GW systems to monitor DBP precursors as a part of an operation permit.

b. DBP precursor monitoring requirements.

(1) Routine total organic carbon (TOC) monitoring.

1. SW and IGW systems using conventional filtration treatment must monitor each treatment plant for TOC no later than at the point of CFE turbidity monitoring and representative of the treated water. The systems must also monitor for TOC in the source water prior to any treatment, at the same time as monitoring for TOC in the treated water. These samples (source water and treated water) are referred to as paired samples. At the same time the source water sample is taken, all systems must monitor for alkalinity in the source water prior to any treatment. Systems must take one paired set of samples and one source

water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

2. SW and IGW systems that do not use conventional filtration treatment must conduct the TOC monitoring under 43.6(2) “b”(1)“1” in order to qualify for reduced DBP monitoring for TTHM and HAA5 under ~~567—~~paragraph 41.6(1) “c”(4)“2.” The source water TOC RAA must be less than or equal to 4.0 mg/L based on the most recent four quarters of monitoring on a continuing basis at each treatment plant to reduce or remain on reduced TTHM and HAA5 monitoring. Once qualified for reduced TTHM and HAA5 monitoring, a system may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location prior to any treatment.

(2) Reduced monitoring. The department may allow SW and IGW systems with an average treated water TOC of less than 2.0 mg/L for two consecutive years, or less than 1.0 mg/L for one year, to reduce monitoring for both TOC and alkalinity to one set of paired samples and one source water alkalinity sample per plant per quarter. The system must revert to routine monitoring in the month following the quarter when the annual average treated water TOC is greater than or equal to 2.0 mg/L.

(3) Bromide. The department may allow systems required to analyze for bromate to reduce bromate monitoring from monthly to once per quarter, if a system demonstrates that the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly measurements for one year. A system must continue bromide monitoring to remain on reduced bromate monitoring.

(4) The department may assign DBP precursor monitoring prior to the compliance dates in 43.6(2) “a”(3) as part of an operation permit.

c. DBP analytical requirements.

(1) Analytical methods. DBP precursors must be analyzed using the following methods by a laboratory certified in accordance with 567—Chapter 83, unless otherwise specified.

Approved Methods for DBP Precursor Monitoring¹

Analyte	Methodology	EPA	SM	ASTM	Other
Alkalinity ⁶	Titrimetric		2320B	D 1067-92B	
	Electrometric titration				I-1030-85
Bromide	Ion chromatography	300.0, 300.1, 317.0 Rev. 2.0, 326.0		D 6581-00	
Dissolved Organic Carbon ² (DOC)	High temperature combustion	415.3 Rev. 1.2	5310B or 5310B-00		
	Persulfate-UV or heated-persulfate oxidation	415.3 Rev. 1.2	5310C or 5310C-00		
	Wet oxidation	415.3 Rev. 1.1, 415.3 Rev. 1.2	5310D or 5310D-00		
pH ³	Electrometric	150.1, 150.2	4500-H ⁺ -B	D 1293-84	
SUVA	Calculation using DOC and UV ₂₅₄ data	415.3 Rev. 1.2			
TOC ⁴	High temperature combustion	415.3 Rev. 1.2	5310B or 5310B-00		
	Persulfate-UV or heated-persulfate oxidation	415.3 Rev. 1.2	5310C or 5310C-00		Hach Method 10267 ⁷
	Wet oxidation	415.3 Rev. 1.1, 415.3 Rev. 1.2	5310D or 5310D-00		
	Ozone oxidation				Hach Method 10261 ⁸
UV Absorption at 254 nm ⁵	Spectrophotometry	415.3 Rev. 1.1, 415.3 Rev. 1.2	5910B or 5910B-00, 11		

¹The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents was approved by the Director of the Federal Register on February 16, 1999, in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. The document sources are listed below, and further document information is available from the Safe Drinking Water Hotline, 800.426.4791. Documents may be inspected at EPA's Drinking Water Docket or at the Office of Federal Register.

ASTM Methods: ASTM, Volume 11.01, 1996: Method D 1067-92B and Method D 1293-84. ASTM Volume 11.01, 2001 (or any year containing the cited version): Method D 6581-00.

The following methods are available from the NTIS:

"Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0," EPA-600/R-98/118, 1997 (NTIS, PB98-169196): Method 300.1.

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, (NTIS PB84-128677): Methods 150.1 and 150.2.

Methods for the Determination of Inorganic Substances in Environmental Samples, EPA-600/R-93/100, August 1993, (NTIS PB94-121811): Method 300.0.

“Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography with the Addition of a Postcolumn Reagent for Trace Bromate Analysis, Revision 2.0,” July 2001, EPA 815-B-01-001: Method 317.0.

“Determination of Inorganic Oxyhalide Disinfection By-Products in Drinking Water Using Ion Chromatography Incorporating the Addition of a Suppressor Acidified Postcolumn Reagent for Trace Bromate Analysis, Revision 1.0,” June 2002, EPA 815-R-03-007: Method 326.0.

“Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water, Revision 1.1,” February 2005, EPA/600/R-05/055: Method 415.3 Revision 1.1.

“Determination of Total Organic Carbon and Specific UV Absorbance at 254 nm in Source Water and Drinking Water, Revision 1.2,” September 2009, EPA/600/R-09/122: Method 415.3 Revision 1.2.

SM 19th (1995), 21st (2005), 22nd (2012), and 23rd (2017) editions, Methods: 2320B (20th edition, 1998, is also accepted for this method), 4500-H⁺-B, and 5910B (22nd edition, 2012, is also accepted for this method). Supplement to the 19th (1996), 21st (2005), and 22nd (2012) editions, Methods: 5310B, 5310C, and 5310D. 23rd edition, Methods 5310B and 5310C.

For method numbers ending “-00”, the year in which each method was approved by the Standard Methods Committee is designated by the last two digits in the method number. The methods listed are the only online versions that are IBR-approved.

Method I-1030-85, Books and Open-File Reports Section, USGS, Federal Center, Box 25425, Denver, CO 80225-0425.

²DOC and UV₂₅₄ samples used to determine a SUVA value must be taken at the same time and at the same location, prior to the addition of any disinfectant or oxidant by the system. Prior to analysis, filter DOC samples through a 0.45 μ pore-diameter filter, as soon as practical after sampling, not to exceed 48 hours. After filtration, DOC samples must be acidified to achieve pH less than or equal to 2 with minimal addition of the acid specified in the method or by the instrument manufacturer. Acidified DOC samples must be analyzed within 28 days. Remove inorganic carbon from the samples prior to analysis. Water passed through the filter prior to filtration of the sample must serve as the filtered blank. This filtered blank must be analyzed using procedures identical to those used for analysis of the samples and must meet a DOC concentration of <0.5 mg/L.

³pH must be measured by a laboratory certified in accordance with 567—Chapter 83; a Grade II, III or IV operator meeting the requirements of 567—Chapter 81; or any person under the supervision of any such operator.

⁴Remove inorganic carbon from the TOC samples prior to analysis. TOC samples may not be filtered prior to analysis. TOC samples must be acidified at the time of sample collection to achieve a pH less than or equal to 2 with minimal addition

of the acid specified in the method or by the instrument manufacturer. Acidified TOC samples must be analyzed within 28 days.

⁵DOC and UV₂₅₄ samples used to determine a SUVA value must be taken at the same time and at the same location, prior to the addition of any disinfectant or oxidant by the system. Measure UV absorption at 253.7 nm (may be rounded off to 254 nm). Prior to analysis, filter UV₂₅₄ samples through a 0.45 μ pore-diameter filter. The pH of UV₂₅₄ samples may not be adjusted. Samples must be analyzed as soon as practical after sampling, not to exceed 48 hours.

⁶Alkalinity must be measured by a laboratory certified in accordance with 567—Chapter 83; a Grade II, III or IV operator meeting the requirements of 567—Chapter 81; or any person under the supervision of any such operator. Only the listed titrimetric methods are acceptable.

⁷Hach Company. “Hach Method 10267 – Spectrophotometric Measurement of TOC in Finished Drinking Water,” December 2015, Revision 1.2, www.hach.com.

⁸Hach Company. “Hach Method 10261 – Total Organic Carbon in Finished Drinking Water by Catalyzed Ozone Hydroxyl Radical Oxidation Infrared Analysis,” December 2015, Revision 1.2, www.hach.com.

(2) SUVA. SUVA is equal to the UV absorption at 254 nm (UV₂₅₄) (measured in m⁻¹) divided by the DOC concentration (in mg/L). To determine SUVA, systems must separately measure UV₂₅₄ and DOC using the methods above in 43.6(2) “c”(1). SUVA must be determined prior to the addition of disinfectants/oxidants. DOC and UV₂₅₄ samples used to determine a SUVA value must be taken at the same time and at the same location.

(3) Magnesium. All methods approved for magnesium in 567—subparagraph 41.3(1) “e”(1) are approved for use in measuring magnesium under this rule.

d. DBP precursor compliance requirements.

(1) General requirements. All samples taken and analyzed under this rule must be included in determining compliance, even if that number is greater than the minimum required.

(2) Compliance determination. Compliance must be determined as specified in 43.6(3) “c.” The department may assign monitoring in an operation permit, or systems may begin monitoring to determine whether Step 1 TOC removals can be met 12 months prior to the compliance date for the system. This monitoring is not required and failure to monitor during this period is not a violation. However, any system that does not monitor during this

period and then determines in the first 12 months after the compliance date that it is not able to meet the Step 1 requirements in 43.6(3) “b”(2), and must therefore apply for alternate minimum TOC removal (Step 2) requirements, is not eligible for retroactive approval of alternate minimum TOC removal (Step 2) requirements as allowed in 43.6(3) “b”(3) and is in violation. Systems may apply for alternate minimum TOC removal (Step 2) requirements anytime after the compliance date. For systems required to meet Step 1 TOC removals, if the value calculated under 43.6(3) “c”(1) “4” is less than 1.00, the system is in violation of the TT requirements and must provide PN pursuant to 567—40.5(455B), in addition to reporting to the department pursuant to 567—paragraph 40.8(3) “d.”

e. Reporting requirements for DBP precursors. Systems required to sample quarterly or more frequently must report to the department within ten days after the end of each quarter in which samples were collected, notwithstanding the PN provisions of 567—40.5(455B). Systems required to sample less frequently than quarterly must report to the department within ten days after the end of each monitoring period in which samples were collected. The specific reporting requirements for DBP precursors are in 567—subparagraph 40.8(3) “d”(4).

43.6(3) TT for DBP precursor control.

a. Applicability.

(1) Systems using SW or IGW and conventional filtration treatment must operate with enhanced coagulation or enhanced softening to achieve the TOC percent removal levels in 43.6(3) “b” unless the system meets at least one of the alternative compliance criteria in 43.6(3) “a”(2) or 43.6(3) “a”(3).

(2) Alternative compliance criteria for enhanced coagulation and enhanced softening systems. Systems using SW or IGW and conventional filtration treatment may use the alternative compliance criteria in this subparagraph to comply with this subrule in lieu of complying with 43.6(3) “b.” Systems must still comply with monitoring requirements in

43.6(2)“b.” TOC levels and source water alkalinity must be measured according to 43.6(2)“c”(1) and the SUVA must be measured monthly according to 43.6(2)“c.”

1. The source water TOC level is less than 2.0 mg/L, calculated quarterly as a running annual average (RAA).

2. The treated water TOC level is less than 2.0 mg/L, calculated quarterly as an RAA.

3. The source water TOC level is less than 4.0 mg/L, calculated quarterly as an RAA; the source water alkalinity is greater than 60 mg/L as CaCO₃, calculated quarterly as an RAA; and either the TTHM and HAA5 RAAs are no greater than 0.040 mg/L and 0.030 mg/L, respectively; or prior to the effective date for compliance in 567—subparagraphs 41.6(1)“a”(3) and 43.6(2)“a”(3), the system has made a clear and irrevocable financial commitment to use of technologies that will limit the levels of TTHMs and HAA5 to no more than 0.040 mg/L and 0.030 mg/L, respectively. Systems must submit evidence of a clear and irrevocable financial commitment, in addition to a schedule containing milestones and periodic progress reports for installation and operation of appropriate technologies, to the department for approval not later than the effective date for compliance in 567—subparagraphs 41.6(1)“a”(3) and 43.6(2)“a”(3). These technologies must be installed and operating not later than June 30, 2005. Failure to install and operate these technologies by the date in the approved schedule will constitute a TT violation.

4. The TTHM and HAA5 RAAs are less than or equal to 0.040 mg/L and 0.030 mg/L, respectively, and the system uses only chlorine for primary disinfection and maintenance of a residual in the distribution system.

5. The source water SUVA, prior to any treatment, is less than or equal to 2.0 L/mg-m, calculated quarterly as an RAA.

6. The finished water SUVA is less than or equal to 2.0 L/mg-m, calculated quarterly as an RAA.

(3) Additional alternative compliance criteria for softening systems. Systems practicing enhanced softening that cannot achieve the TOC removals required by 43.6(3) “b”(2) may use the alternative compliance criteria in this subparagraph in lieu of complying with 43.6(3) “b.” Systems must still comply with monitoring requirements in 43.6(2) “b.”

1. Softening that lowers the treated water alkalinity to less than 60 mg/L as CaCO₃, measured monthly according to 43.6(2) “c” and calculated quarterly as an RAA.

2. Softening that removes at least 10 mg/L of magnesium hardness as CaCO₃, measured monthly and calculated quarterly as an RAA.

b. Enhanced coagulation and enhanced softening performance requirements.

(1) Systems must achieve the TOC percent reduction in 43.6(3) “b”(2) between the source water and the CFE, unless the department approves a system’s request for alternate minimum TOC removal (Step 2 requirements under 43.6(3) “b”(3)).

(2) Required Step 1 TOC reductions, indicated in the following table, are based upon specified source water parameters measured in accordance with 43.6(2) “c.” Systems using softening must meet the Step 1 TOC reductions in the right-hand column (> 120 mg/L) for the specified source water TOC:

Step 1 Required TOC Removal by Enhanced Coagulation and Enhanced Softening for SW or IGW Systems Using Conventional Treatment^{1,2}

Source water TOC, mg/L	Source water Alkalinity, mg/L as CaCO ₃		
	0-60	>60-120	>120 ³
>2.0 - 4.0	35.0%	25.0%	15.0%
>4.0 - 8.0	45.0%	35.0%	25.0%
>8.0	50.0%	40.0%	30.0%

¹Systems meeting at least one of the conditions in 43.6(3) “a”(2) “1” through “6” are not required to operate with enhanced coagulation.

²Softening systems meeting one of the alternative compliance criteria in 43.6(3) “a”(3) are not required to operate with enhanced softening.

³Systems practicing softening must meet the TOC removal requirements in this column.

(3) SW and IGW systems using conventional treatment that cannot achieve the Step 1 TOC removals required by 43.6(3) “b”(2) due to water quality parameters (WQPs) or operational constraints must apply to the department for approval of alternative minimum Step 2 TOC removal requirements submitted by the system within three months of failure to achieve the TOC removals. If the department approves the alternative minimum Step 2 TOC removal requirements, it may make those requirements retroactive for the purposes of determining compliance. The system must meet the Step 1 TOC removals in 43.6(3) “b”(2) until the department approves the alternate minimum Step 2 TOC removal requirements.

(4) Alternate minimum Step 2 TOC removal requirements. Applications made to the department by enhanced coagulation systems for approval of alternate minimum Step 2 TOC removal requirements under 43.6(3) “b”(3) must include, as a minimum, results of bench-scale or pilot-scale testing conducted under 43.6(3) “b”(4) “1” below and used to determine the alternate enhanced coagulation level.

1. Alternate enhanced coagulation level is defined as coagulation at a coagulant dose and pH as determined by the method described in this subparagraph such that an incremental addition of 10 mg/L of alum (or equivalent amount of ferric salt) results in a TOC removal of less than or equal to 0.3 mg/L. The TOC percent removal at this point on the “TOC removal versus coagulant dose” curve is then defined as the minimum TOC removal required for the system. Once approved by the department, this minimum requirement supersedes the minimum TOC removal required by the table in 43.6(3) “b”(2). This requirement will be effective until such time as the department approves a new value based on the results of a new bench-scale or pilot-scale test. Failure to achieve department-set alternative minimum TOC removal levels is a TT violation.

2. Conduct bench-scale or pilot-scale testing of enhanced coagulation using representative water samples and adding 10 mg/L increments of alum (or equivalent amounts of ferric salt)

until the pH is reduced to a level less than or equal to the enhanced coagulation Step 2 target pH shown in the following table:

Enhanced Coagulation Step 2 Target pH

Alkalinity (mg/L as CaCO ₃)	Target pH
0 - 60	5.5
>60 - 120	6.3
>120 - 240	7.0
>240	7.5

3. For waters with alkalinities of less than 60 mg/L for which addition of small amounts of alum or equivalent addition of iron coagulant drives the pH below 5.5 before significant TOC removal occurs, a system must add necessary chemicals to maintain the pH between 5.3 and 5.7 in samples until the TOC removal of 0.3 mg/L per 10 mg/L alum added (or equivalent addition of iron coagulant) is reached.

4. A system may operate at any coagulant dose or pH necessary (consistent with department rules) to achieve the minimum TOC percent removal approved under 43.6(3)“b”(3).

5. If the TOC removal is consistently less than 0.3 mg/L of TOC per 10 mg/L of incremental alum dose at all dosages of alum (or equivalent addition of iron coagulant), the water is deemed to contain TOC not amenable to enhanced coagulation. The system may then apply to the department for a waiver of enhanced coagulation requirements.

c. Compliance calculations.

(1) SW or IGW systems other than those identified in 43.6(3)“a”(2) or 43.6(3)“a”(3) must comply with requirements in 43.6(3)“b”(2) or 43.6(3)“b”(3). Systems must calculate compliance quarterly, beginning after the collection of 12 months of data, by determining an annual average using the following method:

1. Step 1: Determine actual monthly TOC percent removal using the following equation, to two decimal places:

$$\text{Actual monthly TOC percent removal} = 1 - \left(\frac{\text{treated water TOC}}{\text{source water TOC}} \right) \times 100$$

2. Step 2: Determine the required monthly TOC percent removal from either 43.6(3) “b”(2) or 43.6(3) “b”(3).

3. Step 3: Divide the “actual monthly TOC percent removal” value (from Step 1) by the “required monthly TOC percent removal” value (from Step 2). Determine this value for each of the last 12 months.

$$\text{Monthly percent removal ratio} = \frac{\text{actual monthly TOC percent removal}}{\text{required monthly TOC percent removal}}$$

4. Step 4: Add together the “monthly percent removal ratio” values from Step 3 for each of the last 12 months and divide by 12 to determine the annual average value.

$$\text{Annual average} = \frac{\Sigma \text{ monthly percent removal ratio}}{12}$$

5. Step 5: If the “annual average” value calculated in Step 4 is less than 1.00, the system is not in compliance with the TOC percent removal requirements.

(2) Systems may use the provisions in this subparagraph in lieu of the calculations in the previous subparagraph (43.6(3) “c”(1)) to determine compliance with TOC percent removal requirements. Systems may assign a monthly value of 1.0 (in lieu of the value calculated in 43.6(3) “c”(1)“3”) when calculating compliance under 43.6(3) “c”(1), in any month that:

1. The system’s treated or source water TOC level, measured according to 43.6(2) “c”(1), is less than 2.0 mg/L;

2. A system practicing softening removes at least 10 mg/L of magnesium hardness as CaCO₃;

3. The system’s source water SUVA, prior to any treatment and measured according to 43.6(2) “c”(2), is less than or equal to 2.0 L/mg-m;

4. The system's finished water SUVA, measured according to 43.6(2) "c"(2), is less than or equal to 2.0 L/mg-m; or

5. A system using enhanced softening lowers alkalinity below 60 mg/L as CaCO₃.

(3) SW or IGW systems using conventional treatment may also comply with this subrule by meeting the criteria in 43.6(3) "a"(2) or 43.6(3) "a"(3).

d. TT requirements for DBP precursors. The TTs to control the level of DBP precursors in drinking water treatment and distribution systems for SW or IGW systems using conventional filtration treatment are enhanced coagulation or enhanced softening.

567—43.7(455B) Lead and copper treatment techniques (TTs).

43.7(1) *Corrosion control treatment (CCT) for lead and copper control.*

a. Applicability. Systems shall complete the applicable CCT requirements by the deadlines specified in the following rules:

(1) Large systems serving more than 50,000 persons. A large system (serving greater than 50,000 persons) shall complete the CCT steps in 43.7(1) "d," unless the system is deemed to have OCC under 43.7(1) "b"(2) or 43.7(1) "b"(3).

(2) Small and medium-size systems serving 50,000 or fewer persons. A small system (serving less than or equal to 3,300 persons) or a medium-size system (serving greater than 3,300 and less than or equal to 50,000 persons) shall complete the CCT steps in 43.7(1) "e," unless the system has OCC under 43.7(1) "b"(1), 43.7(1) "b"(2), or 43.7(1) "b"(3).

b. Determination that a system has optimized corrosion control (OCC). A PWS has OCC and is not required to complete the applicable CCT steps in this subrule if the system satisfies one of the criteria in 43.7(1) "b"(1) through 43.7(1) "b"(3). Any system deemed to have OCC under this paragraph and that has treatment in place shall continue to operate and maintain optimal corrosion control treatment (OCCT) and meet any requirements that the department determines appropriate to ensure OCCT is maintained.

(1) A small or medium-size PWS has optimized CCT if the system meets the lead and copper ALs during each of two consecutive six-month monitoring periods, conducted in accordance with 567—paragraph 41.4(1) “c.”

(2) Any PWS may be deemed to have optimized CCT if it demonstrates to the department’s satisfaction that it has conducted activities equivalent to the corrosion control steps applicable to such system under this subrule. If the department makes this determination, it shall provide the PWS with written notice explaining the basis for its decision and shall specify the WQPs representing OCC in accordance with 43.7(2) “f.” Systems deemed to have OCCT under this paragraph shall operate in compliance with the department-designated OWQPs in accordance with 43.7(1) “g” and continue to conduct lead and copper tap and WQP sampling in accordance with 567—paragraph 41.4(1) “c”(4)“3” and (4), respectively. A system shall provide the department with the following information to support a determination under this paragraph:

1. The results of all samples collected for each of the WQPs in 43.7(2) “c”(3);
2. A report explaining the test methods used by the system to evaluate the CCTs in 43.7(2) “c”(1), the results of all testing, and the basis for the system’s selection of OCCT;
3. A report explaining how CCT was installed and how it is being maintained to ensure minimal lead and copper concentrations at consumers’ taps; and
4. The results of tap water samples collected in accordance with 567—paragraph 41.4(1) “c” at least once every six months for one year after CCT has been installed.

(3) Any system has OCCT if it submits results of tap water monitoring conducted in accordance with 567—paragraph 41.4(1) “c” and source water monitoring conducted in accordance with 567—paragraph 41.4(1) “e” that demonstrate, for two consecutive six-month monitoring periods, that the difference between the 90th percentile tap water lead level computed under 567—subparagraph 41.4(1) “b”(3) and the highest source water lead

concentration is less than the practical quantitation level for lead in 567—paragraph 41.4(1) “g.” Pursuant to this paragraph:

1. Those systems whose highest source water lead level is below the method detection limit may also be deemed to have OCCT if the 90th percentile tap water lead level is less than or equal to the lead PQL for two consecutive six-month monitoring periods.

2. Any system deemed to have OCC shall continue lead and copper monitoring at the tap no less frequently than once every three calendar years using the reduced number of sites specified in 567—subparagraph 41.4(1) “c”(3) and collecting the samples at times and locations specified in 567—paragraph 41.4(1) “c”(4)“4,” fourth bulleted paragraph.

3. Any system deemed to have OCC shall notify the department in writing of any upcoming long-term change in treatment or the addition of a new source, pursuant to 567—subparagraph 40.8(2) “a”(3). The department must review and approve the addition of a new source or long-term change in water treatment before it is implemented by the water system.

4. Unless a system meets the copper AL, it is not deemed to have OCCT and shall implement CCT pursuant to 43.7(1) “b”(3)“5.”

5. Any system triggered into corrosion control because it is no longer deemed to have OCCT shall implement CCT in accordance with 43.7(1)“e.” Any such large system shall adhere to the schedule specified in that paragraph for medium-size systems, with the time periods for completing each step being triggered by the date the system is no longer deemed to have OCC.

c. Requirements to recommence corrosion control steps. Any small or medium-size system required to complete the corrosion control steps due to its exceedance of the lead or copper AL may cease completing the treatment steps when it meets both ALs during each of two consecutive monitoring periods conducted pursuant to 567—paragraph 41.4(1) “c” and submits the results to the department. If any such system thereafter exceeds the lead or copper

AL during any monitoring period, it shall recommence completion of the applicable treatment steps, beginning with the first treatment step that was not previously completed in its entirety. The department may require a system to repeat previously completed steps when it determines the steps are necessary to properly implement the treatment requirements of this rule. The department will notify the system of such a determination in writing and explain the basis for its decision. The requirement for any small or medium-size system to implement CCT steps in accordance with 43.7(1) “e” (including systems deemed to have OCC under 43.7(1) “b”(1)) is triggered when any such system exceeds the lead or copper AL.

d. Treatment steps and deadlines for large systems. Except as provided in 43.7(1) “b”(2) or 43.7(1) “b”(3), large systems shall complete the following CCT steps (described in the rules referenced below) by the indicated dates:

(1) Step 1. The system shall conduct initial monitoring pursuant to 567—paragraph 41.4(1) “c”(4)“1” and 567—subparagraph 41.4(1) “d”(2) during two consecutive six-month monitoring periods by January 1, 1993.

(2) Step 2. The system shall complete corrosion control studies pursuant to 43.7(2) “c” by July 1, 1994.

(3) Step 3. The department will designate OCCT within six months of receiving the corrosion control study results.

(4) Step 4. The system shall install OCCT by January 1, 1997.

(5) Step 5. The system shall complete follow-up sampling pursuant to 567—paragraph 41.4(1) “c”(4)“2” and 567—subparagraph 41.4(1) “d”(3) by January 1, 1998.

(6) Step 6. The department will review installation of treatment and designate OWQPs pursuant to 43.7(2) “f” by July 1, 1998.

(7) Step 7. The system shall operate in compliance with OWQPs delineated by the department and continue to conduct tap sampling.

e. Treatment steps and deadlines for small and medium-size systems. Except as provided in 43.7(2), small and medium-size systems shall complete the following CCT steps (described in the rules referenced below) by the indicated time periods:

(1) Step 1. A system shall conduct initial tap sampling pursuant to ~~567—paragraph 41.4(1) “c”(4)“1”~~ and ~~567—subparagraph 41.4(1) “d”(2)~~ until it either exceeds the lead or copper AL or becomes eligible for reduced monitoring under ~~567—paragraph 41.4(1) “c”(4)“4.”~~ A system exceeding the lead or copper AL shall recommend OCCT under 43.7(2) “a” within six months after the end of the monitoring period during which it exceeds one of the ALs.

(2) Step 2. Within 12 months after the end of the monitoring period during which a system exceeds the lead or copper AL, the department may require the system to perform corrosion control studies under 43.7(2) “b.” If the system is not required to perform such studies, the department will specify OCCT under 43.7(2) “d” as follows: for medium-size systems, within 18 months after the end of the monitoring period during which such system exceeds the lead or copper AL, and, for small systems, within 24 months after the end of the monitoring period during which such system exceeds the lead or copper AL.

(3) Step 3. If a system is required to perform corrosion control studies under Step 2, it shall complete the studies (under 43.7(2) “c”) within 18 months after such studies are required to commence.

(4) Step 4. If the system has performed corrosion control studies under Step 2, the department will designate OCCT under 43.7(2) “d” within six months after completion of Step 3.

(5) Step 5. Systems shall install OCCT under 43.7(2) “e” within 24 months after such treatment is designated.

(6) Step 6. Systems shall complete follow-up sampling pursuant to 567—paragraph 41.4(1) “c”(4)“2” and 567—subparagraph 41.4(1) “d”(3) within 36 months after OCCT is designated.

(7) Step 7. The department will review a system’s installation of treatment and designate OWQPs pursuant to 43.7(2) “f” within six months after completion of Step 6.

(8) Step 8. Systems shall operate in compliance with the department-designated OWQPs under 43.7(2) “f” (and continue to conduct tap sampling per 567—paragraphs 41.4(1) “c”(4)“3” and 41.4(1) “d”(4)).

43.7(2) CCT requirements. Each PWS shall complete the CCT requirements described below that are applicable to such systems under 43.7(1).

a. PWS recommendation. Based on the results of lead and copper tap monitoring and WQP monitoring, small and medium-size systems exceeding the lead or copper AL shall recommend installation of one or more of the CCTs in 43.7(2) “c” that the system believes constitute OCC. The department may require a system to conduct additional WQP monitoring in accordance with 567—subparagraph 41.4(1) “d”(2) to assist in reviewing the system’s recommendation.

b. Department decision to require CCT studies (small and medium-size systems). The department may require any small or medium-size system that exceeds the lead or copper AL to perform corrosion control studies under 43.7(2) “c” to identify OCCT.

c. Performance of corrosion control studies.

(1) Any PWS performing corrosion control studies shall evaluate the effectiveness of each of the following treatments and, if appropriate, combinations of the following treatments to identify the OCCT: alkalinity and pH adjustment; calcium hardness adjustment; and phosphate or silicate-based corrosion inhibitor addition at a concentration sufficient to maintain an effective residual concentration in all test tap samples.

(2) PWSs shall evaluate each of the CCTs using either pipe rig/loop tests, metal coupon tests, partial-system tests, or analyses based on documented analogous treatments with other systems of similar size, water chemistry, and distribution system configuration.

(3) PWSs shall measure the following WQPs in any tests conducted under this paragraph before and after evaluating the CCTs listed above:

1. Lead;
2. Copper;
3. pH;
4. Alkalinity;
5. Calcium;
6. Conductivity;
7. Orthophosphate (when an inhibitor containing a phosphate compound is used);
8. Silicate (when an inhibitor containing a silicate compound is used); and
9. Water temperature.

(4) PWSs shall identify all chemical or physical constraints that limit or prohibit the use of a particular CCT and outline such constraints with data and documentation either showing that a particular CCT has adversely affected other water treatment processes when used by another system with comparable water quality characteristics; or demonstrating that the system has previously attempted to evaluate a particular CCT and has found that the treatment is ineffective or adversely affects other water quality treatment processes.

(5) Systems shall evaluate the effect of the chemicals used for CCT on other water quality treatment processes.

(6) Based on analysis of the data generated during each evaluation, a system shall recommend in writing to the department the treatment option that the corrosion control studies

indicate constitutes OCCT for that system. The system shall provide a rationale for its recommendation along with all supporting documentation required by this paragraph.

d. Department designation of OCCT.

(1) Based on consideration of available information including, where applicable, studies performed under 43.7(2)“c” and a system’s recommended treatment alternative, the department will either approve the CCT option recommended by the PWS, or designate alternative treatment(s) from among those listed in 43.7(2)“c.” The department will consider the effects that additional treatment will have on WQPs and on other water treatment processes.

(2) The department will notify a PWS of its decision on OCCT in writing and explain the basis for this determination. If the department requests additional information to aid its review, a PWS shall provide the information.

e. Installation of OCC. Each PWS shall properly install and operate throughout its distribution system the OCCT designated under 43.7(2)“d.”

f. Department review of treatment and specification of optimal water quality control parameters (OWQPs).

(1) The department will evaluate the results of all lead and copper tap samples and WQP samples submitted by a PWS and determine whether the system has properly installed and operated the OCCT designated in 43.7(2)“d.” After reviewing the sampling results , both before and after a system installs optimal treatment, the department will designate the following:

1. A minimum value or a range of values for pH measured at each SEP;
2. A minimum pH value, measured in all tap samples. Such value shall be equal to or greater than 7.0 unless meeting a pH level of 7.0 is not technologically feasible or is not necessary for the PWS to optimize corrosion control;

3. If a corrosion inhibitor is used, a minimum concentration or a range of concentrations for the inhibitor, measured at each SEP and in all tap samples, necessary to form a passivating film on the interior walls of the pipes of the distribution system;

4. If alkalinity is adjusted as part of OCCT, a minimum concentration or a range of concentrations for alkalinity, measured at each SEP and in all tap samples; or

5. If calcium carbonate stabilization is used as part of corrosion control, a minimum concentration or a range of concentrations for calcium, measured in all tap samples.

(2) The values for the applicable WQPs listed above shall be those reflecting OCCT for a PWS. The department may designate values for additional WQPs determined to reflect OCC for the system. The department will notify the system in writing of these determinations and explain the basis for its decisions.

g. Continued operation with OCC and WQP monitoring compliance determination. In accordance with this paragraph, all systems optimizing corrosion control shall continue to operate and maintain OCCT, including maintaining WQPs at or above minimum values or within ranges designated by the department under 43.7(2) “f,” for all samples collected under 567—subparagraphs 41.4(1) “d”(4) through 41.4(1) “d”(6). Compliance with this paragraph shall be determined every six months, as specified in 567—subparagraph 41.4(1) “d”(4). A system is out of compliance with this paragraph for a six-month period if it has excursions for any department-specified parameter on more than nine days during the period. An excursion occurs when the daily value for one or more of the WQPs measured at a sampling location is below the minimum value or outside the department-designated range. The department has the discretion to invalidate results of obvious sampling errors from this calculation. Daily values for WQPs collected at a single sampling location are calculated as follows.

(1) On days when more than one measurement for the WQP is collected, the daily value shall be the average of all results collected during the day regardless of whether they are collected through continuous monitoring, grab sampling, or a combination of both.

(2) On days when only one measurement for the WQP is collected, the daily value shall be the result of that measurement.

(3) On days when no measurement is collected for the WQP, the daily value shall be the daily value calculated on the most recent day that the WQP was measured at the sample site.

h. Modification of department treatment decisions. A determination of the OCCT under 43.7(2)“d” or OWQPs under 43.7(2)“f” may be modified. A modification request from a PWS or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The department may modify its determination when it concludes that such change is necessary to ensure that a PWS continues to optimize CCT. A revised determination will be made in writing, set forth the new treatment requirements, explain the basis for the decision, and provide an implementation schedule for completing treatment modifications.

43.7(3) *Source water treatment requirements.* PWSs shall complete the applicable source water monitoring and treatment requirements, as described in the referenced portions of 43.7(3)“b,” and in 567—paragraphs 41.4(1)“c” and “e,” by the following deadlines.

a. Deadlines for completing source water treatment steps.

(1) Step 1. A PWS exceeding the lead or copper AL shall complete lead and copper source water monitoring under 567—subparagraph 41.4(1)“e”(2) and make a written treatment recommendation to the department no later than 180 days after the end of the monitoring period during which the lead or copper AL was exceeded.

(2) Step 2. The department will make a determination regarding source water treatment pursuant to 43.7(3)“b”(2) within six months after submission of monitoring results under Step 1.

(3) Step 3. If installation of source water treatment is required, the system shall install treatment pursuant to 43.7(3)“b”(3) within 24 months after completion of Step 2.

(4) Step 4. A PWS shall complete follow-up tap water monitoring under 567—paragraph 41.4(1)“c”(4)“2” and source water monitoring under 567—subparagraph 41.4(1)“e”(3) within 36 months after completion of Step 2.

(5) Step 5. The department will review the system’s installation and operation of source water treatment and specify maximum permissible source water levels under 43.7(3)“b”(4) within six months after completion of Step 4.

(6) Step 6. A PWS shall operate in compliance with the maximum permissible lead and copper source water levels in 43.7(3)“b”(4) and continue source water monitoring pursuant to 567—subparagraph 41.4(1)“e”(4).

b. Description of treatment requirements.

(1) System treatment recommendation. Any system that exceeds the lead or copper AL shall recommend in writing to the department the installation and operation of one of the source water treatments in 43.7(3)“b”(2). A system may recommend that no treatment be installed based upon a demonstration that source water treatment is not necessary to minimize lead and copper levels at users’ taps.

(2) Source water treatment determinations. The department will evaluate the results of all source water samples submitted by a PWS to determine whether source water treatment is necessary to minimize lead or copper levels in water delivered to users’ taps. If the department determines that treatment is needed, it will require installation and operation of the source water treatment recommended by the PWS or require the installation and operation of another

source water treatment from among the following: ion exchange, reverse osmosis, lime softening, or coagulation/filtration. If the department requests additional information to aid in its review, the PWS shall provide the information by the specified date. The department will notify the system in writing of its determination and set forth the basis for its decision.

(3) Source water treatment installation. PWSs shall properly install and operate the source water treatment designated by the department under 43.7(3) “b”(2).

(4) Department review and specification. The department will review a system’s source water samples both before and after the installation of source water treatment and determine whether the system has properly installed and operated the designated treatment. After the review, the department will designate maximum permissible lead and copper concentrations for finished water entering the distribution system. Such levels shall reflect the contaminant removal capability of the treatment (properly operated and maintained). The department will notify the PWS in writing and explain the basis for its decision.

(5) Continued operation and maintenance. Each PWS shall maintain lead and copper levels below the maximum permissible concentrations designated by the department at each sampling point monitored in accordance with 567—paragraph 41.4(1) “e.” A system is out of compliance with this paragraph if the lead or copper level at any sampling point is greater than the maximum permissible designated concentration.

(6) Modification of decisions. The department may modify its determinations of the source water treatment or maximum permissible lead and copper concentrations made under subparagraphs (2) and (4) of this paragraph. A modification request from a PWS or other interested party shall be in writing, explain why the modification is appropriate, and provide supporting documentation. The department may modify its determination where it concludes that such change is necessary to ensure that a system continues to minimize lead and copper concentrations in source water. A revised determination will be made in writing, set forth the

new treatment requirements, explain the basis for the decision, and provide an implementation schedule for completing treatment modifications.

43.7(4) *Lead service line replacement (LSLR) requirements.*

a. Applicability. PWSs that fail to meet the lead AL in tap samples taken pursuant to ~~567—~~paragraph 41.4(1) “c”(4)“2” after installing corrosion control or source water treatment (whichever sampling occurs later), shall replace lead service lines (LSLs) in accordance with this subrule. If a system is in violation of 43.7(1) and 43.7(3) for failure to install source water or CCT, the department may require the system to commence LSLR under this subrule after the date by which the system was required to conduct monitoring under ~~567—~~paragraph 41.4(1) “c”(4)“2” has passed.

b. LSLR schedule. A PWS shall replace annually at least seven percent of the initial number of LSLs in its distribution system. The initial number of LSLs is the number of lead lines in place at the time the replacement program begins. A system shall identify the initial number of LSLs in its distribution system, including an identification of the portion(s) owned by the system, based upon a materials evaluation, including the evaluation required under ~~567—~~subparagraph 41.4(1) “c”(1), and relevant legal authorities regarding the portion owned by the system.

(1) The first year of LSLR shall begin on the first day following the end of the monitoring period in which the AL was exceeded in tap sampling referenced in 43.7(4) “a.” If monitoring is required annually or less frequently, the end of the monitoring period is September 30 of the calendar year in which the sampling occurs. If the department has established an alternate monitoring period, then the end of the monitoring period will be the last day of that period.

(2) Any system resuming an LSLR program after the cessation of its program as allowed by 43.7(4) “g” shall update its inventory of LSLs to include those sites that were previously determined not to require replacement through the sampling provision of 43.7(4) “c.” The

system will then divide the updated number of remaining LSLs by the number of remaining years in the program to determine the number of lines that must be replaced per year. Seven percent LSLR is based on a 15-year replacement program. For example, systems resuming LSLR after previously conducting two years of replacement would divide the updated inventory by 13.

(3) For those systems that have completed a 15-year LSLR program, the department will determine a schedule for replacing or retesting lines that were previously exempted through testing under 43.7(4)“c” from the replacement program when the system re-exceeds the AL.

c. Exemption to LSLR requirement. A PWS is not required to replace an individual LSL if the lead concentration in all service line samples from that line, taken pursuant to 567—paragraph 41.4(1)“c”(2)“3,” is less than or equal to 0.015 mg/L.

d. LSLR requirements. A PWS shall replace that portion of the LSL that it owns. In cases where a system does not own the entire LSL, it shall notify the owner of the line, or the owner’s authorized agent, that it will replace the portion of the service line that it owns and shall offer to replace the owner’s portion of the line. A system is not required to bear the cost of replacing the privately owned portion of the line, nor is it required to replace the privately owned portion of the line where the line owner chooses not to pay the cost of replacement, or where replacing the privately owned portion would be precluded by state, local, or common law. A system that does not replace the entire length of the service line shall complete the following tasks.

(1) Resident notification. At least 45 days prior to commencing with the partial replacement of a LSL, a PWS shall provide to the resident(s) of all buildings served by the line notice explaining that the resident(s) may experience a temporary increase of lead levels in their drinking water, along with guidance on measures consumers may take to minimize their lead exposure. The department may allow a system to provide this notice less than 45

days prior to commencing partial LSLR where such replacement is in conjunction with emergency repairs. In addition, a system shall inform the resident(s) served by the line that the system will, at its expense, collect a lead sample from each service line that is representative of the water in the line, as prescribed by ~~567—paragraph 41.4(1)~~ “c”(2)“3,” within 72 hours after the completion of the partial service line replacement. The system shall collect the sample and report the analysis results to the owner and the resident(s) served by the line within three business days of receiving the results. Mailed notices postmarked within three business days of receiving the results shall be considered “on time.”

(2) Notification methods. The PWS shall provide the information required by 43.7(4)“d”(1) to the residents of individual dwellings by mail or by other department-approved methods. In instances where multifamily dwellings are served by the line, a system shall have the option to post the information at a conspicuous location.

e. LSLR schedule. The department may require a PWS to replace LSLs on a shorter schedule than that required by this subrule, taking into account the number of LSLs in the system, where such a shorter replacement schedule is feasible. The department will make this determination in writing and notify the system of its finding within six months after the system is triggered into LSLR based on monitoring referenced in 43.7(4)“a.”

f. Cessation of LSLR. Any PWS may cease replacing LSLs when first draw samples collected pursuant to ~~567—paragraph 41.4(1)~~ “c”(2)“2” meet the lead AL during each of two consecutive monitoring periods and the system submits the results. If the first draw tap samples collected in any such system thereafter exceed the lead AL, the system shall recommence replacing LSLs, as detailed in 43.7(4)“b.”

g. LSLR reporting requirements. To demonstrate compliance with 43.7(4)“a” through “d,” a system shall report the information in ~~567—paragraph 40.8(2)~~ “e.”

~~567—43.8(455B)~~ Viability assessment.

43.8(1) *Definitions specific to viability assessment.*

a. For viability assessment purposes:

“*New system*” includes newly constructed PWSs and systems that do not meet the definition of a PWS, but which expand their infrastructure and thereby grow to become a PWS. Systems not currently meeting the definition of a PWS and that add additional users and thereby become a PWS without constructing any additional infrastructure are not “new systems” for the purposes of this rule.

“*Nonviable system*” means a system lacking the technical, financial, and managerial ability to comply with 567—Chapters 40 through 43 and 81.

“*Viable system*” means a system with the technical, financial, and managerial ability to comply with applicable drinking water standards adopted by the state of Iowa.

b. “Significant noncompliance” or “SNC” and “viability” are defined in 567—Chapter 40.

43.8(2) *Applicability and purpose.* These rules apply to all new and existing PWS, including the following: new systems; systems deemed to be in SNC with the primary drinking water standards; DWSRF applicants; and existing systems. The purpose of the viability assessment program is to ensure the safety of the PWS and ensure the viability of new PWS upon commencement of operation. The department may require PN and assess administrative penalties to any PWS that fails to fulfill the requirements of this rule.

43.8(3) *Contents of a viability assessment.* A viability assessment must address the areas of technical, financial, and managerial viability for a PWS. An assessment must include evaluation of the following areas, and the PWS may be required to include additional information as directed by the department.

a. Technical viability. Supply sources and facilities, treatment, and infrastructure.

b. Managerial viability. Operation, maintenance, management, and administration.

c. Financial viability. Capital and operating costs, revenue sources, and contingency plans.

43.8(4) *New systems.*

a. Viability assessment submission.

(1) New PWSs (including CWSs, NTNCs and TNCs) must submit a completed system viability assessment for department review prior to obtaining a construction permit. A viability assessment may be submitted with a construction permit application.

(2) Viability assessment worksheets are available on the department's website at www.iowadnr.gov.

(3) The department may reject receipt or delay review of the construction plans and specifications until an adequate viability assessment is provided.

(4) If the department finds, upon review and approval of the viability assessment, that the PWS will be viable, a construction permit will be issued in accordance with 567—Chapters 40 and 43. Prior to beginning operation, a PWS operation permit must be obtained in accordance with rule 567—43.2(455B) and rule 567—40.5(455B).

b. Viability assessment review. If the department declines to approve a viability assessment, or if the department finds that a PWS is nonviable, the construction and operation permit applications will be denied. If the viability assessment is conditionally approved, construction and operation permits will be issued, with conditions and a compliance schedule specified in the operation permit.

43.8(5) *Existing systems.*

a. Definition of existing system. Any CWS, NTNC, or TNC in operation prior to October 1, 1999 that was regulated as a PWS by the department shall be considered an existing system. Any system that does not currently meet the definition of a PWS, but which expands their infrastructure and thereby grows to become a PWS, is considered a new system. Systems not currently meeting the definition of a PWS and that add additional users and thereby become

a PWS without constructing any additional infrastructure are considered existing systems for the purposes of this subrule.

b. Viability assessment submission. All PWSs should complete a viability assessment. However, only existing PWSs meeting one or more of the following criteria are required to complete a viability assessment.

(1) Systems applying for DWSRF loan funds.

(2) Systems categorized as being in SNC by the department, due to their history of failure to comply with drinking water standards.

(3) Systems identified by the department via a sanitary survey as having technical, managerial, or financial problems as evidenced by such conditions as poor operational control, a poor state of repair or maintenance, vulnerability to contamination, or inability to maintain adequate distribution system operating pressures.

(4) Systems that have been unable to retain a certified operator in accordance with 567—Chapter 81.

c. Forms. Viability assessment worksheets are available on the department's website at www.iowadnr.gov.

d. Review of required viability assessments.

(1) If the assessment is incomplete and does not include all of the required elements, the system will be notified in writing by the department and will be given an opportunity to modify and resubmit the assessment within the specified time period. If the system fails to resubmit a completed viability assessment as specified, the department may find that the system is nonviable.

(2) If the assessment is complete, the department will either indicate that the system is viable or nonviable after the assessment review process. The system will be notified of the results of the department's evaluation.

e. Review of voluntarily submitted viability assessments. All existing systems should complete a viability assessment and submit it to the department. Voluntarily submitted assessments may be reviewed upon request and will be exempt from any requirements to modify the assessment if it is not approved, or from a determination that the system is not viable, providing the system does not meet any of the criteria for mandatory completion of a viability assessment set forth in 43.8(4) “b” above.

43.8(6) *Nonviable systems.* The following applies to CWSs, NTNC, and TNCs:

a. Systems applying for DWSRF loan funds must be viable, or the loan funds must be used to assist the system in attaining viable status. If a system applying for a loan is found to be nonviable, and loan funds will not be sufficient or available to ensure viability, then the situation must be corrected to the department’s satisfaction prior to qualification to apply for loan funds.

b. Systems that meet the department’s SNC criteria are considered nonviable. The system’s viability assessment and the most recent sanitary survey results will be evaluated by the department to assist the system in returning to and remaining in compliance, which would achieve viability. Required corrective actions will be specified in the system’s operation permit and will include a compliance schedule. Inspections will be conducted on an as-needed basis to assist the system in implementing the required improvements.

c. Systems experiencing technical, managerial, or financial problems as noted by the department in the sanitary survey will be considered nonviable. The system’s viability assessment will be evaluated by the department to assist the system in attaining viability, and any required corrective actions will be specified in the system’s operation permit.

d. Systems unable to retain a certified operator will be considered nonviable. All CWSs and NTNCs, and TNCs denoted by the department, must have a certified operator who meets the requirements of 567—Chapter 81. The system’s viability assessment will be used to

determine the source of the problem, and required corrective actions will be specified in the system's operation permit.

43.8(7) *Revocation or denial of operation or construction permit.*

a. Operation permit revocation or denial. Failure to correct the deficiencies regarding viability, as identified in a compliance schedule set by the department, may result in revocation or denial of a system's operation permit. If the department revokes or denies the operation permit, the system's owner must negotiate an alternative arrangement with the department for providing treatment or water supply services within 30 days of receipt of the notification unless the system's owner appeals the decision. The PWS is required to provide water that continually meets all health-based standards during the appeal process.

b. Denial of new construction permits for an existing system. In addition to the criteria provided in 567—Chapters 40 through 44, new construction permits for system improvements may be denied until a system makes the required corrections and attains viable status, unless the proposed project is necessary to attain viability.

c. Failure to conform or comply. Failure of a project to conform to approved construction plans and specifications, or failure to comply with 567—Chapters 40 through 44, constitutes grounds for the director to withhold the applicable construction and operation permits. The system is then responsible for ensuring that the identified problem with the project is rectified so that permits may be issued. Once an agreement for correcting the problem is reached between the department and the system, the department will issue the appropriate permits according to the provisions of the agreement. If an agreement cannot be reached within a reasonable time period, the permits shall be denied.

d. Contents of denial notification. The notification of denial or withholding approval of the operation or construction permit will state the department's reasons for withholding or denying permit approval.

43.8(8) *Appeals.*

a. Request for formal review of viability determination. A person or entity who disagrees with the decision regarding the viability of a PWS may request a formal review of the action. A request for review must be submitted in writing to the director by the owner or their designee within 30 days of the viability decision.

b. Appeal of denial of operation or construction permit. A decision to deny an operation or construction permit may be appealed by the applicant to the commission pursuant to 567—Chapter 7. The appeal must be made in writing to the director within 30 days of receiving the notice of denial by the owner of the PWS.

567—43.9(455B) Enhanced filtration and disinfection requirements for SW and IGW systems serving at least 10,000 people.

43.9(1) *General requirements.*

a. Applicability. The requirements of this rule constitute national primary drinking water regulations. This rule establishes the filtration and disinfection requirements in addition to the filtration and disinfection requirements in 567—43.5(455B). This rule is applicable to all PWSs using SW or IGW, in whole or in part, and that serve at least 10,000 people. This rule establishes or extends TT requirements in lieu of MCLs for the following contaminants: *Giardia lamblia*, viruses, HPC bacteria, *Legionella*, *Cryptosporidium*, and turbidity. Each SW or IGW system serving at least 10,000 people must provide treatment of its source water that complies with these TT requirements. The TT requirements consist of installing and properly operating water treatment processes that reliably achieve:

(1) At least 99 percent (2-log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by SW runoff and a point downstream before or at the first customer for filtered systems.

(2) Compliance with the profiling and benchmark requirements under 43.9(2).

(3) The department may require other SW or IGW systems to comply with this rule, through an operation permit.

b. Compliance determination. A PWS subject to this rule is considered in compliance with 43.9(1) “a” if it meets the applicable filtration requirements in either 43.5(3) or 43.9(3) and the disinfection requirements in 43.5(2) and 43.6(2).

c. Prohibition of new construction of uncovered intermediate or finished water storage facilities. Systems required to comply with this rule may construct only covered intermediate or finished water storage facilities. For the purposes of this rule, an intermediate storage facility is defined as a storage facility or reservoir after the clarification treatment process.

d. Systems with populations that increased after January 1, 2002, to more than 10,000 people served. Systems using SW or IGW sources that did not conduct optional monitoring under 43.9(2) because they served fewer than 10,000 persons when such monitoring was required, but serve more than 10,000 persons prior to January 1, 2005, must comply with 43.9(1), 43.9(3), 43.9(4), and 43.9(5). These systems must also consult with the department to establish a disinfection benchmark. A system that decides to make a significant change to its disinfection practice as described in 43.9(2) “c”(1)“1” through “4” must consult with the department prior to making such a change.

43.9(2) Disinfection profiling and benchmarking.

a. Determination of systems required to profile. A PWS subject to this rule must determine its total trihalomethane (TTHM) and haloacetic acid (HAA5) annual averages using the procedures listed below. The annual average is the arithmetic average of the quarterly averages of four consecutive quarters of monitoring. Both TTHM and HAA5 samples must be collected as paired samples during the same time period in order for each parameter to have the same annual average period for result comparison. A paired sample is one that is collected at the same location and time and is analyzed for both TTHM and HAA5 parameters.

(1) Allowance of information collection rule data. Those systems that collected data under the federal Information Collection Rule in 40 CFR Part 141, Subpart M, must use the results of the TTHM and HAA5 samples collected during the last four quarters of monitoring required under 40 CFR §141.142. The system must have submitted the results of the samples collected during the last 12 months of required monitoring.

(2) Systems that have not collected TTHM and HAA5 data. Those systems that have not collected four consecutive quarters of paired TTHM and HAA5 samples as described above in 43.9(2)“a”(1) must comply with all other provisions of this subrule as if the HAA5 monitoring had been conducted and the results of that monitoring required compliance with 43.9(2)“b.” The system that elects this option must notify the department in writing of its decision.

(3) The department may require that a system use a more representative annual data set than the data set determined under 43.9(2)“a”(1) to determine the applicability of this subrule.

(4) Profiling determination criteria. Any system having either a TTHM annual average greater than 0.064 mg/L or an HAA5 annual average greater than 0.048 mg/L during the period identified in 43.9(2)“a”(1) through 43.9(2)“a”(3) must comply with 43.9(2)“b.”

b. Disinfection profiling.

(1) Applicability. Any system that meet the criteria in 43.9(2)“a”(4) must develop a disinfection profile of its disinfection practice for a period of up to three years.

(2) Monitoring requirements. A system must monitor daily for a period of 12 consecutive calendar months to determine the total log inactivation for each day of operation, based on the CT_{99.9} values in Tables 1 through 8 in Appendix A, as appropriate, through the entire treatment plant. A system must begin this monitoring as directed by the department. As a minimum, a system with a single point of disinfectant application prior to entrance to the distribution system must conduct the monitoring in “1” through “4” below. A system with

more than one point of disinfectant application must conduct the monitoring in “1” through “4” below for each disinfection segment. A system must monitor the parameters necessary to determine the total inactivation ratio, using analytical methods in 43.5(4) “a,” as follows:

1. The temperature of the disinfected water must be measured once per day at each RDC sampling point during peak hourly flow.
2. If the system uses chlorine, the pH of the disinfected water must be measured once per day at each chlorine RDC sampling point during peak hourly flow.
3. The disinfectant contact time(s) (“T”) must be determined for each day during peak hourly flow.
4. The RDC(s) (“C”) of the water before or at the first customer and prior to each additional point of disinfection must be measured each day during peak hourly flow.

(3) Use of existing data. A system that has existing operational data may use that data to develop a disinfection profile for additional years, in addition to the disinfection profile generated under 43.9(2) “b”(2). Such systems may use these additional yearly disinfection profiles to develop a benchmark under 43.9(2) “c.” The department must determine whether these operational data are substantially equivalent to data collected under 43.9(2) “b”(2). These data must be representative of inactivation through the entire treatment plant and not just of certain treatment segments.

(4) Calculation of the total inactivation ratio. The system must calculate the total inactivation ratio as follows, using the $CT_{99.9}$ values from Tables 1 through 8 listed in Appendix A:

1. If the system uses only one point of disinfectant application, it may determine the total inactivation ratio for the disinfection segment using either of the following methods:
 - Determine one inactivation ratio ($CT_{cal}/CT_{99.9}$) before or at the first customer during peak hourly flow; or

- Determine successive $CT_{\text{calc}}/CT_{99.9}$ values, representing sequential inactivation ratios, between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Under this alternative, the system must calculate the total inactivation ratio by determining $(CT_{\text{calc}}/CT_{99.9})$ for each sequence and then adding the $(CT_{\text{calc}}/CT_{99.9})$ values together to determine $\Sigma(CT_{\text{calc}}/CT_{99.9})$.

2. If the system uses more than one point of disinfectant application before the first customer, the system must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The $CT_{\text{calc}}/CT_{99.9}$ value of each segment and $\Sigma(CT_{\text{calc}}/CT_{99.9})$ must be calculated using a method above in 43.9(2) “b”(4)“1.”

3. The system must determine the total log inactivation by multiplying the value calculated above in 43.9(2) “b”(4)“1” or “2” by 3.0.

(5) Systems using chloramines or ozone. A system that uses either chloramines or ozone for primary disinfection must also calculate the log inactivation for viruses using a department-approved method.

(6) Profile retention. The system must retain disinfection profile data in graphic form, as a spreadsheet, or in some other format acceptable to the department for review as part of sanitary surveys conducted by the department. The department may require the system to submit the data directly or as part of a MOR.

c. Disinfection benchmarking.

(1) Significant change to disinfection practice. Any system required to develop a disinfection profile under 43.9(2) “a” or “b” that decides to make a significant change to its disinfection practice must obtain department approval prior to making such change. Significant changes to disinfection practice are:

1. Changes to the point of disinfection;

2. Changes to the disinfectant(s) used in the treatment plant;
3. Changes to the disinfection process; and
4. Any other modification identified by the department.

(2) Calculation of the disinfection benchmark. Any system that is modifying its disinfection practice must calculate its disinfection benchmark using the procedure specified below:

1. For each year of profiling data collected and calculated under 43.9(2) “b,” the system must determine the lowest average monthly *Giardia lamblia* inactivation in each year of profiling data. The system must determine the average *Giardia lamblia* inactivation for each calendar month for each year of profiling data by dividing the sum of daily *Giardia lamblia* inactivation by the number of values calculated for that month.

2. The disinfection benchmark is the lowest monthly average value (for systems with one year of profiling data) or average of lowest monthly average values (for systems with more than one year of profiling data) of the monthly log inactivation of *Giardia lamblia* in each year of profiling data.

(3) A system that uses either chloramines or ozone for primary disinfection must also calculate the disinfection benchmark for viruses using a department-approved method.

(4) The system must submit the following information to the department as part of its consultation process:

1. A description of the proposed change;
2. The disinfection profile for *Giardia lamblia* (and, if necessary, viruses) under 43.9(2) “b” and the disinfection benchmark as required by 43.9(2) “c”(2); and
3. An analysis of how the proposed change will affect the current levels of disinfection.

43.9(3) Filtration.

a. Conventional filtration treatment or direct filtration. Turbidity measurements required by this paragraph shall be made in accordance with 43.5(4) “a”(1) and 43.5(4) “b”(1).

(1) Turbidity requirement in 95 percent of samples. For systems using conventional filtration or direct filtration, the turbidity level of representative samples of a system’s filtered water (CFE) must be less than or equal to 0.3 NTU in at least 95 percent of the measurements taken each month.

(2) Maximum turbidity level. The turbidity level of representative samples of a system’s filtered water (CFE) must at no time exceed 1 NTU in two consecutive 15 minute recordings. If at any time the CFE turbidity exceeds 1 NTU in two consecutive 15 minute recordings, the system must inform the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with the PN requirements in 567—subparagraph 40.5(3) “b”(3).

b. Filtration technologies other than conventional, direct, slow sand, or diatomaceous earth. The department may allow a PWS to use a filtration technology not listed in 43.9(3) “a” or 43.5(3) “c” or “d” if it demonstrates to the department, using pilot plant studies or other means, that the alternative filtration technology, in combination with disinfection treatment that meets the requirements of 43.5(2), consistently achieves 99.9 percent removal or inactivation of *Giardia lamblia* cysts, 99.99 percent removal or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts, and the department approves the use of the filtration technology. For each approval, the department will set turbidity performance requirements that the system must meet at least 95 percent of the time and will require that the system not exceed at any time a level that consistently achieves 99.9 percent removal or inactivation of *Giardia lamblia* cysts, 99.99 percent removal or inactivation of viruses, and 99 percent removal of *Cryptosporidium* oocysts.

43.9(4) *Filtration sampling.*

a. Monitoring requirements for systems using filtration treatment. In addition to monitoring required by 43.5(4), a PWS subject to this rule that provides conventional filtration treatment or direct filtration must conduct continuous turbidity monitoring for each individual filter using an approved method in 43.5(4) “a”(1). Turbidity must be monitored according to a written turbidity protocol approved by the department and audited for compliance during sanitary surveys. Major elements of the protocol shall include, but are not limited to: sample measurement location; calibration method, frequency, standards, method of verification, and verification frequency; and data collection, recording frequency, and reporting. PWSs must calibrate turbidimeters at least every 90 days with a primary standard. The calibration of each turbidimeter used for compliance must be verified at least once per week with a primary standard, secondary standard, the manufacturer’s proprietary calibration confirmation device, or by a department-approved method. If the verification is not within plus or minus 0.05 NTU for measurements of less than or equal to 0.5 NTU, or within plus or minus 10 percent of measurements greater than 0.5 NTU, then the turbidimeter must be recalibrated. Systems must record the results of individual filter monitoring every 15 minutes.

b. Failure of the continuous turbidity monitoring equipment. If there is a failure in the continuous turbidity monitoring equipment, a system must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is repaired and back online. A system has a maximum of five working days after failure to repair the equipment, or else it is in violation.

43.9(5) *Reporting and recordkeeping.*

a. Additional requirements. In addition to the reporting and recordkeeping requirements in 567—paragraph 40.8(3) “c”:

(1) A system subject to this rule that provides conventional filtration treatment or direct filtration must report monthly to the department the information in 43.9(5) “b” and “c”; and

(2) A system subject to this rule that provides filtration approved under 43.9(3) “b” must report monthly to the department the information in 43.9(5) “b.”

b. Turbidity. Turbidity measurements required by 43.9(3) must be reported in a format acceptable to the department and within ten days after the end of each month that the system serves water to the public. This reporting is in lieu of the reporting specified in 567—subparagraph 40.8(3) “c”(1). Information that must be reported includes:

(1) The total number of filtered water (CFE) turbidity measurements taken during the month;

(2) The number and percentage of filtered water (CFE) turbidity measurements taken during the month that are less than or equal to the turbidity limits in 43.9(3) “a” or “b”; and

(3) The date and value of any CFE turbidity measurements taken during the month that exceed 1 NTU in two consecutive recordings taken 15 minutes apart for systems using conventional filtration treatment or direct filtration or that exceed the maximum level set in 43.9(3) “b.”

(4) The dates and summary of calibration and verification of all compliance turbidimeters.

c. Individual filter turbidity monitoring.

(1) Systems must maintain the results of individual filter turbidity per monitoring taken under 43.9(4) for at least three years.

(2) Systems must report to the department that they have conducted individual filter turbidity monitoring under 43.9(4) within ten days after the end of each month that the system serves water to the public.

(3) Systems must report to the department individual filter turbidity measurement results taken under 43.9(4) within ten days after the end of each month that the system serves water to the public only if measurements demonstrate one or more of the conditions in 43.9(5) “c”(5).

(4) Systems that use lime softening may apply to the department for alternative exceedance levels for the levels specified in 43.9(5) “c”(5) if they can demonstrate that higher turbidity levels in individual filters are due to lime carryover only and not due to degraded filter performance.

(5) In all of the following instances, the system must report the filter number, the turbidity measurement, and the date(s) when the exceedance occurred:

1. For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart. In addition, the system must either produce a filter profile for the filter within seven days of the exceedance (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced, or report the obvious reason for the exceedance.

2. For any individual filter that has a measured turbidity level of greater than 0.5 NTU in two consecutive measurements taken 15 minutes apart anytime following the first four hours of continuous filter operation, after the filter has been backwashed or otherwise taken offline. In addition, the system must either produce a filter profile for the filter within seven days of the exceedance (if the system is not able to identify an obvious reason for the abnormal filter performance) and report that the profile has been produced, or report the obvious reason for the exceedance.

3. For any individual filter that has a measured turbidity level of greater than 1.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each month of three consecutive months. In addition, the system must conduct a self-assessment of the filter within 14 days of the exceedance and report that the self-assessment was conducted. The self-assessment must consist of an assessment of filter performance; development of a filter profile; identification and prioritization of factors limiting filter performance; assessment of the applicability of corrections; and preparation of a filter self-assessment report.

4. For any individual filter that has a measured turbidity level of greater than 2.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each month of two consecutive months. In addition, the system must arrange for a comprehensive performance evaluation to be conducted by the department or a department-approved third party no later than 30 days following the exceedance and have the evaluation completed and submitted to the department no later than 90 days following the exceedance.

d. Additional reporting requirement for turbidity combined filter effluent (CFE). In the following situations, the system must consult with the department as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the PN requirements under 567—subparagraph 40.5(3) “b”(3).

(1) In a system using conventional filtration treatment or direct filtration, if the turbidity exceeds 1 NTU in the CFE in two consecutive recordings taken 15 minutes apart.

(2) If at any time the turbidity in representative samples of filtered water (CFE) exceeds the maximum level in 43.9(3) “b” for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration.

567—43.10(455B) Enhanced filtration and disinfection requirements for SW and IGW systems serving fewer than 10,000 people.

43.10(1) *General requirements.*

a. Applicability. This rule constitutes national primary drinking water regulations, and it establishes requirements for filtration and disinfection in addition to the filtration and disinfection requirements in 567—43.5(455B). This rule is applicable beginning January 1, 2005, unless otherwise noted, to all PWSs using SW or IGW, in whole or in part, and that serve less than 10,000 people. This rule establishes or extends TT requirements in lieu of MCLs for the following contaminants: *Giardia lamblia*, viruses, HPC bacteria, *Legionella*,

Cryptosporidium, and turbidity. The TT requirements consist of installing and properly operating water treatment processes that reliably achieve:

(1) At least 99 percent (2 log) removal of *Cryptosporidium* between a point where the raw water is not subject to recontamination by SW runoff and a point downstream before or at the first customer for filtered systems; and

(2) Compliance with the profiling and benchmark requirements in 43.10(2) and 43.10(3).

b. Prohibition of new construction of uncovered intermediate or finished water storage facilities. Systems required to comply with this rule may construct only covered intermediate or finished water storage facilities. For the purposes of this rule, an intermediate storage facility is defined as a storage facility or reservoir after the clarification treatment process.

43.10(2) *Disinfection profile.*

a. Applicability. A disinfection profile is a graphical representation of a system's level of *Giardia lamblia* or virus inactivation measured during the course of a year. All systems required to comply with this rule must develop a disinfection profile unless the department determines that such a profile is unnecessary. Records must be maintained according to 43.10(7).

(1) The department may approve the use of a more representative data set for disinfection profiling than the data set required in 43.10(2) "b."

(2) The department may determine that a disinfection profile is unnecessary only if a system's TTHM and HAA5 levels are below 0.064 mg/L and 0.048 mg/L, respectively. To determine these levels, TTHM and HAA5 samples must be collected during the month with the warmest water temperature and at the point of maximum residence time in the distribution system. The department may approve the use of a more representative annual data set to determine the applicability of this subrule. The annual data set must be calculated on an annual average using the arithmetic average of the quarterly averages of four consecutive quarters of

monitoring. At least 25 percent of the samples collected in each quarter must be collected at the maximum residence time location in the distribution system.

(3) If a producing system that provides water to other PWSs meets the byproduct level requirements of less than 0.064 mg/L for TTHM and less than 0.048 mg/L for HAA5, it will not be required to develop a disinfection profile and benchmark unless:

1. The consecutive system cannot meet the byproduct level requirements of less than 0.064 mg/L for TTHM and less than 0.048 mg/L for HAA5 in its distribution system, and
2. The producing system wants to make a significant change to its disinfection practices.

b. Required elements of a disinfection profile.

(1) A system must monitor the following parameters to determine the total log inactivation using the analytical methods in 43.5(4) “a,” once per week on the same calendar day, over 12 consecutive months.

1. Temperature of the disinfected water at each RDC sampling point during peak hourly flow, measured in degrees Celsius;
2. For systems using chlorine, the pH of the disinfected water at each RDC sampling point during peak hourly flow, measured in standard pH units;
3. The disinfectant contact time (“T”) during peak hourly flow, measured in minutes; and
4. The RDC(s) (“C”) of the water following each point of disinfection at a point(s) prior to each subsequent point of disinfection and at the entry point to the distribution system or at a location just prior to the first customer during peak hourly flows, measured in mg/L.

(2) The data collected in 43.10(2) “b”(1) must be used to calculate the weekly log inactivation, along with the CT_{99.9} tables in Appendix A. The system must calculate the total inactivation ratio as follows and multiply the value by 3.0 to determine log inactivation of *Giardia lamblia*.

1. If a system uses more than one point of disinfectant application before the first customer, the system must determine the $(CT_{\text{calc}}/CT_{99.9})$ value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. The system must calculate the total inactivation ratio by determining $(CT_{\text{calc}}/CT_{99.9})$ for each sequence and then adding the $(CT_{\text{calc}}/CT_{99.9})$ values together to determine $\Sigma(CT_{\text{calc}}/CT_{99.9})$.

2. If the system uses only one point of disinfectant application, it must determine:

- One inactivation ratio $(CT_{\text{calc}}/CT_{99.9})$ before or at the first customer during peak hourly flow, or
- Successive $(CT_{\text{calc}}/CT_{99.9})$ values, representing sequential inactivation ratios, between the point of disinfection application and a point before or at the first customer during peak hourly flow. The total inactivation ratio must be calculated from the successive values by determining $(CT_{\text{calc}}/CT_{99.9})$ for each sequence and then adding the $(CT_{\text{calc}}/CT_{99.9})$ values together to determine $\Sigma(CT_{\text{calc}}/CT_{99.9})$.

3. If a system uses chloramines, ozone, or chlorine dioxide for primary disinfection, the system must also calculate the inactivation logs for viruses and develop an additional disinfection profile for viruses using department-approved methods.

(3) The weekly log inactivations are used to develop a disinfection profile by graphing each log inactivation data point versus time. Each log inactivation serves as a data point in the disinfection profile. The system will have obtained 52 measurements at a minimum, one for each week of the year.

(4) A disinfection profile depicts the variation of microbial inactivation over the course of the year. The system must retain the disinfection profile data both in a graphic form and in a spreadsheet, which must be available for review by the department. This profile is used to

calculate a disinfection benchmark if the system is considering changes to its disinfection practices.

43.10(3) *Disinfection benchmark.*

a. Applicability. Any system required to develop a disinfection profile under 43.10(2) must develop a disinfection benchmark prior to making any significant change in disinfection practice. The system must receive department approval before any significant change in disinfection practice is implemented. Records must be maintained according to 43.10(7).

b. Significant changes. Significant changes to disinfection practice include:

- (1) Changes to the point of disinfection;
- (2) Changes to the disinfectant(s) used in the treatment plant;
- (3) Changes to the disinfection process; or
- (4) Any other modification identified by the department.

c. Disinfection benchmark calculation. Systems must calculate the disinfection benchmark in the following manner:

(1) Step 1. Using the data collected to develop the disinfection profile, determine the average *Giardia lamblia* inactivation for each calendar month by dividing the sum of all *Giardia lamblia* inactivations for that month by the number of values calculated for that month.

(2) Step 2. Determine the lowest monthly average value out of the 12 values. This value becomes the disinfection benchmark.

d. Information required for department approval of a change in disinfection practice. Systems must submit the following information to the department as part of the consultation and approval process.

- (1) A description of the proposed change;
- (2) The disinfection profile for *Giardia lamblia* and, if necessary, viruses;

(3) The disinfection benchmark;

(4) An analysis of how the proposed change will affect the current levels of disinfection;

and

(5) Any additional information requested by the department.

e. Additional benchmarks if chloramines, ozone, or chlorine dioxide is used for primary disinfection. If a system uses chloramines, ozone, or chlorine dioxide for primary disinfection, the system must calculate the disinfection benchmark from the data collected for viruses to develop a disinfection profile. This viral benchmark must be calculated in addition to, and in the same manner as, the *Giardia lamblia* disinfection benchmark in 43.10(3) “c.”

43.10(4) Combined filter effluent (CFE) turbidity requirements. All systems using SW or IGW that serve less than 10,000 people must use filtration, and the turbidity limits that must be met depend upon the type of filtration used.

a. Turbidity measurements. Turbidity must be measured in the CFE as described in 43.5(4) “a” and “b.”

b. Turbidity monthly reporting. The monthly reporting requirements are in 43.10(6).

c. Conventional filtration treatment or direct filtration.

(1) The turbidity in the CFE must be less than or equal to 0.3 NTU in 95 percent of the turbidity measurements taken each month.

(2) The turbidity in the CFE must never exceed 1 NTU in two consecutive recordings taken 15 minutes apart during the month. If the CFE turbidity exceeds 1 NTU in two consecutive 15 minute recordings, the system must inform the department as soon as possible, but no later than 24 hours after the exceedance is known, in accordance with the PN requirements under 567—subparagraphs 40.5(3) “b”(3) and 40.5(2) “a”(8).

d. Slow sand filtration or diatomaceous earth filtration. The CFE turbidity limits of 43.5(3) must be met.

e. Other alternative filtration technologies. By using pilot studies or other means, a system using alternative filtration must demonstrate to the department's satisfaction that the system's filtration, in combination with disinfection treatment, consistently achieves 99 percent removal of *Cryptosporidium* oocysts; 99.9 percent removal, inactivation, or a combination of both, of *Giardia lamblia* cysts; and 99.99 percent removal, inactivation, or a combination of both, of viruses. The department will then use the pilot study data to determine system-specific turbidity limits.

(1) The turbidity must be less than or equal to a value set by the department in 95 percent of the CFE turbidity measurements taken each month, based on the pilot study.

(2) The CFE turbidity must never exceed a value set by the department, based on the pilot study. The value may not exceed 1 NTU in two consecutive recordings taken 15 minutes apart.

43.10(5) *Individual filter turbidity requirements.* All systems utilizing conventional filtration or direct filtration must conduct continuous turbidity monitoring for each individual filter. Turbidity must be monitored according to a written turbidity protocol approved by the department and audited for compliance during sanitary surveys. Major elements of the protocol shall include, but are not limited to: sample measurement location; calibration method, frequency, standards, method of verification, and verification frequency; and data collection, recording frequency, and reporting. Records must be maintained according to 43.10(7).

a. Continuous turbidity monitoring requirements.

(1) Conduct monitoring using an approved method listed in 43.5(4) "a";

(2) Calibrate turbidimeters at least every 90 days with a primary standard. The calibration of each turbidimeter used for compliance must be verified at least once per week with a primary standard, secondary standard, the manufacturer's proprietary calibration

confirmation device, or by a department-approved method. If the verification is not within plus or minus 0.05 NTU for measurements of less than or equal to 0.5 NTU, or within plus or minus 10 percent of measurements greater than 0.5 NTU, the turbidimeter must be recalibrated;

(3) Record turbidity monitoring results at least every 15 minutes; and

(4) Complete monthly reporting in accordance with 43.10(6).

b. Equipment failure. If there is a failure in the continuous turbidity monitoring equipment, a system must conduct grab sampling every four hours in lieu of continuous monitoring until the turbidimeter is back on-line. A system has a maximum of 14 days after failure to repair the equipment, or else the system is in violation. The system must notify the department within 24 hours, both when a turbidimeter is taken off-line and when it is returned on-line.

c. Special provision for one-filter or two-filter systems. If a system has only one or two filters, it may conduct continuous monitoring of the CFE turbidity instead of individual effluent turbidity monitoring. The continuous monitoring must meet the requirements in 43.10(5)“a” and “b.”

d. Alternative turbidity levels for systems using lime softening. Systems using lime softening may apply to the department for alternative turbidity exceedance levels for the levels specified in 43.10(5)“e.” The system must be able to demonstrate to the department’s satisfaction that higher turbidity levels are due to lime carryover only, and not due to degraded filter performance.

e. Requirements triggered by individual filter turbidity monitoring data. Systems must conduct additional activities based upon their individual filter turbidity monitoring data, as listed in this paragraph.

(1) If the turbidity of an individual filter (or the CFE turbidity for a system with one or two filters, pursuant to 43.10(5)“c”) exceeds 1.0 NTU in two consecutive recordings taken 15

minutes apart, a system must report the following information in the MOR to the department by the tenth day of the following month:

1. The filter number(s);
2. Corresponding date(s);
3. Turbidity value(s) which exceeded 1.0 NTU; and
4. The cause of the exceedance(s), if known.

(2) If the turbidity of an individual filter (or the CFE turbidity for a system with one or two filters, pursuant to 43.10(5) “c”) exceeds 1.0 NTU in two consecutive recordings 15 minutes apart in three consecutive months, a system must conduct a self-assessment of the filter(s) within 14 days of the day the filter exceeded 1.0 NTU in two consecutive measurements for the third straight month, unless a comprehensive performance evaluation (CPE) as specified in the following subparagraph is required. Two-filter systems that monitor the CFE turbidity instead of the individual filters must conduct a self-assessment of both filters. The self-assessment must consist of the following:

1. Assessment of filter performance;
2. Development of a filter profile;
3. Identification and prioritization of factors limiting filter performance;
4. Assessment of the applicability of corrections;
5. Preparation of a filter self-assessment report;
6. Date the self-assessment requirement was triggered; and
7. Date the self-assessment was completed.

(3) If the turbidity of an individual filter (or the CFE turbidity for a system with one or two filters, pursuant to 43.10(5) “c”) exceeds 2.0 NTU in two consecutive recordings 15 minutes apart in two consecutive months, a system must arrange to have a CPE conducted by the

department or a department-approved third party no later than 60 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month.

1. The CPE report must be completed and submitted to the department within 120 days following the day the filter exceeded 2.0 NTU in two consecutive measurements for the second straight month.

2. A new CPE is not required if a CPE has been completed by the department or a department-approved third party within the prior 12 months, or if the system and department are jointly participating in an ongoing comprehensive technical assistance project at the system.

(4) The department may conduct a CPE at a system regardless of individual filter turbidity levels.

43.10(6) *Reporting requirements.* Systems must report as follows:

a. CFE turbidity monitoring.

(1) The following information must be reported in the MOR to the department by the tenth day of the following month:

1. Total number of filtered water turbidity measurements taken during the month;
2. The number and percentage of filtered water turbidity measurements taken during the month that are less than or equal to the system's required 95th percentile limit;
3. The date and analytical result of any turbidity measurements taken during the month that exceeded the maximum turbidity limit for the system, in addition to the requirements of 43.10(6) "a"(2); and

4. The dates and summary of calibration and verification of all compliance turbidimeters.

(2) For an exceedance of the CFE maximum turbidity limit, as described below, the system must consult with the department as soon as practical, but no later than 24 hours after the exceedance is known, in accordance with the PN requirements under 567—subparagraph

40.5(3) “b”(3). Consultation is required if at any time the turbidity in representative samples of filtered water exceeds:

1. 1 NTU in the CFE in two consecutive recordings taken 15 minutes apart for systems using conventional filtration treatment or direct filtration;
2. The maximum level under 43.5(3) for slow sand filtration or diatomaceous earth filtration; or
3. The maximum level in 43.10(4) “c” for filtration technologies other than conventional filtration treatment, direct filtration, slow sand filtration, or diatomaceous earth filtration.

b. Individual filter effluent (IFE) turbidity monitoring. The following information must be reported in the MOR to the department by the tenth day of the following month, unless otherwise noted.

- (1) That the system conducted individual filter turbidity monitoring during the month.
- (2) For any filter that had two consecutive measurements taken 15 minutes apart that exceeded 1.0 NTU:

1. The filter number(s);
2. The corresponding dates;
3. The turbidity values that exceeded 1.0 NTU; and
4. The cause, if known, of the exceedance.

(3) If a self-assessment was required, the date it was triggered, and the date the assessment was completed. If the self-assessment requirement was triggered in the last four days of the month, the information must be reported to the department by the 14th day of the following month.

(4) If a CPE was required, the date it was triggered. A copy of the CPE report must be submitted to the department within 120 days of when the CPE requirement was triggered.

- (5) The dates and summary of calibration and verification of all compliance turbidimeters.

c. Disinfection profiling. The following information must be reported to the department by January 1, 2004, for systems serving fewer than 500 people.

(1) Results of DBP monitoring that indicate TTHM levels less than 0.064 mg/L and HAA5 levels less than 0.048 mg/L; or

(2) That the system has begun to collect the profiling data.

d. Disinfection benchmarking. Before a system that was required to develop a disinfection profile makes a significant change to its disinfection practice, it must report the following information to the department, and the system must receive department approval before any significant change in disinfection practice is implemented.

(1) Description of the proposed change in disinfection practice;

(2) The disinfection profile for *Giardia lamblia* and, if applicable, for viruses;

(3) The disinfection benchmark; and

(4) An analysis of how the proposed change will affect the current disinfection levels.

43.10(7) Recordkeeping requirements. Systems must meet the following recordkeeping requirements, in addition to the recordkeeping requirements in 567—paragraph 40.8(3) “c” and rule 567—40.9(455B).

a. IFE turbidity. The results of the IFE turbidity monitoring must be kept for at least three years.

b. Disinfection profiling and benchmarking. The results of the disinfection profile and disinfection benchmark, including raw data and analysis, must be kept indefinitely.

567—43.11(455B) Enhanced treatment for *Cryptosporidium*.

43.11(1) Applicability. The requirements of this rule are national primary drinking water regulations and establish or extend TT requirements in lieu of MCLs for *Cryptosporidium*. These requirements are in addition to the filtration and disinfection requirements of rules

567—43.5(455B), 567—43.9(455B) and 567—43.10(455B) and apply to all Iowa PWSs supplied by SW or IGW sources.

a. Wholesale systems. Wholesale systems must comply with these requirements based on the population of the largest system in the combined distribution system.

b. Filtered systems. This rule applies to those filtered systems that must provide filtration treatment pursuant to rule 567—43.5(455B), whether or not the system is currently operating a filtration system.

43.11(2) *General.* Systems subject to this rule must comply with the following:

a. Source water monitoring. Systems must conduct two rounds of source water monitoring for each plant that treats a SW or IGW source. This monitoring may include sampling for *Cryptosporidium*, *E. coli*, and turbidity, as described in 43.11(3), to determine what level, if any, of additional *Cryptosporidium* treatment the systems must provide.

b. Disinfection profiles and benchmarks. Systems planning to make a significant change to their disinfection practice must develop disinfection profiles and calculate disinfection benchmarks, as described in 43.11(4).

c. Treatment bin determination. Systems must determine their *Cryptosporidium* treatment bin classification and provide additional *Cryptosporidium* treatment, if required, according to the prescribed schedule.

d. Additional treatment. Systems required to provide additional *Cryptosporidium* treatment must implement microbial toolbox options as described in 43.11(8) through 43.11(13).

e. Recordkeeping and reporting. Systems must comply with the applicable recordkeeping and reporting requirements in 43.11(14) and 43.11(15).

f. Significant deficiencies. Systems must address significant deficiencies identified during sanitary surveys as described in 43.1(7).

43.11(3) Source water monitoring.

a. Schedule. Systems must conduct the source water monitoring no later than the month and year listed in Table 1. A system may avoid the source water monitoring if it provides a total of at least 5.5-log treatment for *Cryptosporidium*, equivalent to meeting the treatment requirements of Bin 4 in 43.11(6). The system must install and operate technologies to provide this level of treatment by the applicable treatment compliance date specified in 43.11(7).

Table 1: Source Water Monitoring Schedule

System	First round of monitoring	Second round of monitoring
Serves at least 100,000 people	October 2006	April 2015
Serves 50,000-99,999 people	April 2007	October 2015
Serves 10,000-49,999 people	April 2008	October 2016
Serves fewer than 10,000 people and only monitors <i>E. coli</i>	October 2008	October 2017
Serves fewer than 10,000 people and monitors <i>Cryptosporidium</i>	April 2010	April 2019

b. Monitoring requirements. The minimum monitoring requirements are listed below. Systems may sample more frequently, provided the sampling frequency is evenly spaced throughout the monitoring period.

(1) Serving at least 10,000 people. Systems serving at least 10,000 people must sample their source water for *Cryptosporidium*, *E. coli*, and turbidity at least monthly for 24 months.

(2) Serving fewer than 10,000 people. Systems serving fewer than 10,000 people are allowed to first conduct *E. coli* monitoring to determine if further *Cryptosporidium* monitoring is required.

1. Systems must sample their source water for *E. coli* at least once every two weeks for 12 months. If the annual mean *E. coli* concentration is at or below 100 *E. coli* per 100 mL, the system can avoid further *Cryptosporidium* monitoring in that sampling round.

2. A system may avoid *E. coli* monitoring if it notifies the department no later than three months prior to the *E. coli* monitoring start date that the system will conduct *Cryptosporidium* monitoring.

3. Systems that fail to conduct the required *E. coli* monitoring or that cannot meet the *E. coli* annual mean limit must conduct *Cryptosporidium* monitoring. The system must sample its source water for *Cryptosporidium* either at least twice per month for 12 months or at least monthly for 24 months.

4. A system that begins monitoring for *E. coli* and determines during the sampling period that the system mathematically cannot meet the applicable *E. coli* annual mean limit may discontinue the *E. coli* monitoring. The system is then required to start *Cryptosporidium* monitoring according to the schedule in Table 1.

(3) Plants operating only part of the year. Systems with SW or IGW treatment plants that operate for only part of the year must conduct source water monitoring in accordance with this rule, but with the following modifications.

1. Systems must sample their source water only during the months that the plant operates unless the department specifies another monitoring period based on plant operating practices.

2. Systems with plants that operate less than six months per year must collect at least six samples per year for two years. The samples must be evenly spaced throughout the period the plant operates.

(4) New sources. A system that begins using a new SW or IGW source after the dates in Table 1 must monitor according to a department-approved schedule and comply with this subrule. The system must also meet the requirements of the bin classification and *Cryptosporidium* treatment for the new source on a department-approved schedule. The system must conduct the second round of source water monitoring no later than six years following the initial bin classification or determination of the mean *Cryptosporidium* level, as applicable.

(5) Monitoring violation determination. Failure to collect any source water sample required under this subrule in accordance with the sampling plan, location, analytical method,

approved laboratory, or reporting requirements of 43.11(3) “c” through “e” is a monitoring violation.

c. Sampling plan. Systems must submit a sampling plan that specifies the sampling locations in relation to the sources and treatment processes and the calendar dates of sample collection. The specific treatment process locations that must be included in the plan are pretreatment, points of chemical treatment, and filter backwash recycle.

(1) The sampling plan must be submitted in a form acceptable to the department no later than three months prior to the applicable monitoring date in Table 1. If the department does not respond to a system regarding the submitted sampling plan prior to the start of the monitoring period, the system must sample according to the submitted plan.

(2) The system must monitor within two days of the date specified in the plan, unless one of the following conditions occurs.

1. If an extreme condition or situation exists that may pose danger to the sample collector, or that cannot be avoided, and causes the system to be unable to sample in the scheduled five-day period, the system must sample as close to the scheduled date as is feasible unless the department approves an alternative sampling date. The system must submit an explanation for the delayed sampling date to the department within one week of the missed sampling period. A replacement sample must be collected.

2. If a system is unable to report a valid analytical result for a scheduled sampling date due to equipment failure, loss of or damage to the sample, failure to comply with the analytical method or quality control requirements, or failure of the laboratory to analyze the sample, the system must notify the department of the cause of the delay and collect a replacement sample.

3. A replacement sample must be collected within 21 days of the scheduled sampling period or on the department-approved resampling date.

(3) Missed sampling dates. Systems that fail to collect source water samples on the dates specified in their sampling plan must revise their sampling plan to add collection dates all missed samples. The revised plan must be submitted to the department for approval prior to the collection of the missed samples.

d. Sampling locations. Systems must collect samples for each treatment plant that treats a SW or IGW source. If multiple plants draw water from the same influent (same pipe or intake), the department may approve one set of monitoring results to be used to satisfy the requirements for those plants.

(1) Chemical treatment location. Systems must collect source water samples prior to chemical treatment. If the system cannot feasibly collect a sample prior to chemical treatment, the department may grant approval in writing for sample collection after chemical treatment. This approval would only be granted if the department determines that sample collection prior to chemical treatment is not feasible for the system and that the chemical treatment is unlikely to have a significant adverse effect on the sample analysis.

(2) Filter backwash recycle return location. Systems that recycle filter backwash water must collect source water samples prior to the point of filter backwash water addition.

(3) Bank filtration credit sampling location.

1. Systems that receive *Cryptosporidium* treatment credit for bank filtration under 43.9(3)“b” or 43.10(4)“c” must collect source water samples in the SW source prior to bank filtration.

2. Systems that use bank filtration as pretreatment to a filtration plant must collect source water samples from the well, which is after bank filtration has occurred. Use of bank filtration during monitoring must be consistent with routine operational practice. Systems collecting samples after a bank filtration process may not receive treatment credit for the bank filtration under 43.11(10)“c.”

(4) Multiple sources. Systems with plants that use multiple water sources, including multiple SW sources and blended SW and GW sources, must collect samples as follows:

1. The use of multiple sources during monitoring must be consistent with routine operational practice.

2. If a sampling tap is available where the sources are combined prior to treatment, the system must collect samples from that tap.

3. If a sampling tap where the sources are combined prior to treatment is not available, the system must collect samples at each source near the intake on the same day and must use either of the following options for sample analysis.

- Physically composite the source samples into a single sample for analysis. Systems may composite the sample from each source into one sample prior to analysis. The volume of the sample from each source must be weighted according to the proportion of the source in the total plant flow at the time of sample collection, or

- Analyze the samples from each source separately and mathematically composite the results by calculating a weighted average of the analytical results for each sampling date. Calculate the weighted average by multiplying the analytical result for each source by the fraction that source contributed to the total plant flow at the time of sample collection and summing the weighted analytical results.

e. Analytical methodology, laboratory certification, and data reporting requirements. Systems must have samples analyzed pursuant to this paragraph. The system must report, in a format acceptable to the department, the analytical results from the source water monitoring no later than ten days after the end of the first month following the month when the sample is collected.

(1) *Cryptosporidium* samples must be analyzed by a laboratory that is approved under EPA's Laboratory Quality Assurance Evaluation Program for Analysis of *Cryptosporidium* in Water.

1. Approved analytical methods for *Cryptosporidium*:

- "Method 1623: *Cryptosporidium* and *Giardia* in Water by Filtration/IMS/FA," 2005, EPA-815-R-05-002, www.nemi.gov;
- "Method 1622: *Cryptosporidium* in Water by Filtration/IMS/FA," 2005, EPA-815-R-05-001, www.nemi.gov; and
- "Method 1623.1: *Cryptosporidium* and *Giardia* in Water by Filtration/Immunomagnetic Separation/Immunofluorescence Assay Microscopy," 2012, EPA-816-R-12-001, www.nepis.epa.gov.

2. Using one of the approved methods, the laboratory must analyze at least a 10 L sample or a packed pellet volume of at least 2 mL. Systems unable to process a 10 L sample must analyze as much sample volume as can be filtered by two filters specified in the method, up to a packed pellet volume of at least 2 mL.

3. A matrix spike (MS) sample must be spiked and filtered by the laboratory according to the approved method. If the volume of the MS sample is greater than 10 L, the system may filter all but 10 L of the MS sample in the field and ship the filtered sample and the remaining 10 L of source water to the laboratory. In this case, the laboratory must spike the remaining 10 L of water and filter it through the filter used to collect the balance of the sample in the field.

4. Flow cytometer-counted spiking suspensions must be used for the MS samples and the ongoing precision and recovery samples.

5. The following data must be reported for each *Cryptosporidium* analysis:

- PWS ID.

- Facility ID.
- Sample collection date.
- Sample type (i.e., field or MS).
- Sample volume filtered (L), to the nearest 0.25 L.
- Whether 100 percent of the filtered volume was examined by the laboratory.
- Number of oocysts counted.
- For MS samples: sample volume spiked and estimated number of oocysts spiked.
- For samples in which less than 10 L is filtered or less than 100 percent of the sample volume is examined: the number of filters used and the packed pellet volume.
- For samples in which less than 100 percent of sample volume is examined: the volume of resuspended concentrate and the volume of this resuspension processed through immunomagnetic separation.

(2) *E. coli* samples must be analyzed by a laboratory certified by EPA, the National Environmental Laboratory Accreditation Conference, or the department for total coliform or fecal coliform analysis in drinking water samples using the same approved *E. coli* method for the source water analysis.

1. Approved analytical methods for the enumeration of *E. coli* in source water are shown in Table 2.

Table 2: *E. coli* Analytical Methods

Method	EPA	SM	Other
Most probable number (MPN) with multiple tube or multiple well ^{1, 2}		9223 B ¹¹	991.15 ⁴ , Colilert ^{3, 5} Colilert-18 ^{3, 5, 6}
Membrane filtration, single step ^{1, 7, 8}	1603 ⁹		m-ColiBlue24 ¹⁰
Membrane filtration, two step		9222D/9222G ¹²	

¹Tests must be conducted to provide organism enumeration (i.e., density). Select the appropriate configuration of tubes/filtrations and dilutions/volumes to account for the quality, consistency, and anticipated organism density in the water sample.

²Enumerate samples using the multiple-tube or multiple-well procedure. Using multiple-tube procedures, employ an appropriate tube and dilution configuration of the sample as needed and report the MPN. Samples tested with Colilert® may be enumerated with the multiple-well procedures, Quanti-Tray®, Quanti-Tray® 2000, and the MPN calculated from the table provided by the manufacturer.

³These tests are collectively known as defined enzyme substrate tests, where, for example, a substrate is used to detect the enzyme beta-glucuronidase produced by *E. coli*.

⁴Association of Official Analytical Chemists, International. "Official Methods of Analysis of AOAC International, 16th Ed., Volume 1, Chapter 17, 1995. AOAC, 481 N. Frederick Ave., Suite 500, Gaithersburg, MD 20877-2417.

⁵Descriptions of the Colilert®, Colilert-18®, Quanti-Tray®, and Quanti-Tray® 2000 may be obtained from IDEXX Laboratories, Inc., 1 IDEXX Drive, Westbrook, ME 04092.

⁶Colilert-18® is an optimized formulation of the Colilert® for the determination of total coliforms and *E. coli* that provides results within 18 hours of incubation at 35 degrees Celsius rather than the 24 hours required for the Colilert® test.

⁷The filter must be a 0.45 micron membrane filter or a membrane filter with another pore size certified by the manufacturer to fully retain cultivated organisms and to be free of extractables that could interfere with organism growth.

⁸When the membrane filter method has been used previously to test waters with high turbidity or large numbers of noncoliform bacteria, a parallel test should be conducted with a multiple-tube technique to demonstrate applicability and comparability of results.

⁹Method 1603: *Escherichia coli* (*E. coli*) in Water by Membrane Filtration Using Modified Membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC), July 2006, EPA 821-R-06-011, www.nepis.epa.gov.

¹⁰A description of the m-ColiBlue24® test, Total Coliforms and *E. coli*, Hach Company, 100 Dayton Ave., Ames, IA 50010.

¹¹SM 18th (1992), 19th (1995), and 20th (1998) editions.

¹²SM, 20th edition (1998).

2. The holding time (the time period from sample collection to initiation of analysis) shall not exceed 30 hours. The department may approve a 48-hour holding time on a case-by-case basis, if the 30-hour holding time is not feasible. If an extension is allowed, the laboratory must use the Colilert® reagent version of the SM 9223B to conduct the analysis.

3. The samples must be maintained between 0 and 10 degrees Celsius during storage and transit to the laboratory.

4. The following data must be reported for each *E. coli* analysis:

- PWS ID.
- Facility ID.
- Sample collection date.
- Analytical method number.
- Method type.
- Source type (flowing stream or river; lake or reservoir; or IGW).
- Number of *E. coli* per 100 mL.
- Turbidity in NTU.

(3) Turbidity. The approved analytical methods for turbidity are in 43.5(4)“a”(1). Turbidity measurements must be made by a party approved by the department, and reported on the laboratory data sheet with the corresponding *E. coli* sample.

43.11(4) *Disinfection profiling and benchmarking.*

a. General requirements. Following completion of the first round of source water monitoring, a system that plans to make a significant change to its disinfection practice must develop disinfection profiles and calculate disinfection benchmarks for *Giardia lamblia* and viruses.

(1) A system must notify the department prior to changing its disinfection practice and must include in the notice the completed disinfection profile and disinfection benchmark for *Giardia lamblia* and viruses, a description of the proposed change in disinfection practice, and an analysis of how the proposed change will affect the current level of disinfection.

(2) A significant change to the disinfection practice is defined as:

1. Any change to the point of disinfection;

2. Any change to the disinfectant(s) used in the treatment plant;
3. Any change to the disinfection process; or
4. Any other modification identified by the department as a significant change to disinfection practice.

b. Developing a disinfection profile. To develop a disinfection profile, a system must monitor at least weekly for a period of 12 consecutive months to determine the total log inactivation for *Giardia lamblia* and viruses. If a system monitors more frequently, the frequency must be evenly spaced. A system that operates for fewer than 12 months per year must monitor weekly during the operation period. Systems must determine log inactivation for *Giardia lamblia* through the entire plant, based on CT_{99.9} values in Appendix A, Tables 1 through 6, as applicable. Systems must determine log inactivation for viruses through the entire treatment plant based on a department-approved protocol.

(1) Monitoring requirements. Systems with a single point of disinfectant application prior to the entrance to the distribution system must conduct the monitoring in this subparagraph. Systems with multiple points of disinfectant application must conduct the same monitoring for each disinfection segment. Systems must monitor the parameters necessary to determine the total inactivation ratio. The analytical methods for the parameters are in 43.5(4)“a.” All measurements must be taken during peak hourly flow.

1. For systems using a disinfectant other than UV, the temperature of the disinfected water must be measured in degrees Celsius at each RDC sampling point or at an alternative department-approved location.
2. For systems using chlorine, the pH of the disinfected water must be measured at each chlorine RDC sampling point or at an alternative department-approved location.
3. The disinfectant contact time must be determined in minutes.

4. The RDCs of the water must be determined in mg/L before or at the first customer and prior to each additional point of disinfectant application.

5. A system may use existing data to meet the monitoring requirements if: the data are substantially equivalent to the required data, it has not made any significant change to its treatment practice, and it has the same source water as it had when the data were collected. Systems may develop disinfection profiles using up to three years of existing data.

6. A system may use disinfection profiles developed under 43.9(2) or 43.10(2) if it has not made a significant change to its treatment practice and has the same source water as it had when the profile was developed. The virus profile must be developed using the same data on which the *Giardia lamblia* profile is based.

(2) Total inactivation ratio calculation for *Giardia lamblia*.

1. Systems using only one point of disinfectant application may determine the total inactivation ratio ($CT_{\text{calc}}/CT_{99.9}$) for the disinfection segment using either of the following methods.

- Determine one inactivation ratio before or at the first customer during peak hourly flow;
- or
- Determine successive sequential inactivation ratios between the point of disinfectant application and a point before or at the first customer during peak hourly flow. Calculate the total inactivation ratio by determining the inactivation ratio for each sequence ($CT_{\text{calc}}/CT_{99.9}$) and adding the values together.

2. Systems using more than one point of disinfectant application before the first customer must determine the CT value of each disinfection segment immediately prior to the next point of disinfectant application, or for the final segment, before or at the first customer, during peak hourly flow. Calculate the ($CT_{\text{calc}}/CT_{99.9}$) value of each segment and add the values together to determine the total inactivation ratio.

3. Systems must then determine the total logs of inactivation by multiplying the total inactivation ratio by 3.0.

(3) Total inactivation ratio calculation for viruses. The system must calculate the log of inactivation for viruses using a department-approved protocol.

c. Disinfection benchmark calculation.

(1) For each year of profiling data collected and calculated under this subrule, systems must determine the lowest mean monthly level of both *Giardia lamblia* and virus inactivation. Systems must determine the mean *Giardia lamblia* and virus inactivation for each calendar month for each year of profiling data by dividing the sum of daily or weekly *Giardia lamblia* and virus log inactivation by the number of values calculated for that month.

(2) For a system with one year of profiling data, the disinfection benchmark is the lowest monthly mean value. For a system with more than one year of profiling data, the disinfection benchmark is the mean of the lowest monthly mean values of *Giardia lamblia* and virus log inactivation in each year of profiling data.

43.11(5) Bin classification. Upon completion of the first round of source water monitoring, systems must calculate an initial *Cryptosporidium* bin concentration for each plant for which monitoring was required. Calculation of the bin concentration must use the *Cryptosporidium* results reported under 43.11(3) “a.”

a. Calculation of mean Cryptosporidium or bin concentration value.

(1) For systems that collect a total of at least 48 samples, the bin concentration is equal to the arithmetic mean of all sample concentrations.

(2) For systems that collect at least 24 samples but not more than 47 samples, the bin concentration is equal to the highest arithmetic mean of all sample concentrations in any 12 consecutive months during which *Cryptosporidium* samples were collected.

(3) For systems that serve fewer than 10,000 people and monitor *Cryptosporidium* for only one year (i.e., 24 samples in 12 months), the bin concentration is equal to the arithmetic mean of all sample concentrations.

(4) For systems with plants operating only part of the year that monitor fewer than 12 months per year, the bin concentration is equal to the highest arithmetic mean of all sample concentrations during any year of *Cryptosporidium* monitoring.

(5) If the monthly *Cryptosporidium* sampling frequency varies, systems must first calculate a monthly average for each month of monitoring. Systems must then use these monthly average concentrations, rather than individual sample concentrations, in the applicable calculation for bin classification.

b. Determination of bin classification.

(1) First monitoring round. A system must determine the bin classification from Table 3, using its calculated bin concentration from 43.11(5) “a.”

Table 3: Bin Classification Table

System Type	<i>Cryptosporidium</i> Concentration, in oocysts/L	Bin Classification
Systems required to monitor for <i>Cryptosporidium</i> under 43.11(3) “b”(1) or 43.11(3) “b”(2) “3”	Fewer than 0.075 oocysts/L	Bin 1
	Between 0.075 and fewer than 1.0 oocysts/L	Bin 2
	Between 1.0 and fewer than 3.0 oocysts/L	Bin 3
	3.0 oocysts/L or greater	Bin 4
Systems serving fewer than 10,000 and not required to monitor for <i>Cryptosporidium</i> , pursuant to 43.11(3) “b”(2) “1”	Not applicable	Bin 1

(2) Second monitoring round. Following completion of the second round of source water monitoring, a system must recalculate its bin concentration and determine its new bin classification, using the protocols in 43.11(5) “a” and “b.”

c. Reporting bin classification to the department. Within six months of the end of the sampling period, the system must report its bin classification to the department for approval. The report must include a summary of the source water monitoring data and the calculation procedure used to determine the bin classification.

d. TT violation. Failure to comply with 43.11(5) “b” and “c” is a violation of the TT requirement.

43.11(6) Additional *Cryptosporidium* treatment requirements. A system must provide the level of additional *Cryptosporidium* treatment specified in Table 4 based on its bin classification determined in 43.11(5) and according to the schedule in 43.11(7).

a. Determination of additional requirements. Using Table 4, a system must determine any additional *Cryptosporidium* treatment requirements based upon its bin classification. The Bin 1 classification does not require any additional treatment. Bins 2 through 4 require additional treatment.

Table 4: Additional *Cryptosporidium* Treatment Requirements

Bin Classification	Treatment Used by the System for Compliance with 43.5, 43.9, and 43.10			
	Conventional filtration (including softening)	Direct filtration	Slow sand or diatomaceous earth filtration	Alternative filtration technologies
Bin 1	No additional treatment	No additional treatment	No additional treatment	No additional treatment
Bin 2	1-log treatment	1.5-log treatment	1-log treatment	At least 4.0-log ¹
Bin 3	2-log treatment	2.5-log treatment	2-log treatment	At least 5.0-log ¹
Bin 4	2.5-log treatment	3-log treatment	2.5-log treatment	At least 5.5-log ¹

¹The total *Cryptosporidium* removal and inactivation must be at least this value, as determined by the department.

b. Treatment requirements for Bins 2 through 4. A system that is classified as Bin 2, 3, or 4 must use one or more of the treatment and management options in 43.11(8) to comply with the additional *Cryptosporidium* treatment requirements. Systems classified as Bins 3 and 4 must achieve at least 1-log of additional *Cryptosporidium* treatment by using either one or a combination of the following: bag filters, bank filtration, cartridge filters, chlorine dioxide, membranes, ozone, or UV, as listed in 43.11(9) through 43.11(13).

c. TT violation. Failure by a system in any month to achieve treatment credit by meeting criteria in 43.11(9) through 43.11(13) that is at least equal to the level of treatment required in 43.11(6) “a” is a violation of the TT requirement.

d. Significant changes to the watershed. If, after the system’s completion of source water monitoring (either round), the department determines during a sanitary survey or an

equivalent source water assessment that significant changes occurred in the system's watershed that could lead to increased contamination of the source water by *Cryptosporidium*, the system must take department-specified actions to address the contamination. These actions may include additional source water monitoring or implementation of the microbial toolbox options in 43.11(8).

43.11(7) *Schedule for compliance with Cryptosporidium treatment.* Following the initial bin classification under 43.11(5), systems must provide the level of *Cryptosporidium* treatment required in 43.11(6), according to the schedule in Table 5. If a system's bin classification changes following the second round of source water monitoring, the system must provide the level of *Cryptosporidium* treatment required in 43.11(6), on a department-approved schedule.

Table 5: *Cryptosporidium* Treatment Compliance Dates

Schedule	Population Served by System	Compliance Date for <i>Cryptosporidium</i> treatment requirements ¹
1	At least 100,000 people	April 1, 2012
2	From 50,000 to 99,999 people	October 1, 2012
3	From 10,000 to 49,999 people	October 1, 2013
4	Fewer than 10,000 people	October 1, 2014

¹The department may allow up to an additional two years for compliance with the treatment requirement if the system must make capital improvements.

43.11(8) *Microbial toolbox options for meeting Cryptosporidium treatment requirements.* Systems receive the treatment credits listed in Table 6 by meeting the conditions for microbial toolbox options described in 43.11(9) through 43.11(13). Systems apply these treatment credits to meet the treatment requirements in 43.11(6). Table 6 summarizes options in the microbial toolbox.

Table 6: Microbial Toolbox Summary Table: Options, Treatment Credits, and Criteria

Toolbox Option	Specific Criteria Rule	<i>Cryptosporidium</i> treatment credit with design and implementation criteria
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Source Protection and Management Toolbox Options		
Watershed control program (WCP)	<u>43.11(9)</u>	0.5-log credit for department-approved program comprising required elements, annual program status report to department, and regular watershed survey.
Alternative source/intake management	<u>43.11(9)</u> “b”	No prescribed credit. Systems may conduct simultaneous monitoring for treatment bin classification at alternative intake locations or under alternative intake management strategies.
Prefiltration Toolbox Options		
Presedimentation basin with coagulation	<u>43.11(10)</u> “a”	0.5-log credit during any month that presedimentation basins achieve a monthly mean reduction of 0.5-log or greater in turbidity or alternative department-approved performance criteria. To be eligible, basins must be operated continuously with coagulant addition and all plant flow must pass through the basins.
Two-stage lime softening	<u>43.11(10)</u> “b”	0.5-log credit for two-stage softening where chemical addition and hardness precipitation occur in both stages. All plant flow must pass through both stages. Single-stage softening is credited as equivalent to conventional treatment.
Bank filtration	<u>43.11(10)</u> “c”	0.5-log credit for 25-foot setback; 1.0-log credit for 50-foot setback; aquifer must be unconsolidated sand containing at least 10 percent fines; average turbidity in wells must be less than 1 NTU. A system using a well followed by filtration when conducting source water monitoring must sample the well to determine bin classification and is not eligible for additional credit.
Treatment Performance Toolbox Options		
Combined filter performance	<u>43.11(11)</u> “a”	0.5-log credit for CFE turbidity less than or equal to 0.15 NTU in at least 95 percent of measurements each month.
Individual filter performance	<u>43.11(11)</u> “b”	0.5-log credit (in addition to the 0.5-log combined filter performance credit) if IFE turbidity is less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter and is never greater than 0.3 NTU in two consecutive measurements in any filter.
Demonstration of performance	<u>43.11(11)</u> “c”	Credit awarded to unit process or treatment train based on a demonstration to the department with a department-approved protocol.
Additional Filtration Toolbox Options		
Bag or cartridge filters (individual filters)	<u>43.11(12)</u> “a”	Up to 2-log credit based on the removal efficiency demonstrated during challenge testing with a 1.0-log factor of safety.
Bag or cartridge filters (in series)	<u>43.11(12)</u> “a”	Up to 2.5-log credit based on the removal efficiency demonstrated during challenge testing with a 0.5-log factor of safety.
Membrane filtration	<u>43.11(12)</u> “b”	Log credit equivalent to removal efficiency demonstrated in challenge test for device if supported by direct integrity testing.
Second-stage filtration	<u>43.11(12)</u> “c”	0.5-log credit for second separate granular media filtration stage if treatment train includes coagulation prior to first filter.
Slow sand filtration	<u>43.11(12)</u> “d”	2.5-log credit as a secondary filtration step; 3.0-log credit as a primary filtration process. No prior chlorination for either option.
Inactivation Toolbox Options		
Chlorine dioxide	<u>43.11(13)</u>	Log credit based on measured CT in relation to CT table.
Ozone	<u>43.11(13)</u>	Log credit based on measured CT in relation to CT table.
UV	<u>43.11(13)</u>	Log credit based on validated UV dose in relation to UV dose table; reactor validation testing required to establish UV dose and associated operating conditions.

43.11(9) Source toolbox components.

a. Watershed control program (WCP). Systems receive 0.5-log *Cryptosporidium* treatment credit for implementing a WCP that meets the requirements of this paragraph.

(1) Notification. Systems that intend to apply for the WCP credit must notify the department of this intent no later than two years prior to the applicable treatment compliance date in 43.11(7).

(2) Proposed watershed control plan. Systems must submit a proposed watershed control plan to the department no later than one year before the applicable treatment compliance date in 43.11(7). The department must approve the plan for the system to receive WCP treatment credit. The plan must include the following:

1. Identification of an “area of influence” outside of which the likelihood of *Cryptosporidium* or fecal contamination affecting the treatment plant intake is not significant.

This is the area to be evaluated in future watershed surveys under 43.11(9) “a”(5)“2.”

2. Identification of both potential and actual sources of *Cryptosporidium* contamination and an assessment of the relative impact of these sources on the system’s source water quality.

3. An analysis of the effectiveness and feasibility of control measures that could reduce *Cryptosporidium* loading from sources of contamination to the system’s source water.

4. A statement of goals and specific actions the system will undertake to reduce source water *Cryptosporidium* levels. The plan must explain how the actions are expected to contribute to specific goals, identify watershed partners and their roles, identify resource requirements and commitments, and include a schedule for plan implementation with deadlines for completing specific actions.

(3) Existing WCPs. Systems with WCPs that were in place on January 5, 2006, are eligible to seek this credit. The systems’ watershed control plans must meet the criteria in 43.11(9) “a”(2) and must specify ongoing and future actions that will reduce source water *Cryptosporidium* levels.

(4) Department response to plan. If the department does not respond to a system regarding approval of a watershed control plan submitted under this subrule and the system meets the other requirements of this subrule, the WCP will be considered approved and 0.5-log *Cryptosporidium* treatment credit will be awarded unless and until the department subsequently withdraws such approval.

(5) System requirements to maintain 0.5-log credit. Systems must complete the following actions to maintain the 0.5-log credit.

1. Submit an annual WCP status report to the department. The WPC status report must describe the system's implementation of the approved plan and assess the adequacy of the plan to meet its goals. The report must explain how the system is addressing any shortcomings in plan implementation, including those previously identified by the department or as a result of the watershed survey conducted under 43.11(9) "a"(5)"2." It must also describe any significant watershed changes that have occurred since the last watershed sanitary survey. If a system determines during implementation that significant changes to its approved WCP are necessary, it must notify the department prior to making the changes. If a program change is likely to reduce the level of source water protection, the system must list in its notification the actions the system will take to mitigate this effect.

2. Undergo a watershed sanitary survey every three years for CWSs and every five years for NTNCs or TNCs and submit the survey report to the department. Surveys must be conducted according to department guidelines and by persons acceptable to the department.

- A watershed sanitary survey must encompass the region identified in the department-approved watershed control plan as the area of influence; assess the implementation of actions to reduce source water *Cryptosporidium* levels; and identify any significant new sources of *Cryptosporidium*.

- If the department determines that significant changes may have occurred in the watershed since the previous watershed sanitary survey, systems must undergo another watershed sanitary survey by the department-specified date, which may be earlier than the regular three- or five-year frequency.

3. Systems must make the watershed control plan, annual status reports, and watershed sanitary survey reports available to the public upon request. These documents must be in plain

language and include criteria to evaluate the success of the WCP in achieving plan goals. The department may approve systems to withhold portions of the plan or the reports from the public, based on security considerations.

(6) Withdrawal of WCP treatment credit. If the department determines that a system is not carrying out the approved watershed control plan, it may withdraw the WCP treatment credit.

b. Alternative source. Systems may conduct source water monitoring that reflects a different intake location (either in the same source or for an alternate source) or a different procedure for the timing or level of withdrawal from the source (alternative source monitoring). If the department approves, a system may determine its bin classification under 43.11(5) based on alternative source monitoring results.

(1) Systems conducting alternative source monitoring must also monitor their current plan intake concurrently, as described in 43.11(3).

(2) Alternative source monitoring must meet the requirements for source monitoring to determine bin classification, as described in 43.11(3). Systems must report the alternative source monitoring results to the department and provide supporting information documenting the operating conditions during sample collection.

(3) If a system determines its bin classification under 43.11(5) using alternative source monitoring results that reflect a different intake location or a different procedure for managing the timing or level of withdrawal from the source, it must relocate the intake or permanently adopt the withdrawal procedure, as applicable, no later than the applicable treatment compliance date in 43.11(7).

43.11(10) *Prefiltration treatment toolbox components.*

a. Presedimentation. Systems receive 0.5-log *Cryptosporidium* treatment credit for a presedimentation basin during any month the process meets the criteria in this paragraph.

(1) The presedimentation basin must be in continuous operation and must treat the entire plant flow taken from a SW or IGW source.

(2) The system must continuously add a coagulant to the presedimentation basin.

(3) The presedimentation basin must achieve either of the following performance criteria:

1. Demonstrates at least 0.5-log mean reduction of influent turbidity, determined by using daily turbidity measurements in the presedimentation process influent and effluent, and calculated as follows: $\text{LOG}_{10}(\text{monthly mean of daily influent turbidity}) - \text{LOG}_{10}(\text{monthly mean of daily effluent turbidity})$; or

2. Complies with department-approved performance criteria that demonstrate at least 0.5-log mean removal of micron-sized particulate material through the presedimentation process.

b. Two-stage lime softening. Systems receive an additional 0.5-log *Cryptosporidium* treatment credit for a two-stage lime softening plant if chemical addition and hardness precipitation occur in two separate and sequential softening stages prior to filtration. Both softening stages must treat the entire plant flow taken from a SW or IGW source.

c. Bank filtration. Systems receive *Cryptosporidium* treatment credit for bank filtration that serves as pretreatment to a filtration plant by meeting the criteria in this paragraph. Systems using bank filtration when beginning source water monitoring under 43.11(3)“a” must collect samples as described in 43.11(3)“d”(3) and are not eligible for this credit.

(1) Treatment credit. Wells with a GW flow path of at least 25 feet receive 0.5-log treatment credit; wells with a GW flow path of at least 50 feet receive 1.0-log treatment credit. The GW flow path must be determined as specified in 43.11(10)“c”(4).

(2) Credit eligibility. Only horizontal and vertical wells in granular aquifers are eligible for treatment credit. Granular aquifers are those comprised of sand, clay, silt, rock fragments, pebbles or larger particles, and minor cement. A system must characterize the aquifer at the well site to determine aquifer properties. Systems must extract a core from the aquifer and

demonstrate that in at least 90 percent of the core length, grains less than 1.0 mm in diameter constitute at least 10 percent of the core material.

(3) GW flow path measurement. For vertical wells, the GW flow path is the measured distance from the edge of the surface water body under high flow conditions (determined by the 100-year floodplain elevation boundary or by the floodway, as defined in Federal Emergency Management Agency flood hazard maps) to the well screen. For horizontal wells, the GW flow path is the measured distance from the bed of the river under normal flow conditions to the closest horizontal well lateral screen.

(4) Turbidity monitoring at the wellhead. Systems must monitor each wellhead for turbidity at least once every four hours while the bank filtration process is in operation. If monthly average turbidity levels, based on daily maximum values in the well, exceed 1 NTU, the system must report this result to the department and conduct an assessment within 30 days to determine the cause of the high turbidity levels in the well. If the department determines that microbial removal has been compromised, it may revoke treatment credit until the system implements department-approved corrective actions to remediate the problem.

(5) Springs and infiltration galleries. This treatment credit is not eligible for springs and infiltration galleries. Springs and infiltration galleries are eligible for credit through demonstration of performance study under 43.11(11)“c.”

(6) Bank filtration demonstration of performance. The department may approve *Cryptosporidium* treatment credit for bank filtration based on a demonstration of performance study that meets the criteria in this subparagraph. This treatment credit may be greater than 1.0-log and may be awarded to bank filtration that does not meet the criteria in 43.11(10)“c”(1) to (5). The study must:

1. Follow a department-approved protocol;

2. Involve the collection of data on the removal of *Cryptosporidium* or a surrogate for *Cryptosporidium* and related hydrogeologic and WQPs during the full range of operating conditions; and

3. Include sampling both from the production well(s) and from monitoring wells that are screened and located along the shortest flow path between the SW source and the production well(s).

43.11(11) *Treatment performance toolbox components.* This option pertains to physical treatment processes.

a. Combined filter performance. Systems using conventional filtration treatment or direct filtration treatment receive an additional 0.5-log *Cryptosporidium* treatment credit during any month the system meets the criteria in this paragraph. CFE turbidity must be less than or equal to 0.15 NTU in at least 95 percent of the measurements. Turbidity must be measured as described in 43.5(4) and, if applicable, 43.10(4).

b. Individual filter performance. Systems using conventional filtration treatment or direct filtration treatment receive 0.5-log *Cryptosporidium* treatment credit during any month the system meets the criteria in this paragraph, which can be in addition to the CFE 0.5-log credit from 43.11(11) “a.” Compliance with these criteria must be based on individual filter turbidity monitoring as described in 43.9(4) or 43.10(5), as appropriate.

(1) The filtered water turbidity for each individual filter must be less than or equal to 0.15 NTU in at least 95 percent of the measurements recorded each month.

(2) No individual filter may have a measured turbidity greater than 0.3 NTU in two consecutive measurements taken 15 minutes apart.

(3) Any system that has received treatment credit for individual filter performance and fails to meet the requirements of 43.11(11) “b”(2) and 43.11(11) “b”(3) during any month shall not receive a TT violation under 43.11(6) if the department determines the following:

1. The failure was due to unusual and short-term circumstances that could not reasonably be prevented through optimizing the treatment plant design, operation, and maintenance.

2. The system has experienced no more than two such failures in any calendar year.

c. Demonstration of performance. The department may approve *Cryptosporidium* treatment credit for drinking water treatment processes based on a demonstration of performance study meeting the criteria in this paragraph. This treatment credit may be greater than or less than the prescribed treatment credits in 43.11(6) or 43.11(10) through 43.11(13) and may be awarded to treatment processes that do not meet the criteria for the prescribed credits.

(1) Systems cannot receive the prescribed treatment credit for any toolbox option in 43.11(10) through 43.11(13) if that toolbox option is included in a demonstration of performance study for which treatment credit is awarded under this paragraph.

(2) The demonstration of performance study must follow a department-approved protocol and must demonstrate the level of *Cryptosporidium* reduction the treatment process will achieve under the full range of expected operating conditions for the system.

(3) Department approval must be in writing and may include monitoring and treatment performance criteria that the system must demonstrate and report on an ongoing basis to remain eligible for the treatment credit. The department may designate such criteria where necessary to verify that the conditions under which the demonstration of performance credit was approved are maintained during routine operation.

43.11(12) *Additional filtration toolbox components.*

a. Bag and cartridge filters. By meeting the criteria in this paragraph, systems receive *Cryptosporidium* treatment credit of up to 2.0-log for the use of individual bag or cartridge filters and up to 2.5-log for the use of bag or cartridge filters operated in series. To be eligible for this credit, systems must report the results of challenge testing that meets the requirements

of 43.11(12)“a”(2) through 43.11(12)“a”(9) to the department. The filters must treat the entire plant flow taken from a SW or IGW source.

(1) The *Cryptosporidium* treatment credit awarded for use of bag or cartridge filters must be based on the removal efficiency demonstrated during challenge testing conducted in accordance with the criteria in 43.11(12)“a”(2) through 43.11(12)“a”(9). A safety factor equal to 1-log for individual bag or cartridge filters and 0.5-log for bag or cartridge filters in series must be applied to challenge testing results to determine removal credit.

(2) Perform challenge testing on full-scale bag or cartridge filters and associated filter housing or pressure vessels that are identical in material and construction to the filters and housings the system will use for removal of *Cryptosporidium*. Bag or cartridge filters must be challenge tested in the same configuration that the system will use, either as individual filters or as a series configuration of filters.

(3) Conduct challenge testing using *Cryptosporidium* or a surrogate that is removed no more efficiently than *Cryptosporidium*. The microorganism or surrogate used during challenge testing is referred to as the challenge particulate. The challenge particulate concentration must be determined using a method capable of discretely quantifying the specific microorganisms or surrogate used in the test; gross measurements such as turbidity shall not be used.

(4) The maximum feed water concentration that can be used during a challenge test must be based on the detection limit of the challenge particulate in the filtrate (i.e., filtrate detection limit) and must be calculated using this equation:

$$\text{Maximum Feed Water Concentration} = 10,000 \times \text{Filtrate Detection Limit}$$

(5) Conduct challenge testing at the maximum design flow rate for the filter specified by the manufacturer.

(6) Each filter evaluated must be tested for a duration sufficient to reach 100 percent of the terminal pressure drop, which thereby establishes the maximum pressure drop under which the filter may be used to comply with this paragraph.

(7) Removal efficiency of a filter must be determined from the results of the challenge test and expressed in terms of log removal values (LRV) using the following equation:

$$\text{LRV} = \text{LOG}_{10}(\text{C}_f) - \text{LOG}_{10}(\text{C}_p)$$

Where:

LRV = log removal value demonstrated during challenge test;

C_f = feed concentration measured during challenge test; and

C_p = filtrate concentration measured during challenge test.

Equivalent units must be used for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, the term C_p must be set equal to the detection limit.

(8) Each filter tested must be challenged with the challenge particulate during three periods over the filtration cycle: within two hours of start-up of a new filter; when the pressure drop is between 45 and 55 percent of the terminal pressure drop; and at the end of the cycle after the pressure drop has reached 100 percent of the terminal pressure drop. An LRV must be calculated for each of these challenge periods for each filter tested. The LRV for the filter ($\text{LRV}_{\text{filter}}$) must be assigned the value of the minimum LRV observed during the three challenge periods for that filter.

(9) If fewer than 20 filters are tested, the overall removal efficiency for the filter product line must be set equal to the lowest $\text{LRV}_{\text{filter}}$ among the filters tested. If 20 or more filters are tested, the overall removal efficiency for the filter product line must be set equal to the tenth percentile of the set of $\text{LRV}_{\text{filter}}$ values for the various filters tested. The percentile is defined by $[i/(n+1)]$ where “i” is the rank of “n” individual data points ordered lowest to highest. If necessary, the tenth percentile may be calculated using linear interpolation.

(10) If a previously tested filter is modified in a manner that could change the removal efficiency of the filter product line, conduct challenge testing to demonstrate the removal efficiency of the modified filter and submit the results to the department.

b. Membrane filtration.

(1) Systems receive *Cryptosporidium* treatment credit for using membrane filtration that meets the criteria of this paragraph. Systems using membrane cartridge filters that meet the definition of membrane filtration in 567—40.2(455B) are eligible for this credit. The level of treatment credit a system receives is equal to the lower of the values determined under the following two paragraphs:

1. The removal efficiency demonstrated during challenge testing conducted under the criteria in 43.11(12) “b”(2).

2. The maximum removal efficiency that can be verified through DIT used with the membrane filtration process under the conditions in 43.11(12) “b”(3).

(2) Challenge testing. The membrane used by the system must undergo challenge testing to evaluate removal efficiency, and the system must report the challenge testing results to the department. Conduct challenge testing according to the criteria in this subparagraph.

1. Conduct challenge testing on either a full-scale membrane module, identical in material and construction to the membrane modules used in the system’s treatment facility, or a smaller-scale membrane module, identical in material and similar in construction to the full-scale module. A module is defined as the smallest component of a membrane unit in which a specific membrane surface area is housed in a device with a filtrate outlet structure.

2. Conduct challenge testing using *Cryptosporidium* oocysts or a surrogate that is removed no more efficiently than *Cryptosporidium* oocysts. The organisms or surrogate used during challenge testing is referred to as the challenge particulate. The concentration of the challenge particulate, in both the feed and filtrate water, must be determined using a method capable of

discretely quantifying the specific challenge particulate used in the test; gross measurements such as turbidity shall not be used.

3. The maximum feed water concentration that can be used during a challenge test is based on the detection limit of the challenge particulate in the filtrate and must be determined according to the following equation:

$$\text{Maximum Feed Water Concentration} = 3,160,000 \times \text{Filtrate Detection Limit}$$

4. Conduct challenge testing under representative hydraulic conditions at the maximum design flux and maximum design process recovery specified by the manufacturer for the membrane module. Flux is defined as the throughput of a pressure-driven membrane process expressed as flow per unit of membrane area. Recovery is defined as the volumetric percent of feed water that is converted to filtrate over the course of an operating cycle uninterrupted by events such as chemical cleaning or a solids removal process (i.e., backwashing).

5. Calculate removal efficiency of a membrane module using the challenge test results expressed as a log removal value (LRV), according to the following equation:

$$\text{LRV} = \text{LOG}_{10}(C_f) - \text{LOG}_{10}(C_p)$$

Where:

LRV = log removal value demonstrated during challenge test;

C_f = feed concentration measured during challenge test; and

C_p = filtrate concentration measured during challenge test.

Use equivalent units for the feed and filtrate concentrations. If the challenge particulate is not detected in the filtrate, the term C_p must be set equal to the detection limit for the purpose of calculating the LRV. An LRV must be calculated for each membrane module evaluated during the challenge test.

6. The removal efficiency of a membrane filtration process demonstrated during challenge testing must be expressed as a log removal value ($\text{LRV}_{\text{C-Test}}$). If fewer than 20 modules are

tested, then LRV_{C-Test} is equal to the lowest of the representative LRVs among the modules tested. If 20 or more modules are tested, then LRV_{C-Test} is equal to the tenth percentile of the representative LRVs among the modules tested. The percentile is defined by $[i/(n+1)]$ where “i” is the rank of “n” individual data points ordered lowest to highest. If necessary, the tenth percentile may be calculated using linear interpolation.

7. The challenge test must establish a quality control release value (QCRV) for a nondestructive performance test that demonstrates the *Cryptosporidium* removal capability of the membrane filtration module. In order to verify *Cryptosporidium* removal capability, this performance test must be applied to each production membrane module that was not directly challenge tested but was used by the system. Production modules that do not meet the established QCRV are not eligible for the treatment credit demonstrated during the challenge test.

8. If a previously tested membrane is modified in a manner that could change the removal efficiency of the membrane or the applicability of the nondestructive performance test and associated QCRV, conduct additional challenge testing to demonstrate the removal efficiency of the modified membrane and submit the results to the department, along with determination of a new QCRV.

(3) Direct integrity testing (DIT). Systems must conduct DITs in a manner that demonstrates a removal efficiency equal to or greater than the removal credit awarded for the membrane filtration process and meets the requirements of this subparagraph. A DIT is defined as a physical test applied to a membrane unit in order to identify and isolate integrity breaches (i.e., one or more leaks that could result in contamination of the filtrate).

1. A DIT must be independently applied to each membrane unit in service. A membrane unit is defined as a group of membrane modules that share common valving that allows the

unit to be isolated from the rest of the system for the purpose of integrity testing or other maintenance.

2. The DIT method must have a resolution of 3 micrometers or less, where resolution is defined as the size of the smallest integrity breach that contributes to a response from the DIT.

3. The DIT must have a sensitivity sufficient to verify the log treatment credit awarded by the department for the membrane filtration process, where sensitivity is defined as the maximum LRV that can be reliably verified by a DIT. Sensitivity must be determined using the approach applicable to the type of DIT the system uses, as follows:

- For DITs using applied pressure or vacuum, calculate test sensitivity using the following equation:

$$LRV_{DIT} = \text{LOG}_{10} [Q_p / (VCF \times Q_{\text{breach}})]$$

Where:

LRV_{DIT} = the sensitivity of the DIT;

Q_p = total design filtrate flow from the membrane unit;

Q_{breach} = flow of water from an integrity breach associated with the smallest integrity test response that can be reliably measured; and

VCF = volumetric concentration factor, which is the ratio of the suspended solids concentration on the high-pressure side of the membrane relative to that in the feed water.

- For DITs using a particulate or molecular marker, calculate test sensitivity using the following equation:

$$LRV_{DIT} = \text{LOG}_{10} (C_f) - \text{LOG}_{10} (C_p)$$

Where:

LRV_{DIT} = the sensitivity of the DIT;

C_f = typical feed concentration of the marker used in the test; and

C_p = filtrate concentration of the marker from an integral membrane unit.

4. Establish a control limit within the sensitivity limits of the DIT that is indicative of an integral membrane unit capable of meeting the removal credit awarded by the department.

5. If the result of a DIT exceeds the control limit established under 43.11(12) “b”(3) “4,” the system must remove the membrane unit from service. Systems must conduct a DIT to verify any repairs and may return the membrane unit to service only if the DIT is within the established control limit.

6. Conduct a DIT on each membrane unit at a frequency of not less than once each day that the membrane unit is in operation. The department may approve less frequent testing, based on demonstrated process reliability, the use of multiple barriers effective for *Cryptosporidium*, or reliable process safeguards.

(4) Indirect integrity monitoring. Systems must conduct continuous indirect integrity monitoring on each membrane unit according to the following criteria. Indirect integrity monitoring is defined as monitoring some aspect of filtrate water quality that is indicative of the removal of particulate matter. A system that implements continuous DITs of membrane units in accordance with 43.11(12) “b”(3) is not subject to the continuous indirect integrity monitoring requirements. Systems must submit a monthly report to the department summarizing all continuous indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken in each case.

1. Continuous indirect integrity monitoring must:

- Include continuous filtrate turbidity monitoring, unless the department approves an alternative parameter;
- Be conducted at a frequency of no less than once every 15 minutes; and
- Be separately conducted on each membrane unit.

2. If indirect integrity monitoring includes turbidity and if the filtrate turbidity readings are above 0.15 NTU for a period greater than 15 minutes (i.e., two consecutive 15-minute

readings above 0.15 NTU), DIT must immediately be performed on the associated membrane unit as specified in 43.11(12)“b”(3)“1” through “5.”

3. If indirect integrity monitoring includes a department-approved alternative parameter and if the alternative parameter exceeds a department-approved control limit for a period greater than 15 minutes, DIT must immediately be performed on the associated membrane units as specified in 43.11(12)“b”(3)“1” through“5.”

c. Second-stage filtration. Systems receive 0.5-log *Cryptosporidium* treatment credit for using a separate second stage of filtration that consists of sand, dual media, GAC, or other fine-grain media following granular media filtration, if the department approves. To be eligible for this credit, the first stage of filtration must be preceded by a coagulation step and both filtration stages must treat the entire plant flow taken from a SW or IGW source. A cap, such as GAC, on a single stage of filtration is not eligible for this credit. The department must approve the treatment credit based on an assessment of the design characteristics of the filtration process.

d. Slow sand filtration (as secondary filter). Systems are eligible to receive 2.5-log *Cryptosporidium* treatment credit for using a slow sand filtration process that follows a separate stage of filtration if both filtration stages treat the entire plant flow taken from a SW or IGW source and no disinfectant residual is present in the influent water to the slow sand filtration process. The department must approve the treatment credit based on an assessment of the design characteristics of the filtration process. This does not apply to treatment credit awarded for slow sand filtration used as a primary filtration process.

43.11(13) Inactivation toolbox components.

a. Calculation of CT values.

(1) CT is the product of the disinfectant contact time (T, in minutes) and disinfectant concentration (C, in milligrams per liter). Systems with treatment credit for chlorine dioxide

or ozone under 43.11(13) “b” or “c” must calculate CT at least once each day, with both C and T measured during peak hourly flow as specified in 43.5(4).

(2) Systems with several disinfection segments in sequence may calculate CT for each segment, where a disinfection segment is defined as a treatment unit process with a measurable disinfectant residual level and a liquid volume. Under this approach, systems must add the *Cryptosporidium* CT values in each segment to determine the total CT for the treatment plant.

b. CT values for chlorine dioxide and ozone. As described in 43.11(13) “a”:

(1) Systems receive the *Cryptosporidium* treatment credit in Table 1 of Appendix B by meeting the corresponding chlorine dioxide CT value for the applicable water temperature.

(2) Systems receive the *Cryptosporidium* treatment credit in Table 2 of Appendix B by meeting the corresponding ozone CT value for the applicable water temperature.

c. Site-specific study. The department may approve alternative chlorine dioxide or ozone CT values to those in 43.11(13) “b” on a site-specific basis. The department must base its approval on a site-specific study conducted by the system. The study must follow a department-approved protocol.

d. Ultraviolet light (UV). Systems receive *Cryptosporidium*, *Giardia lamblia*, and virus treatment credits for UV light reactors by achieving the corresponding UV dose values in Table 3 of Appendix B. Systems must use the following procedures to validate and monitor UV reactors in order to demonstrate that the reactors are achieving a particular UV dose value for treatment credit.

(1) Reactor validation testing. Systems must use UV reactors that have undergone validation testing to determine the operating conditions under which the reactor delivers the required UV dose (i.e., validated operating conditions). These operating conditions must include flow rate, UV intensity as measured by a UV sensor, and UV lamp status.

1. When determining validated operating conditions, systems must account for the following factors: UV absorbance of the water; lamp fouling and aging; measurement uncertainty of on-line sensors; UV dose distributions arising from the velocity profiles through the reactor; failure of UV lamps or other critical system components; and UV reactor inlet and outlet piping or channel configurations.

2. Validation testing must include full-scale testing of a reactor that conforms uniformly to the UV reactors used by the system and inactivation of a test microorganism whose dose response characteristics have been quantified with a low-pressure mercury vapor lamp.

3. The department may approve an alternative approach to validation testing.

(2) Reactor monitoring.

1. Systems must monitor their UV reactors to determine if the reactors are operating within validated conditions, as determined under 43.11(13) “d”(1). This monitoring must include UV sensor, flow rate, lamp status, and other parameters the department designates based on UV reactor operation. Systems must verify the calibration of UV sensors and recalibrate sensors in accordance with a department-approved protocol.

2. To receive UV light treatment credit, systems must treat at least 95 percent of the water delivered to the public during each month by UV reactors operating within validated conditions for the required UV dose. Systems must demonstrate compliance with this condition by completing the monitoring required in this subparagraph.

43.11(14) Reporting requirements. Systems must report the following to the department:

- a. Source water sampling schedules and monitoring results under 43.11(3) “c” and “e,” unless the systems notify the department that they will not conduct source water monitoring due to meeting the criteria of 5.5-log treatment for *Cryptosporidium* under 43.11(3) “a.”

- b. *Cryptosporidium* bin classification determined under 43.11(5).

c. Disinfection profiles and benchmarks as described in 43.11(4) “a” and “b” prior to making a significant change in disinfection practice.

d. In accordance with Table 7 for any microbial toolbox options used to comply with treatment requirements under 43.11(6).

Table 7: Microbial Toolbox Reporting Requirements

Toolbox Option	Systems must submit this information	Submit information in accordance with the applicable treatment compliance dates in subrule 43.11(7), as noted
1. Watershed control program (WCP)	Notice of intention to develop a new or continue an existing WCP	No later than two years before applicable date
	Watershed control plan	No later than one year before applicable date
	Annual WCP status report	Every 12 months, beginning one year after applicable date
	Watershed sanitary survey report	- For CWS, every 3 years, beginning 3 years after applicable date - For NTNC or TNC, every 5 years, beginning 5 years after applicable date
2. Alternative source/intake management	Verification that system has relocated the intake or adopted the intake withdrawal procedure reflected in monitoring results	No later than the applicable date
3. Presedimentation	Monthly verification: - Continuous basin operation; - Treatment of 100 percent of the flow; - Continuous coagulant addition; and - At least 0.5-log mean reduction of influent turbidity or compliance with alternative department-approved performance criteria	Monthly reporting within 10 days following the month monitoring was conducted, beginning on applicable date
4. Two-stage lime softening	Monthly verification: - Chemical addition and hardness precipitation occurred in two separate and sequential softening stages prior to filtration; and - Both stages treated 100 percent of plant flow	Monthly reporting within 10 days following the month monitoring was conducted, beginning on applicable date
5. Bank filtration	Initial demonstration of: - Unconsolidated, predominantly sandy aquifer; and - Setback distance of at least 25 feet for 0.5-log credit or 50 feet for 1.0-log credit	No later than applicable date
	If monthly average of daily maximum turbidity is greater than 1 NTU, report result and submit an assessment of the cause.	Report within 30 days following the month monitoring was conducted, beginning on applicable date
6. Combined filter performance	Monthly verification of CFE turbidity levels less than or equal to 0.15 NTU in at least 95 percent of the 4-hour CFE measurements taken each month	Monthly reporting within 10 days following the month monitoring was conducted, beginning on applicable date
7. Individual filter performance	Monthly verification of: - IFE turbidity levels less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter; and - No IFE turbidity levels greater than 0.3 NTU in two consecutive readings 15 minutes apart	Monthly reporting within 10 days following the month monitoring was conducted, beginning on applicable date
8. Demonstration of performance	Results from testing following a department-approved protocol	No later than applicable date
	As required by the department, monthly verification of operation within conditions of department approval for demonstration of performance credit	Within 10 days following the month monitoring was conducted, beginning on applicable date

9. Bag filters and cartridge filters	Demonstration that the: - Process meets the definition of bag or cartridge filtration, and - Removal efficiency established through challenge testing is meeting criteria	No later than applicable date
	Monthly verification that 100 percent of plant flow was filtered	Within 10 days following the month monitoring was conducted, beginning on applicable date
10. Membrane filtration	Results of verification testing demonstrating: - Removal efficiency established through challenge testing meets criteria; and - Integrity test method and parameters, including resolution, sensitivity, test frequency, control limits, and associated baseline	No later than applicable date
	Monthly report summarizing: - All DITs above the control limit, and - If applicable, any turbidity or alternative department-approved indirect integrity monitoring results triggering DITs and corrective action that was taken	Within 10 days following the month monitoring was conducted, beginning on applicable date
11. Second-stage filtration	Monthly verification that 100 percent of flow was filtered through both stages and that first stage was preceded by coagulation step	Within 10 days following the month monitoring was conducted, beginning on applicable date
12. Slow sand filtration as a secondary filter	Monthly verification that both a slow sand filter and a preceding separate stage of filtration treated 100 percent of the flow from surface or IGW sources	Within 10 days following the month monitoring was conducted, beginning on applicable date
13. Chlorine dioxide	Summary of CT values for each day as described in 43.11(13)	Within 10 days following the month monitoring was conducted, beginning on applicable date
14. Ozone	Summary of CT values for each day as described in 43.11(13)	Within 10 days following the month monitoring was conducted, beginning on applicable date
15. UV	Validation test results demonstrating operating conditions that achieve required UV dose	No later than the applicable date
	Monthly report summarizing the percentage of water entering the distribution system that was not treated by UV reactors operating within validated conditions for the required dose as specified in 43.11(13)“d”	Within 10 days following the month monitoring was conducted, beginning on applicable date

43.11(15) Recordkeeping requirements.

a. Source water monitoring. Systems must keep results from the initial round of source water monitoring under 43.11(3) “a” and the second round of source water monitoring under 43.11(3) “b” until three years after bin classification under 43.11(5) for the particular round of monitoring.

b. Systems meeting 5.5-log Cryptosporidium treatment. Systems must keep, for three years, records of any notification to the department that they will meet the 5.5-log *Cryptosporidium* treatment requirements and avoid source water monitoring.

c. Microbial toolbox treatment monitoring. Systems must keep the results of treatment monitoring associated with microbial toolbox options under 43.11(8) through 43.11(13) for three years.

567—43.12(455B) Turbidity optimization goals. SW and IGW systems must meet the requirements in this chapter. To encourage operational optimization, the department has adopted the following goals for systems using SW or IGW that wish to pursue the optimization of their existing treatment processes. These goals are voluntary. Data collected for optimization purposes will not be used to determine compliance with this chapter unless the optimization data are identical to the compliance data.

43.12(1) *Sedimentation performance goals.* The sedimentation performance goals are based upon the average annual raw water turbidity levels. When the annual average raw water turbidity is:

a. Less than or equal to 10 NTU over the course of the calendar year, the turbidity should be less than or equal to 1 NTU in at least 95 percent of measurements based on the maximum daily value of readings taken at least once every four hours from each sedimentation basin while the plant is operating.

b. More than 10 NTU over the course of the calendar year, the turbidity should be less than or equal to 2 NTU in at least 95 percent of measurements based on the maximum daily value of readings taken at least once every four hours from each sedimentation basin while the plant is operating.

43.12(2) *Individual filter performance goals.* Individual filter performance goals depend upon a system's capability of filtering to waste.

a. For systems that have the capability of filtering to waste, the individual filter turbidity should be less than or equal to 0.10 NTU in at least 95 percent of measurements over the course of the calendar year, based on the daily maximum value of readings recorded at least

once per minute while the plant is in operation. The maximum individual filter turbidity must not exceed 0.30 NTU at any time. The filter must return to service with a turbidity of 0.10 NTU or less.

b. For systems that do not have the capability of filtering to waste, the individual filter turbidity should be less than or equal to 0.10 NTU in at least 95 percent of measurements over the course of the calendar year, excepting the 15 minutes following the completion of the backwash process, based on the daily maximum value of readings recorded at least once per minute while the plant is in operation. The maximum individual filter turbidity must not exceed 0.30 NTU following backwash and must return to a level at or below 0.10 NTU within 15 minutes of returning the filter to service.

43.12(3) *Combined filter performance goal.* The combined filter performance goal has two components:

a. CFE turbidity should be less than or equal to 0.10 NTU in at least 95 percent of measurements over the course of the calendar year, based on daily maximum value of readings recorded at least once per minute while the plant is operating.

b. The maximum CFE turbidity must not exceed 0.30 NTU at any time.

These rules are intended to implement Iowa Code sections 455B.171 through 455B.188 and 455B.190 through 455B.192.

APPENDIX A: DISINFECTION PROFILING - CT VALUES (CT_{99.9}) FOR 99.9

PERCENT INACTIVATION OF *GIARDIA LAMBIA* CYSTS

These tables provide the CT_{99.9} values in mg-min/L for 99.9 percent (3-log) inactivation of *Giardia lamblia* cysts using the indicated disinfectant at the indicated temperature in degrees Celsius (°C). The CT values in the tables achieve greater than a 99.99 percent (4-log) inactivation of viruses. Any CT values between the indicated pH values in each table and any CT values between the indicated temperatures of different tables may be determined by linear

interpolation. If no interpolation is used, use the CT_{99.9} value at the lower temperature and at the higher pH.

TABLE 1: Inactivation by Free Chlorine at 0.5 °C or Lower

Free Residual Chlorine, mg/L	pH, standard units						
	>6.0	6.5	7.0	7.5	8.0	8.5	>9.0
>0.4	137	163	195	237	277	329	390
0.6	141	168	200	239	286	342	407
0.8	145	172	205	246	295	354	422
1.0	148	176	210	253	304	365	437
1.2	152	180	215	259	313	376	451
1.4	155	184	221	266	321	387	464
1.6	157	189	226	273	329	397	477
1.8	162	193	231	279	338	407	489
2.0	165	197	236	286	346	417	500
2.2	169	201	242	297	353	426	511
2.4	172	205	247	298	361	435	522
2.6	175	209	252	304	368	444	533
2.8	178	213	257	310	375	452	543
3.0	181	217	261	316	382	460	552

TABLE 2: Inactivation by Free Chlorine at 5.0 °C

Free Residual Chlorine, mg/L	pH, standard units						
	>6.0	6.5	7.0	7.5	8.0	8.5	>9.0
>0.4	97	117	139	166	198	236	279
0.6	100	120	143	171	204	244	291
0.8	103	122	146	175	210	252	301
1.0	105	125	149	179	216	260	312
1.2	107	127	152	183	221	267	320
1.4	109	130	155	187	227	274	329
1.6	111	132	158	192	232	281	337
1.8	114	135	162	196	238	287	345
2.0	116	138	165	200	243	294	353
2.2	118	140	169	204	248	300	361
2.4	120	143	172	209	253	306	368
2.6	122	146	175	213	258	312	375
2.8	124	148	178	217	263	318	382
3.0	126	151	182	221	268	324	389

TABLE 3: Inactivation by Free Chlorine at 10.0 °C

Free Residual Chlorine, mg/L	pH, standard units						
	>6.0	6.5	7.0	7.5	8.0	8.5	>9.0
>0.4	73	88	104	125	149	177	209
0.6	75	90	107	128	153	183	218
0.8	78	92	110	131	158	189	226
1.0	79	94	112	134	162	195	234
1.2	80	95	114	137	166	200	240
1.4	82	98	116	140	170	206	247
1.6	83	99	119	144	174	211	253
1.8	86	101	122	147	179	215	259
2.0	87	104	124	150	182	221	265
2.2	89	105	127	153	186	225	271

2.4	90	107	129	157	190	230	276
2.6	92	110	131	160	194	234	281
2.8	93	111	134	163	197	239	287
3.0	95	113	137	166	201	243	292

TABLE 4: Inactivation by Free Chlorine at 15.0 °C

Free Residual Chlorine, mg/L	pH, standard units						
	>6.0	6.5	7.0	7.5	8.0	8.5	>9.0
>0.4	49	59	70	83	99	118	140
0.6	50	60	72	86	102	122	146
0.8	52	61	73	88	105	126	151
1.0	53	63	75	90	108	130	156
1.2	54	64	76	92	111	134	160
1.4	55	65	78	94	114	137	165
1.6	56	66	79	96	116	141	169
1.8	57	68	81	98	119	144	173
2.0	58	69	83	100	122	147	177
2.2	59	70	85	102	124	150	181
2.4	60	72	86	105	127	153	184
2.6	61	73	88	107	129	156	188
2.8	62	74	89	109	132	159	191
3.0	63	76	91	111	134	162	195

TABLE 5: Inactivation by Free Chlorine at 20.0 °C

Free Residual Chlorine, mg/L	pH, standard units						
	>6.0	6.5	7.0	7.5	8.0	8.5	>9.0
>0.4	36	44	52	62	74	89	105
0.6	38	45	54	64	77	92	109
0.8	39	46	55	66	79	95	113
1.0	39	47	56	67	81	98	117
1.2	40	48	57	69	83	100	120
1.4	41	49	58	70	85	103	123
1.6	42	50	59	72	87	105	126
1.8	43	51	61	74	89	108	129
2.0	44	52	62	75	91	110	132
2.2	44	53	63	77	93	113	135
2.4	45	54	65	78	95	115	138
2.6	46	55	66	80	97	117	141
2.8	47	56	67	81	99	119	143
3.0	47	57	68	83	101	122	146

TABLE 6: Inactivation by Free Chlorine at 25.0 °C and Higher

Free Residual Chlorine, mg/L	pH, standard units						
	>6.0	6.5	7.0	7.5	8.0	8.5	>9.0
0.4	24	29	35	42	50	59	70
0.6	25	30	36	43	51	61	73
0.8	26	31	37	44	53	63	75
1.0	26	31	37	45	54	65	78
1.2	27	32	38	46	55	67	80
1.4	27	33	39	47	57	69	82
1.6	28	33	40	48	58	70	84
1.8	29	34	41	49	60	72	86
2.0	29	35	41	50	61	74	88

2.2	30	35	42	51	62	75	90
2.4	30	36	43	52	63	77	92
2.6	31	37	44	53	65	78	94
2.8	31	37	45	54	66	80	96
3.0	32	38	46	55	67	81	97

TABLE 7: Inactivation by Chlorine Dioxide and Ozone

Disinfectant	Water Temperature, °C					
	<1	5	10	15	20	>25
Chlorine Dioxide	63	26	23	19	15	11
Ozone	2.9	1.9	1.4	0.95	0.72	0.48

TABLE 8: Inactivation by Chloramines¹

Disinfectant	Water Temperature, °C					
	<1	5	10	15	20	25
Chloramines	3800	2200	1850	1500	1100	750

¹These values are for pH values of 6 to 9 standard units. These CT values may be assumed to achieve greater than 99.99

percent (4-log) inactivation of viruses only if chlorine is added and mixed in the water prior to the addition of ammonia. If this condition is not met, the system must demonstrate, based on on-site studies or other department-approved information, that the system is achieving at least 99.99 percent (4-log) inactivation of viruses.

APPENDIX B: CT TABLES FOR *CRYPTOSPORIDIUM* INACTIVATION

TABLE 1: CT Values (mg-min/L) for *Cryptosporidium* Inactivation by Chlorine Dioxide¹

Log Credit	Water Temperature, °C										
	>0.5	1	2	3	5	7	10	15	20	25	30
0.25	159	153	140	128	107	90	69	45	29	19	12
0.5	319	305	279	256	214	180	138	89	58	38	24
1.0	637	610	558	511	429	360	277	179	116	75	49
1.5	956	915	838	767	643	539	415	268	174	113	73
2.0	1275	1220	1117	1023	858	719	553	357	232	150	98
2.5	1594	1525	1396	1278	1072	899	691	447	289	188	122
3.0	1912	1830	1675	1534	1286	1079	830	536	347	226	147

¹Systems may use this equation to determine log credit between the indicated values: $\text{Log credit} = [0.001506 \times (1.09116)^{\text{Temp}}] \times \text{CT}$

TABLE 2: CT Values (mg-min/L) for *Cryptosporidium* Inactivation by Ozone¹

Log Credit	Water Temperature, °C										
	>0.5	1	2	3	5	7	10	15	20	25	30
0.25	6.0	5.8	5.2	4.8	4.0	3.3	2.5	1.6	1.0	0.6	0.39
0.5	12	12	10	9.5	7.9	6.5	4.9	3.1	2.0	1.2	0.78
1.0	24	23	21	19	16	13	9.9	6.2	3.9	2.5	1.6
1.5	36	35	31	29	24	20	15	9.3	5.9	3.7	2.4
2.0	48	46	42	38	32	26	20	12	7.8	4.9	3.1
2.5	60	58	52	48	40	33	25	16	9.8	6.2	3.9
3.0	72	69	63	57	47	39	30	19	12	7.4	4.7

¹Systems may use this equation to determine log credit between the indicated values: $\text{Log credit} = [0.0397 \times (1.09757)^{\text{Temp}}] \times \text{CT}$

TABLE 3: UV Dose for *Cryptosporidium*, *Giardia lamblia*, and Virus Inactivation Credit¹

Log Credit	<i>Cryptosporidium</i> UV dose (mJ/cm ²)	<i>Giardia lamblia</i> UV dose (mJ/cm ²)	Virus UV dose (mJ/cm ²)
0.5	1.6	1.5	39
1.0	2.5	2.1	58
1.5	3.9	3.0	79
2.0	5.8	5.2	100
2.5	8.5	7.7	121
3.0	12	11	143
3.5	15	15	163
4.0	22	22	186

¹The treatment credits listed in Table 3 are for UV light at a wavelength of 254 nm as produced by a low-pressure mercury vapor lamp. To receive treatment credit for other lamp types, systems must demonstrate an equivalent germicidal dose through reactor validation testing. The UV dose values in this table are applicable only to post-filter applications of UV in filtered systems.

APPENDIX C: CT TABLES FOR VIRUS INACTIVATION UNDER THE GROUNDWATER RULE, 567—41.7(455B)

TABLE 1: CT Values (mg-min/L) for Inactivation of Viruses by Free Chlorine, pH 6.0-9.0

(CT values provided are modified by linear interpolation between 0.5° Celsius (C) increments)

Inactivation Log Credit	Water Temperature, °C												
	1	2	3	4	5	6	7	8	9	10	11	12	13
2	5.8	5.3	4.9	4.4	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4
3	8.7	8.0	7.3	6.7	6.0	5.6	5.2	4.8	4.4	4.0	3.8	3.6	3.4
4	11.6	10.7	9.8	8.9	8.0	7.6	7.2	6.8	6.4	6.0	5.6	5.2	4.8
Inactivation Log Credit	Water Temperature, °C												
	14	15	16	17	18	19	20	21	22	23	24	25	
2	2.2	2.0	1.8	1.6	1.4	1.2	1.0	1.0	1.0	1.0	1.0	1.0	1.0
3	3.2	3.0	2.8	2.6	2.4	2.2	2.0	1.8	1.6	1.4	1.2	1.0	1.0
4	4.4	4.0	3.8	3.6	3.4	3.2	3.0	2.8	2.6	2.4	2.2	2.0	2.0

TABLE 2: CT Values (mg-min/L) for Inactivation of Viruses by Free Chlorine, pH 9.1-10.0

Inactivation Log Credit	Water Temperature, °C					
	0.5	5	10	15	20	25
2	45	30	22	15	11	7
3	66	44	33	22	16	11
4	90	60	45	30	22	15

TABLE 3: CT Values (mg-min/L) for Inactivation of Viruses by Chlorine Dioxide, pH 6.0-9.0

(CT values provided are modified by linear interpolation between 0.5°C increments)

Inactivation	Water Temperature, °C
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Log Credit	1	2	3	4	5	6	7	8	9	10	11	12	13
2	8.4	7.7	7.0	6.3	5.6	5.3	5.0	4.8	4.5	4.2	3.9	3.6	3.4
3	25.6	23.5	21.4	19.2	17.1	16.2	15.4	14.5	13.7	12.8	12.0	11.1	10.3
4	50.1	45.9	41.8	37.6	33.4	31.7	30.1	28.4	26.8	25.1	23.4	21.7	20.1
Inactivation Log Credit	Water Temperature, °C												
	14	15	16	17	18	19	20	21	22	23	24	25	
2	3.1	2.8	2.7	2.5	2.4	2.2	2.1	2.0	1.8	1.7	1.5	1.4	
3	9.4	8.6	8.2	7.7	7.3	6.8	6.4	6.0	5.6	5.1	4.7	4.3	
4	18.4	16.7	15.9	15.0	14.2	13.3	12.5	11.7	10.9	10.0	9.2	8.4	

TABLE 4: CT Values (mg-min/L) for Inactivation of Viruses by Ozone

(CT values provided are modified by linear interpolation between 0.5°C increments)

Inactivation Log Credit	Water Temperature, °C												
	1	2	3	4	5	6	7	8	9	10	11	12	13
2	0.90	0.83	0.75	0.68	0.60	0.58	0.56	0.54	0.52	0.50	0.46	0.42	0.38
3	1.40	1.28	1.15	1.03	0.90	0.88	0.86	0.84	0.82	0.80	0.74	0.68	0.62
4	1.80	1.65	1.50	1.35	1.20	1.16	1.12	1.08	1.04	1.00	0.92	0.84	0.76
Inactivation Log Credit	Water Temperature, °C												
	14	15	16	17	18	19	20	21	22	23	24	25	
2	0.34	0.30	0.29	0.28	0.27	0.26	0.25	0.23	0.21	0.19	0.17	0.15	
3	0.56	0.50	0.48	0.46	0.44	0.42	0.40	0.37	0.34	0.31	0.28	0.25	
4	0.68	0.60	0.58	0.56	0.54	0.52	0.50	0.46	0.42	0.38	0.34	0.30	

No CT table is provided for chloramines or total chlorine because the CT values would be prohibitively high for GW systems. Tables are from the EPA Groundwater Rule Implementation Guidance, EPA 816-R-09-004, January 2009, pages 97-98.

**Iowa Department of Natural Resources
Environmental Protection Commission**

Decision Item (**indicates proposed consent item*)

***17. Chapter 44, “Drinking Water State Revolving Fund” – Final Rule**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 44. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 44 establishes a program for the joint administration of Iowa’s Drinking Water State Revolving Fund (DWSRF). The DWSRF provides financial assistance through below market rate loans to eligible public water supply systems for the design and construction of drinking water facilities to ensure public health and for the provision of safe and adequate drinking water pursuant to the Safe Drinking Water Act. Iowa has implemented a DWSRF program since 1998. This chapter was reviewed and edited consistent with Executive Order 10. Changes include removal of unnecessary language, reorganization of content, and updates to reflect current practices.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8625C. Two public hearings were held on February 5, 2025 and February 6, 2025.

Changes from NOIA: There were two attendees at the public hearings but no comments were provided. No changes were made. The Final rule is identical to the NOIA.

Effective Date of Final Rule: June 18, 2025

Tara Naber, Environmental Engineer Senior
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 44 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 44, “Drinking Water State Revolving Fund,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3) and 455B.299.

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.291 through 455B.299 and the Safe Drinking Water Act (SDWA) as amended (42 U.S.C. §300f et seq.).

Purpose and Summary

New Chapter 44 establishes a program for the joint administration of Iowa’s Drinking Water State Revolving Fund (DWSRF). The DWSRF provides financial assistance through below market rate loans to eligible public water supply systems for the design and construction of drinking water facilities to ensure public health and for the provision of safe and adequate drinking water pursuant to the SDWA. Iowa has implemented a DWSRF program since 1998. This chapter was adopted consistent with Executive Order 10.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8625C**.

Two public hearings were held. The first public hearing was held on February 5, 2025 from 9:00 AM to 10:00 AM virtually via Zoom. The second public hearing was held on February 6, 2025 from 10:00 AM to 11:00 AM virtually via Zoom.

Two people attended the first public hearing, and neither provided public comment. There were no members of the public in attendance for the second public hearing. Additionally, no public comments were received during the public comment period.

This final rule is identical to the Notice of Intended Action.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs was found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 44 and adopt the following **new** chapter in lieu thereof:

CHAPTER 44

DRINKING WATER STATE REVOLVING FUND

567—44.1(455B) Statutory authority. The authority for the Iowa department of natural resources (department) to administer the drinking water state revolving fund (DWSRF) is provided by Iowa Code sections 455B.291 through 455B.299.

567—44.2(455B) Scope of title. The department and the Iowa Finance Authority (authority) are jointly designated to administer the DWSRF loan program to assist in the financing of infrastructure projects pursuant to the Safe Drinking Water Act (SDWA). The director will coordinate with the authority under the terms of an interagency agreement entered into pursuant to Iowa Code chapter 28E.

567—44.3(455B) Purpose.

44.3(1) The DWSRF provides financial assistance to eligible public water supply systems (PWS) for the design and construction of facilities to ensure public health and the provision of safe and adequate drinking water.

44.3(2) The EPA provides capitalization grants for this program to the department. Financial assistance projects must be in conformance with the requirements of the Public Health Service Act (42 U.S.C. 300f et seq.), United States Code, Title XIV, Section 1452, Part E, and must comply with this chapter to be eligible for a DWSRF loan.

44.3(3) The department establishes priorities for the use of the DWSRF and publishes them in its intended use plan (IUP). The IUP will identify all proposed uses of set-asides and available loan funds. All potentially funded projects must be approved by the department and the environmental protection commission (EPC).

567—44.4(455B) Definitions. Definitions and abbreviations provided in 567—Chapter 40 apply to this chapter.

567—44.5(455B) Set-asides. The DWSRF may use a portion of the capitalization grant funds for set-asides, in accordance with 40 CFR §35.3535. The SDWA authorizes set-aside funds to enable states to implement specific SDWA requirements. The amount and use of set-aside money is set each year in the IUP pursuant to rule 567—44.9(455B) and may be adjusted from year to year based on available funds and priorities as outlined in the IUP.

567—44.6(455B) Eligibility.

44.6(1) *Eligible systems.* The following systems are eligible to receive funds from the DWSRF for improvements as listed and defined in the SDWA amendments of 1996 (P.L. 104-182, August 6, 1996).

- a.* Community drinking water systems (CWSs).
- b.* Nonprofit nontransient noncommunity drinking water systems (NTNCs).
- c.* Cities and counties that are PWSs or can become viable new PWSs as a result of this project.
- d.* Any other governmental subdivision of the state responsible for a PWS.

44.6(2) *Ineligible systems and activities.* The following systems and activities are ineligible to receive funds from the DWSRF.

- a.* Any applicant that has not adopted and implemented satisfactory department-approved water conservation plans and practices, or demonstrated to the department an ongoing effort to adopt and implement such plans and practices within one calendar year from the date of the loan agreement.
- b.* Any applicant in significant noncompliance with any applicable primary drinking water regulation, unless the project will return the applicant to compliance.

c. Any applicant lacking viability (an applicant whose system lacks technical, financial, and managerial viability to comply with the SDWA and is nonviable or lacks capacity according to the definition in the SDWA), unless the applicant commits to undertake appropriate changes in operations, including ownership, management accounting, rates, maintenance, consolidation, alternative sources of water supply, or other procedures if the director determines that such changes are necessary to demonstrate viability.

d. Projects and activities deemed ineligible for participation in the DWSRF by the EPA's DWSRF regulations (40 CFR Part 35, Subpart L) or program guidance, or by the department.

44.6(3) *Certified operator requirement.* An eligible system must submit to the department the name, certification number, and certification expiration date of the certified operator, pursuant to 567—Chapter 81, in direct responsible charge for the facility operation before receiving a loan. A system without a certified operator shall not receive loan assistance.

567—44.7(455B) Application.

44.7(1) *Application.* Applications for placement on the project priority list shall be accepted by the department on a continuous basis and will be presented to the EPC for approval according to the schedule described in the IUP. Application shall be made on the form provided by the department; the applicant may include additional information in the application. Forms may be obtained from www.iowasrf.com.

44.7(2) *Construction project application requirements.* An applicant seeking financial assistance for construction must include with the application:

- a. A description of the entity's current drinking water supply system, including a discussion of existing and potential problems or failures in the current system and compliance with state and federal criteria;
- b. A description of the type of project for which financial assistance is being requested;
- c. An estimate of the population and the number of households to be served;

- d.* A completed Self-Assessment Manual for Iowa Water System Viability;
- e.* A description of the basis for project design;
- f.* A map showing the geographical area that the project is expected to serve;
- g.* A cost estimate for the selected project;
- h.* The amount of financial assistance being requested;
- i.* A proposed project construction schedule; and
- j.* A preliminary engineering report.

44.7(3) *Preliminary engineering report requirements.* To be eligible for placement on the project priority list for a construction loan, a system must have a preliminary engineering report of potential system needs (also known as a “planning” study) approved by the department, and must submit to the director a written application for placement on the list.

567—44.8(455B) Project point ranking system (project priority list).

44.8(1) *Project priority list.* The director shall develop and maintain a project priority list of PWSs that have requested financial assistance through the DWSRF program to address either a new or an upgraded drinking water system, including individual subcomponents. The term “public water system projects” may also include separate segments or phases of a segmented or phased project. Projects will continue to be eligible for loan funding when funded for the first year of a multiyear project effort.

44.8(2) *Project priority list ranking criteria.*

a. A construction project’s priority points shall be the total number of points assigned by the department pursuant to the scoring system delineated in 44.8(3). All projects shall be listed in descending order on the published project priority list according to the number of total priority points assigned each project.

b. When two or more projects have the same priority point total, the project sponsored by a system in the process of consolidation shall receive the higher priority. A private system in

the process of forming and becoming a PWS shall have the next highest priority, and the entity with the smallest served population shall receive the next highest priority.

c. The most current official census population shall be used for all municipalities that serve only the population within their incorporated boundaries and that apply for these loan funds. For all other municipalities and other CWSs, and for NTNCs, population will be counted based on either the actual population, verifiable by the department, or population as calculated by multiplying by an occupancy factor of 2.5 persons per service connection. New systems will be counted based on census data, an occupancy factor of 2.5 persons per service connection, an occupancy factor of 2.5 persons per identifiable occupied building, or other means acceptable to the department.

d. Funding shall be offered to the projects with highest rank on the project priority list, subject to the project's readiness to proceed, and shall proceed from the highest project downward, subject to availability of funds.

e. The published project priority list shall be included in the department's IUP pursuant to 567—44.9(455B).

f. Projects involving a multiyear, phased effort may carry over their original priority point total from the previous year's application, provided that the project owner reapplies at each stage.

44.8(3) *Project priority list scoring criteria.* Eligible public drinking water supply projects shall be scored pursuant to the following priority point scoring system.

IOWA DWSRF PROJECT SCORING SYSTEM

(Multiple attributes within a lettered subcategory are not additive, but points are additive from other subcategories; consolidation/restructuring is an approved option to correct violations or “improve” treatment.)

Scoring Criterion	Points
A. Human Health Risk-related Criteria (maximum of 60 points)	
1. Correction of acute MCL or Tier I TT violation as defined in <u>567—paragraph 42.1(2)“a”</u> (fecal coliform, nitrate, nitrite, chlorine dioxide, turbidity, CT corrective measures, and Giardia), or resolution of a health-based related BCA	60
2. Correction of nonacute MCL violation (IOCs excluding acute contaminants, radionuclides, SOCs, VOCs)	50
3. Correction of an expected MCL or TT violation (acute or nonacute)	45
4. Correction of Tier II TT violation as defined in <u>567—paragraph 42.1(3)“a”</u> (Pb/Cu corrective measures, disinfection byproduct precursor removal)	40
5. Mitigation of an imminent threat from groundwater contamination (from a UST site, CERCLA site, or uncontrolled site)	35
6. Connection of individual residences to PWS to eliminate use of contaminated individual private wells (bacterial, nitrate, radionuclide, or IOC/VOC/SOC well contamination all eligible)	35
7. Replacement of asbestos cement pipe (replace at least 200 feet of pipe)	15
B. Infrastructure and Engineering-related Improvement Criteria (maximum of 35 points)	

1. Development of system redundancy and additional source to meet peak day demand with largest well or intake out of service; plant process rehabilitation (to ensure redundancy of treatment units to protect against acute or chronic MCL with system's largest treatment unit out of service); water storage improvements (reliability enhancement to increase effective storage to Average Daily Demand, including either at-ground or elevated storage); pumping improvements (meeting hydraulic and Ten-State Standard requirements for Average Daily Demand); or resolution of an infrastructure-related BCA	35
2. Water systems over capacity expansion. Points are allowable only when the system is operating at 85% or more of system design capacity. Source, plant, or distribution system improvements for system expansion are all eligible under this category.	30
3. Pressure and other distribution system improvements, including pump upgrades, pipe looping, valves, fittings, line replacement, hydrants, pumping stations, and water meters	25
4. Construction of resiliency projects to mitigate expected reduction or degradation of source and/or finished water quality or quantity caused by disaster events including but not limited to floods, droughts, ice storms, tornadoes, and cyberattacks	20
5. Treatment plant improvements, excluding operation and maintenance costs	15
6. Provision of emergency power/emergency pumping capacity including purchase of diesel generators or installation of automatic switching systems	15
7. Security improvements (fencing, lighting, video surveillance, locks, access control)	10

C. Affordability Criteria (maximum of 15 points)	
1. System meets the state DWSRF program's Disadvantaged Community (DAC) criteria as defined in the IUP	15
D. Special Category Improvements (maximum of 15 points)	
1. Wellhead or source water protection plan development or implementation meeting department standards, including loans for land or easement acquisition	15
2. Water conservation measures/conservation plan preparation, adoption, and enforcement	5
E. Department Adjustment Factor for Population	
1. (Project Serves) Population less than 10,000	10
TOTAL MAXIMUM POINTS	135

567—44.9(455B) Intended use plan (IUP).

44.9(1) *Development.* The director shall prepare an IUP at least annually and on a quarterly basis as needed. The IUP will be subject to a public hearing and approved by the commission and EPA.

44.9(2) *Contents.* The IUP will identify the anticipated uses of loan funds and will include:

- a.* The state project priority list (defined in rule 567—44.8(455B)) that includes all projects that are eligible for DWSRF loans. The list will comply with 40 CFR §35.3555;
- b.* Discussion of the long-term and short-term DWSRF goals;
- c.* Information on the types of activities to be supported by the DWSRF, including requests for planning and design loans and any proposed activities eligible for assistance under set-aside authority of the SDWA;
- d.* The method by which the IUP may be amended; and

e. Assurances on how the state intends to meet environmental review requirements of the SDWA.

44.9(3) *Eligibility.* The department will consider the following in developing the list of eligible recipients for inclusion in the IUP:

a. Whether a project will be ready to proceed on a schedule consistent with time requirements for outlay of funds; and

b. Whether the project addresses the need upon which the system's priority is based.

567—44.10(455B) Department review and approval of projects.

44.10(1) *Project initiation conference.* The department may require a project initiation meeting with an applicant or the applicants' representative.

44.10(2) *Required project information.*

a. An applicant seeking financial assistance from the DWSRF for a construction project must provide the following information to the director for review and approval:

(1) A complete construction permit application pursuant to 567—Chapters 41 and 43, including plans and specifications, consistent with the IUP and the approved preliminary engineering report submitted pursuant to 44.7(3);

(2) A complete description of the planned project, including the construction requirements necessary to complete the project as proposed;

(3) The latest engineering cost estimate for the project; and

(4) A demonstration of the applicant's ability to provide the necessary legal, institutional, managerial, and financial capability to complete the project.

b. Those portions of projects not meeting eligibility requirements may be excluded from the funded project, but included in the submitted plans and specifications if the applicant chooses to keep the loan-ineligible part of the project as part of the overall system improvement. Ineligible portions of projects include but are not limited to dams, water rights,

monitoring costs, operation and maintenance expenses, projects designed primarily in anticipation of speculative growth, and projects needed primarily for fire protection.

44.10(3) *Department review.* Departmental review requirements shall consist of the following:

a. Upon review and approval of construction projects submitted as required under 567—44.7(455B) and the plans and specifications as required under 44.10(2), and following a determination that the project meets the applicable requirements of the SDWA, federal regulations, Iowa statutes, and relevant portions of this chapter, the director shall approve the project in writing.

b. If there is an alteration (change order) to a project after the director approves the project, the eligible applicant must request, in writing, an amended department approval. The director shall review the request and proposed project alteration (change order) and, upon a determination that the project meets the applicable SDWA requirements, federal regulations, the August 7, 2000, DWSRF: Interim Final Rule (40 CFR Part 35, Subpart L), program guidance, Iowa statutes, and relevant portions of this chapter, the director shall approve the project as amended.

c. If the project is not approved, the director shall notify the applicant in writing of the reason for disapproval.

567—44.11(455B) General administrative requirements.

44.11(1) *Allowable costs.* Allowable costs shall be limited to those costs deemed necessary, reasonable, and directly related to the efficient completion of the project. The director will determine project costs eligible for state assistance in accordance with rule 567—44.6(455B). Land purchase, easement, or rights-of-way costs are ineligible, with the exception of land that is integral to a project needed to meet or maintain public health protection and that is needed to locate eligible treatment or distribution works. Source water

protection easements are considered to be integral to a project. The acquisition of land or easements has to be from a willing seller. In addition to costs identified in this chapter, unallowable costs include the following:

- a.* Costs of service lines, except lead-containing service lines and connectors;
- b.* Costs of in-house plumbing;
- c.* Administrative costs of the loan recipient; and
- d.* Costs of vehicles and tools.

44.11(2) *Audits.* The recipient shall provide access at all times for the department, the authority, the state auditor, and the Office of the Inspector General (OIG) at EPA to all project records and documents for inspection and audit purposes for a period of three years from the date of the final loan payment. The same access to the project site(s) shall be provided for inspection purposes.

44.11(3) *Cross-cutters.* Other federal and state statutes and programs, including federal “cross-cutters,” will be applicable to DWSRF projects.

44.11(4) *Additional loan amount.* If eligible costs exceed the loan amount, the recipient may request an increase. The director in coordination with the authority will evaluate the request by considering available money in the fund as well as compliance with other state and federal requirements.

567—44.12(455B) Construction phase and postconstruction phase requirements.

44.12(1) *Final inspection.* A final inspection of the project may be performed by the director to verify that construction is complete (except for weather-related items) and conforms with the approved plans and specifications and all approved change orders.

44.12(2) *Adequate project performance.* The department shall undertake measures to discern adequate project performance as follows:

a. The loan recipient must certify to the director that the project is operating as planned and designed using a form approved by the department.

b. If the loan recipient is unable to certify that the project is operating as planned and designed, the recipient must submit a corrective action report to the director for review and approval. An acceptable corrective action report must contain an analysis of the project's failure to operate as designed; a discussion of the nature, scope, and cost of the action needed to correct the failure; and a schedule for completing the corrective work.

567—44.13(455B) Sanctions. Failure of a project to conform to approved plans and specifications or failure of a loan recipient to comply with the requirements of 567—Chapter 40 through 567—Chapter 44 constitutes grounds for the withholding of loan disbursements. The loan recipient is then responsible for ensuring that the identified problem is rectified such that disbursements may be resumed. Once an agreement for correcting the conditions that led to the withholding of funds is reached between the department and the loan recipient, the retained funds shall be released according to the provisions of the agreement.

567—44.14(455B) Disputes. A person or entity that disagrees with the project rankings, department decisions, or the withholding of project funding pursuant to this chapter may request a formal review of the action. A person or entity must submit a review request in writing to the director within 45 days of the action date. A decision by the director in a formal review case may be further appealed to the EPC.

These rules are intended to implement Iowa Code sections 455B.291 through 455B.299.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item

18. Chapter 50, “Withdrawal, Diversion and Storage of Water: Water Rights Allocation”; Chapter 51, “Water Permit or Registration—When Required”; and Chapter 52, “Criteria and Conditions for Authorizing Withdrawal, Diversion and Storage of Water” - Final Rules

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 50 and to rescind and reserve Chapters 51 and 52. This rulemaking is the result of the Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 50 establishes a water use and allocation program as authorized by Iowa law. This chapter will ensure ground and surface waters of the state are put to beneficial use, prevent waste or unreasonable use of water, prevent unreasonable methods of water use, and conserve and protect the state’s water resources in the interest of the people. Additionally, new Chapter 50 clarifies when a water use permit or registration is required for the withdrawal, diversion, and use of water, and establishes criteria for issuance of water permits, permit conditions, and conditions under which the Department may modify, terminate, or suspend permits. Finally, new Chapter 50 includes special criteria applicable to particular types of water uses, such as irrigation and criteria applicable to particular types of sources of water such as surface waters and groundwater sources. Former Chapters 50, 51, and 52 were reviewed consistent with Executive Order 10; consequently, Chapters 51 and 52 are rescinded and merged into the new Chapter 50. The content of these chapters was closely related, and efficiencies in rule language are produced from this consolidation.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8618C. Two public hearings were held on February 3 and February 4, 2025.

Changes from NOIA: Four people attended the first public hearing and one person attended the second. Four public comments were received for Chapter 50. The definitions of “consumptive use” and “irrigation use” were modified in response to comments. Similarly, subrule 50.6(2)’s provisions on irrigation permits was refined to include both conservation plans and conservation systems and to recognize the NRCS compliance-based soil loss limits. No other changes to the NOIA have been made.

Effective Date of Final Rule: June 18, 2025

CHAD FIELDS, GEOLOGIST III
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapters 50-52 – Final rules

ENVIRONMENTAL PROTECTION COMMISSION [567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 50, “Scope of Division—Definitions—Forms—Rules of Practice,” and adopts a new Chapter 50, “Water Use, Withdrawals, and Diversions,” and rescinds and reserves Chapter 51, “Water Permit or Registration—When Required,” and Chapter 52, “Criteria and Conditions for Authorizing Withdrawal, Diversion and Storage of Water,” Iowa Administrative Code.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(11), 455B.105(3), 455B.263(8) and 455B.265(4).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 17A.3, 455B.105, 455B.171, 455B.190, 455B.264, 455B.268 and 455B.278 and chapter 460.

Purpose and Summary

New Chapter 50 establishes a water use and allocation program as authorized by Iowa law. This chapter will ensure ground and surface waters of the state are put to beneficial use, prevent waste or unreasonable use of water, prevent unreasonable methods of water use, and conserve and protect the state’s water resources in the interest of the people. Additionally, Chapter 50 clarifies when a water use permit or registration is required for the withdrawal, diversion, and use of water, and establishes criteria for issuance of water permits, permit conditions, and conditions under which the Department of Natural Resources (Department) may modify, terminate, or suspend permits. Finally, Chapter 50 includes special criteria applicable to particular types of water uses, such as irrigation and criteria applicable to particular types of sources of water such as surface waters and groundwater sources.

Former Chapters 50, 51, and 52 were reviewed consistent with Executive Order 10; consequently, Chapters 51 and 52 are rescinded and merged into new Chapter 50. The content of these chapters was closely related, and efficiencies in rule language are produced from this consolidation.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8618C**.

Two public hearings were held. The first public hearing was held on February 3, 2025 from 2:00 PM to 3:00 PM virtually via Zoom. The second public hearing was held on February 4, 2025 from 10:00 AM to 11:00 AM virtually via Zoom.

Four people attended the first public hearing and one person attended the second. Four public comments were received for Chapter 50. The definitions of “consumptive use” and “irrigation use” were modified in response to comments. Similarly, subrule 50.6(2)’s provisions on irrigation permits was refined to include both conservation plans and conservation systems and to recognize the NRCS compliance-based soil loss limits. No other changes from the NOIA have been made.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs was found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 50 and adopt the following **new** chapter in lieu thereof:

CHAPTER 50

WATER USE, WITHDRAWALS, AND DIVERSIONS

567—50.1(455B) Scope of division. The department has jurisdiction over the surface and groundwater of the state to establish and administer a comprehensive program to ensure that the water resources of the state be put to beneficial use to the fullest extent possible, that the waste or unreasonable use or unreasonable methods of use of water be prevented, and that the conservation and protection of water resources be required with the view to their reasonable and beneficial use in the interest of the people.

Any person who proposes to pump or divert by gravity more than 25,000 gallons of water during a period of 24 hours or less from any source of groundwater or surface water, including streams bordering the state; impound surface water; divert surface runoff into a well, sinkhole

or excavation; or inject water or any material into a well has a duty to review the thresholds in this chapter and contact the department to resolve any doubt concerning whether a permit is required.

Chapter 50 explains when approval is required for withdrawal, diversion, or storage of water and the criteria for permitting the withdrawal or diversion of water. Chapter 53 sets forth the procedure for designating certain ground and surface water sources as protected sources and explains special criteria and conditions that may be applicable to those sources. Chapter 54 describes procedures and criteria for determining compensation to owners of nonregulated wells for well interference caused by permitted uses.

567—50.2(455B) Definitions. In addition to the definitions, references, and abbreviations in 567—Chapter 40, the following definitions apply to this title unless otherwise specified in the particular chapter of this title:

“Administrative resolution” means the settlement of well interference conflicts by the department according to established rules and procedures.

“Aquifer” means a water-bearing geological formation of sufficient volume, porosity, and permeability to be capable of yielding a usable quantity of water to a well or spring.

“Certified well contractor” means a well contractor who has successfully passed an examination prescribed by the department to determine the applicant’s qualifications to perform well drilling or pump services or both pursuant to 567—Chapter 82.

“Community public water supply” or *“CWS”* means a system for the provision to the public of piped water for domestic use that has at least 15 service connections used by year-round residents or serves at least 25 year-round residents.

“Confined aquifer” means an aquifer that contains water under pressure and bounded above and below by confining layers. In a well penetrating a confined aquifer, pressure will cause water to rise above the top of the aquifer.

“Confining layer” means a body of low permeable geologic material that is located above or below one or more aquifers.

“Conflict” means a dispute between a nonregulated or regulated well owner and a permitted water user regarding the liability of the permitted user for well interference damages to the nonregulated well.

“Consumptive use” means any use of water that involves substantial evaporation, transpiration, incorporation of water into a product, or removal of water from a source without return to the source.

“Domestic use” means a use of water for human consumption and sanitation and public safety (fire protection).

“Drainage system” means tile lines, laterals, surface inlets, or other improvements that are constructed to facilitate land drainage.

“Drawdown” means the decrease in groundwater level due to well pumping.

“General crop” means commercial field corn, hay, soybeans, oats, grain sorghum, or wheat.

“Industrial use” means a use of water by manufacturing, processing, commercial, and other industrial facilities to provide a product or a service, excluding domestic use, irrigation use, livestock use, quarry use, power generation use, and recreational and aesthetic use.

“Interior stream” means rivers, creeks, or other watercourses located within the interior of Iowa, not forming the borders of the state.

“Irrigation use” means a use of water that is artificially applied to land to aid growth of general crops and specialty crops.

“Livestock use” means a use of water in the production of animals, such as for drinking, sanitation, and cooling.

“Nonregulated well” means a well used to supply water for a nonregulated use.

“Permitted use” means a use of water in excess of 25,000 gallons per day that requires a water use permit pursuant to these rules and Iowa Code chapter 455B, subchapter III, part 4.

“Pesticide” means (1) any substance or mixture of substances intended to prevent, destroy, repel, or mitigate, directly or indirectly, any insects, rodents, nematodes, fungi, weeds, or other forms of plant or animal life or viruses, except viruses on or in living persons, which the secretary of agriculture shall declare to be a pest; and (2) any substance intended for use as a plant growth regulator, defoliant, or desiccant.

“Power generation use” means a use of water incidental to the generation of electric power for distribution and sale to the public, including process water and water for cooling purposes.

“Protected flow” means the *“established average minimum flow”* defined in Iowa Code section 455B.261.

“Protected source” means a surface water or groundwater source recognized by rule as needing special protection to ensure its long-term availability, in terms of either quality, quantity, or both, to preserve the public health and welfare.

“Pump test” means a department-approved test for pumping from a well at controlled rate(s) for a specified duration while water levels are accurately measured at given frequencies in the pumping well and observation well(s).

“Quarry use” means a use of water for the extraction of stone, sand, minerals, or other geologic materials from the earth.

“Recreational and aesthetic use” means a use of water that is not essential for the preservation of life, the general welfare, or the state’s economic base. Examples include but are not limited to flooding of wildlife areas, filling of pools and fountains, nonessential cooling, car washing, street cleaning, washing of other exterior surfaces, amusement park-type water rides, turf watering, and watering of landscape plantings.

“Seven-day, 1-in-10 year low flow” or *“7Q10”* means the minimum average flow expected to occur during a period of seven consecutive days that has an average recurrence interval of once in ten years.

“Specialty crop” means all other crops not listed as a general crop.

“Stream” means a watercourse other than a lake as defined in Iowa Code section 455B.261.

“Stream bordering the state” means those reaches of the Missouri, Mississippi, Des Moines, and Big Sioux rivers that mark Iowa’s boundaries.

“Sufficient water supply” means a nonregulated well that is capable of providing enough water for the nonregulated use.

“Surface water” means water occurring on the surface of the ground.

“Surface water intake” means an artificial opening to a drain tile that drains into an agricultural drainage well, if the artificial opening allows surface water to enter the drain tile without filtration through the soil profile.

“Test pumping” means a controlled aquifer test for verification of well interference.

“Verified well interference” means well interference that has been proven by test pumping or with other substantial evidence to have caused or will cause a nonregulated well to be unable to maintain a sufficient water supply.

“Water use reduction plan” means a plan that establishes numeric water reduction goals on a short-term time frame through either voluntary or mandatory water conservation requirements.

“Well interference” means the lowering of water level in a well caused by the withdrawal of water at another location (usually a nearby well).

567—50.3(17A,455B) Forms.

50.3(1) *Application forms.* The following application forms are currently in use:

Form 16: Application for a New Water Use Permit or to Modify an Existing Water Use Permit. 542-3106.

Form 18: Application for Permit to Store Water for Beneficial Use. 542-3109.

Form 20: Registration of Minor Nonrecurring Use of Water. 542-3112.

Form 542-1470: Water Supply Section Water Use Permit Renewal.

Form 542-1539: Application for Use of an Agricultural Drainage Well.

50.3(2) *Supplementary information forms.* The following forms are used to obtain additional information to supplement applications:

Form 21: Survey of Land Owners and Occupants. 542-3113.

Form 22: Well Inventory Form. 542-3114.

Form 122: Water Well Inspection Report.

50.3(3) *Reporting form.* The following form is for reporting permitted activities:

Form 23: Report of Water Use by all Regulated Users. 542-3115.

567—50.4(17A,455B) When a water use permit is required. Unless otherwise provided herein, a water use permit shall be required for the use, withdrawal, or diversion of more than 25,000 gallons of water per day for any purpose.

50.4(1) *Drainage at construction sites.* A permittee may obtain permit coverage through registration as described in 50.4(4) for a withdrawal of water to lower the water table as necessary at a construction site.

50.4(2) *Pump test.* The department may authorize by registration as described in 50.4(4) test pumping of sources of water to determine the source's adequacy and the effects of water withdrawals on other users and the natural environment. The department may require an applicant to submit the pump test results to the department. No registration for a pump test shall be for a period of more than one year. A registration must be obtained from the

department for any pump test in which more than 25,000 gallons of water will be withdrawn in a 24-hour period.

50.4(3) *Rural water districts.* A water use permit shall be required for withdrawals of water by any rural water district having its own source of water, and such a withdrawal shall be classified as a use by a CWS.

50.4(4) *Permit coverage obtained by registration for minor, nonrecurring uses.* Any use of water that is a minor, nonrecurring use, including but not limited to highway construction and maintenance, charging of lagoons, drilling wells, or hydrostatic testing of pipelines, shall require permit coverage that may be obtained through registration.

a. An applicant may register a minor, nonrecurring water use by submitting the registration form provided by the department. Such registrations shall be for up to one year.

b. After an investigation of any withdrawal allegedly causing material damage, the department shall require prompt, appropriate action for the alleviation of damages. Where agreement cannot be reached on the action necessary for the alleviation of damages, withdrawal of water shall cease immediately upon notification by the department and a water use permit application shall be submitted.

50.4(5) *Research contracts.* Water withdrawals for research purposes by the Iowa Geological Survey through its agents, employees, or contractees may be authorized by registration under 50.4(4) and may be subject to conditions set by the department.

50.4(6) *Excavation and processing of rock and gravel products.* A water use permit is required for withdrawal of more than 25,000 gallons of surface water or groundwater in one day in connection with removal or processing of rock or gravel products. A water use permit is not required for the following:

a. Operation of a hydraulic dredge that returns all water used as a transport medium directly back into the pit from which it is withdrawn by the dredge; and

b. Water withdrawal from a gravel pit or rock quarry sump pit for material washing if the wash water is discharged directly back into the pit from which it is withdrawn.

50.4(7) *Diversion from surface into aquifer.* A water use permit is required for diversion of water or any other material from the surface directly into any aquifer, including diversion by means of an agricultural drainage well. Diversion by tile or ditch into a sinkhole or quarry excavated in carbonate rock is presumed to be a diversion from the surface directly into an aquifer in the absence of convincing evidence to the contrary.

50.4(8) *Cooling/heating systems.* A water use permit to withdraw groundwater for use as a heat exchange media in a heating/cooling system may be granted, allowing such groundwater to be discharged into sanitary or storm sewers when the use is complete. However, a permittee that has such a system shall make a plan and design provisions to the permittee's system to allow the groundwater to be reinjected to the aquifer from which it was originally pumped. The department reserves the right to order such direct return as part of its water conservation plan responsibility described in 50.16(3) and its priority allocation plan responsibility described in rule 567—50.17(455B).

50.4(9) *Drain tile lines.* Water in drain tile lines shall be considered surface water. These rules are intended to implement Iowa Code sections 455B.262, 455B.264 through 455B.274, and 455B.278 and chapter 460.

567—50.5(17A,455B) Water use permit applications.

50.5(1) *Application forms.* Department forms for water use permit applications and modifications are listed in 50.3(1) and are located on the water use program website at www.iowadnr.gov/wateruse.

a. *Application for approval of a new withdrawal or diversion of water.* For withdrawals or diversions of water, a water use permit application shall be submitted to the department by or on behalf of the owner, lessee, easement holder, or option holder of the source and area where

the water is to be withdrawn, diverted, and used. An application shall be accompanied by a map portraying the withdrawal or diversion points and the land area on which water is to be used.

b. Application for modification or renewal of a water use permit. A request for renewal of a water use permit shall be submitted to the department. A request to modify an existing water use permit shall be submitted to the department and must include an explanation of the necessity for the modification.

50.5(2) Fees.

a. Water use permit application fees. A new water use permit application, an existing water use permit modification request, or a registration of a minor nonrecurring use of water must be accompanied by the fee listed in the table below. These fees are nonrefundable and nontransferable. For any single application, if more than one fee applies, only the higher fee is required.

Water Use Permit Application Description	Form	Fee, in dollars
(1) To apply for a new permit to withdraw or divert water	16 (542-3106)	\$350
(2) To renew an existing permit	542-1470	\$0
(3) To modify an existing permit to either add a new source or increase the amount or rate of water withdrawn or diverted from a source or sources	16 (542-3106)	\$350
(4) To modify the conditions of an existing permit that are not described in Item 3 of this table	16 (542-3106)	\$0
(5) To apply for an ASR permit or a protected source designation	N/A	\$700
(6) To register a minor nonrecurring use of water	20 (542-3112)	\$75

b. Annual water use permit fee. In addition to the application fee, there is an annual permit fee. Each water use permittee shall pay the same annual fee. The fee is not prorated and is

nonrefundable. The annual water use permit fee is due December 1 of each year. The department will provide an annual fee notice to each permittee at least 60 days prior to the fee due date. An additional fee of \$100 will be imposed if the fee is not received by December 1. Failure to remit the fee by January 1 may result in permit termination.

(1) The annual fee shall be based on the costs for administering the water use permitting program for the previous calendar years and on the anticipated expenses for succeeding fiscal years. The department will review the annual permit fee each year and adjust the fee as necessary to cover all reasonable costs required to develop and administer the water use permitting program. The department shall request commission approval of the amount of the annual fee no later than September 30 of each year.

(2) Permittees that have paid an application fee after December 1, but prior to November 30, will not be required to pay an annual fee until December 1 of the following year. If an applicant remits an annual fee for the 12-month period beginning December 1 and then later submits an application fee for a permit modification, the applicant will be refunded the lesser fee.

50.5(3) *Required supporting information.* A water use permit application shall not be considered complete until the fee specified in this rule and all supporting information requested under rule 567—50.6(17A,455B) has been submitted by the applicant or the applicant's agent.

50.5(4) *Initial screening of water use permit applications.*

a. General procedure. Upon receipt, each application shall be evaluated by the department to determine whether adequate information is available to review the project. The department shall then advise the applicant of additional information required for project review.

b. Application to withdraw groundwater. Evaluation of the potential effects of a proposed withdrawal of groundwater requires review of available hydrogeological information. The

department may require additional supporting hydrogeological information, which the applicant is responsible for providing.

567—50.6(17A,455B) Supporting information for water use permit applications. As described in this rule, applicants shall submit supporting information reasonably required to assist the department in conducting the investigation required by Iowa Code sections 455B.264 and 455B.281 and in determining whether permit issuance would be consistent with the beneficial use policies and principles in Iowa Code section 455B.262. The department may require additional information relative to applications for the following types of permits.

50.6(1) *Groundwater withdrawal permit.*

a. Identification of source and effects of pumping. Applicants for a water use permit to withdraw groundwater shall submit information to identify the well location(s) and the aquifer(s) from which water withdrawals are proposed, predict the effects of pumping with a reasonable degree of confidence, and determine any permit conditions for well interference pursuant to 567—Chapter 54. In areas of uncertainty, to determine the availability of a water source of adequate quantity and quality and to predict the effects of pumping, the applicants shall perform test drilling, yield testing, and pump testing that includes measurements in one or more observation wells conducted with prior approval and in a manner acceptable to the department. Applicants shall perform each of these exploratory operations to the extent necessary for the department to determine whether a water use permit should be issued and to identify conditions which should be imposed in a permit. The following requirements apply to exploratory drilling, yield testing, and pump testing.

(1) Test drilling. Where test drilling is needed for geological information relevant to the application, an applicant shall employ a driller to collect, bag, and properly label cutting samples at each five-foot interval and at each apparent change in geological formation from a test hole or production well hole at least the approximate depth of the proposed production

well. The cutting samples shall be saved for collection in sample bags provided by the Iowa Geological Survey (IGS). The samples shall be submitted to the IGS and be accompanied by a driller's log showing the well's location and total depth and a description of the materials encountered at successive intervals.

(2) Yield testing. An applicant shall construct a well and test pump it for yield to the extent necessary to determine whether water is available at the applicant's proposed rate of withdrawal from the proposed source. A written registration from the department is required before any yield test in which more than 25,000 gallons will be withdrawn in a period of 24 hours or less, as provided in 50.4(4).

(3) Pump testing. An applicant shall conduct a controlled aquifer pump test with supervision by a certified well contractor, licensed professional engineer, or other department designee as a condition of obtaining a water use permit, if the department finds an aquifer test necessary to determine the effects that the proposed withdrawal has on other nearby water users. An applicant may be required to construct, develop, and maintain adequate observation wells for use in an aquifer pump test, subsequent water level measurements, or water quality monitoring. An applicant shall obtain a registration for an aquifer pump test as provided in 50.4(4).

b. Cooperation in obtaining well information. An applicant requesting a permit authorizing groundwater withdrawals from a well or reservoir may be required to assist the department in conducting an inventory of nearby wells within a designated radius of the proposed site. The need for an inventory and the appropriate radius will be determined after considering the characteristics of the aquifer that is proposed as a source of water and the proposed withdrawals. The department shall provide the applicant a map specifying the proposed inventory area, forms specifying the information to be gathered in the inventory, and a description of regulated uses within the inventory area. The applicant shall make a good-faith

effort to assist the department in obtaining information from public records to identify landowners and occupants and from drilling contractors or pump installers identified by a landowner or occupant responding to the inventory.

50.6(2) *Irrigation permit.* An applicant proposing to irrigate crops on land shall submit a conservation plan or describe the conservation system that does not exceed the NRCS compliance-based soil loss limits for the land where crop irrigation is proposed, if the land includes soils more erodible than Capability Subclass IIe as defined by the NRCS. The application shall include a written explanation of how operation of the proposed irrigation system will be compatible with the plan or system.

50.6(3) *Quarry permit.* Iowa Code section 455B.268 requires that a water use permit be obtained before diverting water or material from the surface directly into any underground watercourse or basin.

50.6(4) *Diversion of water into an aquifer not related to the use of an agricultural drainage well.* An applicant for a water use permit to divert water or any other material from the surface into an aquifer not related to the use of an agricultural drainage well shall submit information showing that the requested diversion will not alter the quality of the aquifer.

50.6(5) *Water withdrawal from a protected water source.* An applicant for a water use permit to withdraw water from a protected water source designated in 567—Chapter 53 may be required to provide specific information to support the application as required by rule 567—53.3(455B).

567—50.7(17A,455B) Review of complete water use permit applications.

50.7(1) *Summary report.* Before a decision is made on a water use permit application, the department shall prepare a summary report stating whether the withdrawal, diversion, or use of water described in the application conforms to relevant criteria. The report shall identify the information used to determine the potential for a proposed use of water to adversely affect

other water users. For an application to withdraw groundwater, the report shall describe the anticipated effects on water levels resulting from the proposed use, indicate if verified well interference has been found, and provide options for resolving any verified well interference in accordance with 567—Chapter 54.

50.7(2) *Public notice (PN).*

a. New water use permits and permit modifications. Prior to issuing a permit to withdraw, divert, or inject water, the department shall publish a PN of recommendation to issue a water use permit. A PN shall summarize the application and the recommendations in the summary report and allow the public 20 days to request a copy of the summary report and submit comments on the report. The department may extend the comment period upon request for good cause. PNs may be published in a newspaper circulated in the locality of the proposed water source, or the department may use other publication methods to ensure adequate notice to the affected public. A PN shall be sent to any person who has requested a copy of the notice concerning the particular water use under consideration.

b. Water use permit renewals. The PN provisions of 50.7(2) “a” shall not apply to water use permit renewals.

50.7(3) *Notice to the applicant of criteria violation.* If the application review determines that the proposed withdrawal, diversion, or use of water violates one or more criteria and the application should therefore be disapproved, or approved only subject to special conditions to which the applicant has not agreed, the department shall notify the applicant and, when practical, suggest appropriate project modifications. The department shall offer the applicant an opportunity to submit comments before a decision is made.

567—50.8(17A,455B) Decision by the department.

50.8(1) *Form of decision.* The decision by the department shall be either approval or denial of the water use permit application. Each water use permit shall include appropriate

standard and special conditions consistent with Iowa Code sections 455B.261 through 455B.274 and 455B.281 and 567—Chapters 50, 53 and 54. The decision shall incorporate by reference or attachment the summary report described in 50.7(1). Each decision shall include the following:

- a. Determinations as to whether the project satisfies all relevant criteria not addressed in the attached summary report;
- b. An explanation of the purpose for imposing each special condition; and
- c. An explanation of consideration given to all comments submitted pursuant to 50.7(2) unless the comments are adequately addressed in the attached summary report.

50.8(2) *Notice of decision.* Copies of the decision shall be mailed to the applicant, any person who commented pursuant to 50.7(2), and any other person who has requested a copy of the decision. The decision shall be sent by certified mail. A decision becomes the final decision of the department unless a timely notice of appeal is filed in accordance with 50.8(3).

50.8(3) *Appeal of decision.* Any person aggrieved by a decision issued under this rule may file a notice of appeal with the director. The notice of appeal must be filed within 30 days following the certified mailing date of the decision unless the appellant shows good cause for failure to receive actual notice and file within the allowed time. The form of the notice of appeal and appeal procedures are governed by 567—Chapter 7. The department shall mail a copy of the notice of appeal to each person who commented on the application. If the appeal is from denial of a permit and a notice of recommendation to grant a permit was not published, the department shall publish the notice of commencement of a contested case and provide an opportunity for interested people to seek intervention in the contested case.

These rules are intended to implement Iowa Code sections 17A.3, 455B.105, 455B.171, 455B.262, 455B.264 through 455B.274, 455B.278, and 455B.281.

567—50.9(455B) Conditions on permitted water uses. This rule includes permit restrictions that apply to various types of permitted water uses. A permitted use may be subject to additional restrictions related to its potential effects on surface or groundwater. Procedures for determining conditions imposed due to well interference are found in 567—Chapter 54.

50.9(1) *Irrigation water use permits.*

a. Authorized irrigation season. Permits shall authorize irrigation of any general crop from April 1 to September 30 and any specialty crop from April 1 to October 31 unless the department finds that a different period is justified.

b. Authorized annual amount. Permits shall authorize withdrawals equivalent to one acre-foot per acre for a general crop and two acre-feet per acre for a specialty crop unless the department finds that a different amount is justified. Notwithstanding the general criteria in this paragraph, permits for irrigation of general crops from the alluvial aquifers of the Missouri and Mississippi Rivers shall authorize withdrawals of up to 1.5 acre-feet per acre if requested by the applicant unless the department finds that a different amount is justified.

c. Conservation plan for erosion control. Where 50.6(2) requires the submission of a soil conservation plan, an irrigation water use permit shall make authorization of irrigation contingent upon compliance with the soil conservation plan.

d. Irrigation scheduling. The department may require that irrigation of a general crop be scheduled according to a department-recommended method to minimize the potential for waste of water or by an equivalent method selected by the permittee and approved by the department.

e. Irrigation system check valve. Each irrigation water use permit shall require the installation of an adequate check valve and frequent inspections of proper valve function to prevent contaminants from back-siphoning into the water source before a fertilizer, pesticide, herbicide, or other additive is introduced into the irrigation system.

50.9(2) The amount of water authorized for industrial use or power generation use shall be consistent with industry-wide usage for the same or similar purposes and types of facilities and shall provide for growth where need is demonstrated by the applicant.

50.9(3) The amount of water authorized for use by a CWS shall not exceed 200 gallons per day per capita, except that additional water may be authorized for growth and industrial use where need is demonstrated by the applicant.

50.9(4) *Recreational and aesthetic water use permits.*

a. Authorized amount. The amount of water authorized for recreational and aesthetic uses shall be determined on a case-by-case basis.

b. Watering system backflow-prevention valve. Water use permits authorizing the use of water for turf or landscape plantings shall require the installation of an adequate check valve and annual inspections of proper valve function to prevent contaminants from back-siphoning into the water source before a fertilizer, pesticide, herbicide, or other additive is introduced into the irrigation system.

This rule is intended to implement Iowa Code section 455B.265.

567—50.10(455B) Conditions on withdrawals from streams. Water withdrawals from streams shall be subject to the following conditions:

50.10(1) *Protected flow restriction.* Except as provided in 50.10(2), withdrawals for consumptive uses, with the exception of CWSs, shall cease when the streamflow is below the protected flow designated in 50.15(3). When the flow of a stream, or portion thereof designated by the department, is below a flow equal to the protected flow plus the summation of all permitted consumptive withdrawals by permittees whose permits provide for maintenance of a protected flow in such stream or portion thereof, the department may, subject to the provisions of 50.10(2), order temporary cessation or rotation of all consumptive withdrawals, with the exception of CWSs, to ensure that the protected flow is preserved.

50.10(2) *Replacement water exemption.* Subrule 50.10(1) shall not apply to withdrawals for consumptive uses from a stream if the permittee discharges replacement water into such stream or tributary thereto at rates sufficient to offset the consumptive withdrawals and the department approves the method and location of discharge.

567—50.11(455B) Conditions on water withdrawals from groundwater sources.

50.11(1) *Withdrawals from unconfined aquifers adjacent to streams.* Water withdrawals from unconfined aquifers adjacent to streams shall be subject to the following conditions:

a. Protected flow restriction. Withdrawals for consumptive uses, with the exception of CWSs, at any point within 1/8 mile (660 feet) of an interior stream shall be considered withdrawals from the stream and shall cease when the stream is below the protected flow designated in rule 567—50.15(455B) except as provided in 50.11(1) “c” to “f.”

b. Seven-day, one-in-ten-year low flow (7Q10) restriction. Withdrawals for consumptive uses, with the exception of CWSs, at any point located between 1/8 mile (660 feet) and ¼ mile (1,320 feet) of a stream, other than a stream bordering the state, shall cease when the streamflow is at or below the 7Q10 as determined at the nearest downstream USGS gage, except as provided in 50.11(1) “c” to “f.”

c. Missouri/Mississippi River-interior stream confluence restriction. Withdrawals for consumptive uses, with the exception of CWSs, from the alluvial aquifers below the floodplains of streams bordering the state at any point within 1/8 mile (660 feet) of any interior stream shall cease when the flow of such interior stream is at or below the 7Q10, except as provided in 50.11(1) “d.”

d. Other conditions. Notwithstanding 50.11(1) “a” to “c,” other conditions may be imposed as necessary to ensure adequate protection of water supplies for ordinary household, livestock, and domestic uses; fish and wildlife use; recreational use; preservation and enhancement of aesthetic values; or other uses of a public nature.

e. Replacement water exemption. 50.11(1)“a” to “c” shall not apply to withdrawals for consumptive uses from an unconfined aquifer, if the permittee discharges replacement water into such stream or tributary thereto at rates sufficient to offset the consumptive withdrawals and the department approves the method and location of discharge.

f. Exemptions from low-flow restrictions. The restrictions of 50.11(1)“a” to “d” may be waived if the applicant or permittee can conclusively demonstrate, by conducting pump testing, that the withdrawal will not reduce the flow of the adjacent stream. The pump testing plan must be approved by the department prior to the testing.

50.11(2) *Withdrawals from the Cambrian-Ordovician (Jordan) aquifer.* Water withdrawals from the Cambrian-Ordovician (Jordan) aquifer, including the St. Peter sandstone formation, the Prairie du Chien group, and the Jordan sandstone formation, shall be subject to the following conditions:

a. Two-hundred-gallon-per-minute (gpm) restriction. New withdrawals of water for irrigation, recreational, or aesthetic uses shall not exceed 200 gpm. Existing permits for irrigation, recreational, and aesthetic uses that authorize withdrawal rates in excess of 200 gpm may be modified or rescinded if the department determines that any well in the vicinity experiences loss of water due to pumping or if the pumping water level is reduced to or below the levels described in 50.11(2)“f”(1) and 50.11(2)“g”(1).

b. Two-thousand-gallon-per-minute (gpm) restriction. New water withdrawals for industrial or power generation uses at a single plant location shall not exceed 2,000 gpm. Existing permits for industrial or power generation use that authorize withdrawal rates in excess of 2,000 gpm may be modified or rescinded if the department determines that any well in the vicinity experiences a loss of water due to pumping or if the pumping water level is reduced to or below the levels described in 50.11(2)“f”(1) and 50.11(2)“g”(1).

c. Limited cooling and geothermal use. No once-through (single pass with disposal to storm sewer or equivalent) cooling water or geothermal usage is allowed. Withdrawals for geothermal purposes are prohibited unless 100 percent of the withdrawn water is reinjected into the aquifer in accordance with department requirements.

d. Jordan aquifer high-capacity permits and wells. Water use permits for the Jordan aquifer shall be issued on a five-year permit cycle. A water use permit for wells expected to pump over 25,000 gallons per day from the Jordan aquifer shall be obtained from the department before any water well construction permit is issued. After a water use permit has been obtained, a county may issue a Jordan aquifer water well construction permit for any nonpublic water supply system unless that well is located in one of the protected-source areas listed in 567—subrules 53.5(2) and 53.5(3). The department may issue a Jordan aquifer water well construction permit for a public water supply system or a well located in the protected source areas listed in 567—subrules 53.5(2) and 53.5(3). All driller's logs for water use wells completed in the Jordan aquifer shall be submitted to the department and the Iowa Geological Survey.

e. Tier 1 Jordan wells. A Jordan water use well is classified as Tier 1 when pumping water levels have not reached the Tier 2 or Tier 3 levels described in 50.11(2)“f”(1) and 50.11(2)“g”(1). Permittees with Tier 1 Jordan wells shall follow standard water use reporting procedures for the Jordan aquifer pursuant to rule 567—50.13(455B).

f. Tier 2 Jordan wells.

(1) A Jordan well is classified as Tier 2 when the pumping water level measured at the well declines over 300 feet below the 1978 Horick and Steinhilber potentiometric surface, or the pumping water level declines over 50 percent from the 1978 Horick and Steinhilber potentiometric surface and the top of the Jordan aquifer, whichever is more conservative.

(2) Permittees with Jordan wells that have reached the Tier 2 level shall develop a site-specific water use reduction plan and submit it to the department for review and approval. The water use reduction plan shall set a defined usage percent reduction target that will minimize Jordan aquifer withdrawals and prevent the decline of the water level from reaching the Tier 3 category pursuant to 50.11(2)“g”(1). If the water use reduction plan is not implemented, the department may reduce the permitted water use allocation, pursue permit enforcement, or rescind the permit.

g. Tier 3 Jordan wells.

(1) A Jordan well is classified as Tier 3 when the pumping water level measured at the well declines over 400 feet below the 1978 Horick and Steinhilber potentiometric surface, or the pumping water level declines over 75 percent from the 1978 Horick and Steinhilber potentiometric surface and the top of the Jordan aquifer, whichever is more conservative.

(2) Permittees with Jordan wells that have reached the Tier 3 level shall develop an aggressive water use reduction plan using an approved predictive model that will lead to recovery of the pumping water level to elevations above Tier 3 levels. The department shall review and approve the plan and model predictions. If water levels continue to decline beyond the Tier 3 level, the department may reduce the permitted water use allocation; pursue permit enforcement, including aspects of the water use reduction plan; or rescind the permit.

h. Waivers. Waivers from these rules will be considered by the department through the procedures found in 561—Chapter 10.

i. Plan resources. Resources for developing water use reduction plans are listed in 50.16(3)“d.”

567—50.12(455B) Duration of water use permits for withdrawal or diversion of water.

50.12(1) General. A water use permit shall remain as an appurtenance of the land described in the permit through the date specified in the permit and any permit extension

unless the permit or its extension is terminated under rule 567—50.14(455B). A water use permit may be renewed if an application is submitted prior to the termination date specified in the permit.

50.12(2) *Withdrawal or diversion of surface water.* Water use permits for withdrawal or diversion of surface water shall be issued for ten years.

50.12(3) *Withdrawal of groundwater.* Water use permits for groundwater withdrawal shall be issued for a maximum period of ten years and may be granted for less than ten years if geological data on the capacity of the aquifer and its rate of recharge are indeterminate. This rule is intended to implement Iowa Code section 455B.265.

567—50.13(455B) Monitoring, recording, and reporting of water use and effects on water sources.

50.13(1) *Water use reports.* Each permittee shall submit to the department, at least annually, or as prescribed by the department, reports of water used, diverted, or stored and any other information deemed necessary by the department.

50.13(2) *Access ports.* All new water use permits authorizing withdrawals from wells shall require that each authorized production well be equipped with an access port with a minimum diameter of $\frac{3}{4}$ inch. Access ports must be located to allow insertion of a steel tape or electric probe into the well casing for measurement of water levels.

50.13(3) *Pump tests and observation wells.* A permittee may be required to conduct a pump test as a condition of keeping a water use permit if the department finds a pump test is necessary to determine the effects that the authorized withdrawals have on other water users. A pump test, authorized by the department and supervised by a certified well contractor, licensed professional engineer, or other department designee, may be required for an administrative resolution of a well interference conflict pursuant to 567—Chapter 54. A

permittee may be required to construct, develop, and maintain adequate observation wells for use in a pump test and for subsequent water level measurements or water quality monitoring. This rule is intended to implement Iowa Code sections 455B.261, 455B.264, 455B.266, 455B.268(1) and 455B.281.

567—50.14(455B) Modification, termination, and emergency suspension of water use permits.

50.14(1) *General.* Except as provided in 50.14(2), after at least 30 days' written notice mailed to the permittee's last-known address by certified mail, and an opportunity for the permittee to be heard in an evidentiary hearing conducted in accordance with Iowa Code chapter 17A, the department may modify or terminate a water use permit or any permit condition, notwithstanding any other rule, for any of the following reasons:

a. Violation of permit condition or law. Violation of a permit condition or the law pertaining to the water use permit by the permittee or permittee's agent, tenant, or consultant.

b. Nonuse. The permittee has failed for three consecutive years to use the water, and the permittee has not demonstrated adequate plans to use the water within a reasonable time. Nonuse due to adequate rainfall shall not be a justification for permit termination. However, authorization to withdraw water from a proposed well may be terminated after notice to the permittee if the permittee has failed to construct the proposed well within three years after permit issuance.

c. Public health and safety. Modification or termination is necessary to protect the public health and safety, to protect the public interests in lands and waters, or to prevent any manner of substantial injury to persons or property.

d. Addition of conservation provisions. Modification to include conservation provisions is deemed necessary by the department.

e. Allocated amount. For three consecutive years, annual water use has exceeded the amount of water allocated in the water use permit.

50.14(2) *Emergency suspension or restriction.* Notwithstanding any other rule or permit conditions, if the department finds that it is imperatively necessary in an emergency to protect from imminent danger or substantial injury the public health, welfare, or safety, or the public or private interest in lands or water, or to implement the priority allocation system pursuant to rule 567—50.17(455B), and these findings are incorporated into a written emergency order to the permittee, the department may immediately suspend or restrict operations under a water use permit and require the permittee to take measures necessary to prevent or remedy the injury. The emergency order shall state an effective date appropriate to the situation that invoked the suspension or restriction and shall be immediately effective on that date unless stayed, modified, or vacated at a hearing before the commission or by the court. The emergency order shall remain in effect until a date specified in the order unless the order is revoked or the expiration date is modified due to a change in the situation giving rise to the order or a decision following appeal.

This rule is intended to implement Iowa Code sections 455B.271, 455B.272 and 17A.3.

567—50.15(455B) Designated protected flows of streams.

50.15(1) *Purpose.* A protected flow is designed to protect and maintain adequate water supplies for: ordinary household, livestock, and domestic uses; fish and wildlife use; recreational use; in-stream wasteload assimilation and pollution control; beneficial water use needs in the watershed; preservation or enhancement of aesthetic values; and other uses of a public nature.

50.15(2) *Protected flow basis.* Protected flows are based in part on statistical information in “Low-Flow Characteristics of Iowa Streams” (INRC Bulletin No. 9 (1958)), “Low-Flow Characteristics of Iowa Streams through 1966” (INRC Bulletin No. 10 (1970)), “Annual and

Seasonal Low-Flow Characteristics of Iowa Streams” (INRC Bulletin No. 13 (1976)), and “Statistical Summaries of Selected Iowa Streamflow Data Through September 1996, USGS Open-File Report 98-176 (1998).”

50.15(3) *Protected flow levels.*

a. At stream gaging stations. Protected flows, expressed in cubic feet per second (cfs) at points on a stream with an official USGS streamflow gage, are listed in the table below.

Protected Flow at USGS Stream Gaging Locations

River or Stream	Gage Location	USGS Gage Number	Protected Low Flow (CFS)
Beaver Creek	New Hartford	5463000	18
Big Creek	Mount Pleasant	5473450	2
Black Hawk Creek	Hudson	5463500	4.5
Boone River	Webster City	5481000	24
Boyer River	Logan	6609500	41
Cedar River	Conesville	5465000	1240
Cedar River	Cedar Rapids	5464500	937
Cedar River	Waterloo	5464000	710
Cedar River	Janesville	5458500	185
Cedar River	Charles City	5457700	100
Chariton River	Rathbun	6903900	2.9
Des Moines River	Keosauqua	5490500	350

Des Moines River	Ottumwa	5489500	300
Des Moines River	Tracy	5488500	300
Des Moines River	Des Moines (14th St.)	5485500	300
Des Moines River	Saylorville	5481650	200
Des Moines River	Stratford	5481300	310
Des Moines River	Fort Dodge	5480500	220
East Fork Des Moines River	Dakota City	5479000	42
East Nishnabotna River	Red Oak	6809500	37
East Nishnabotna River	Atlantic	6809210	18
Floyd River	James	6600500	22
Iowa River	Wapello	5465500	1390
Iowa River	Lone Tree	5455700	150
Iowa River	Iowa City	5454500	150
Iowa River	Marengo	5453100	204
Iowa River	Marshalltown	5451500	104
Iowa River	Rowan	5449500	21
Little Cedar River	Ionia	5458000	28
Little Sioux River	Turin	6607500	200
Little Sioux River	Correctionville	6606600	106
Little Sioux River	Linn Grove	6605850	42

Maple River	Mapleton	6607200	50
Maquoketa River	Maquoketa	5418500	372
Middle Raccoon River	Panora	5483600	20
Middle River	Indianola	5486490	14.6
Monona-Harrison Ditch	Turin	6602400	27
Nishnabotna	Hamburg	6810000	128
Nodaway	Clarinda	6817000	15
North Raccoon River	Jefferson	5482500	82
North Raccoon River	Sac City	5482300	14
North River	Norwalk	5486000	5.6
North Skunk River	Sigourney	5472500	35
Raccoon River	Van Meter	5484500	190
Rock River	Rock Valley	6483500	26
Shell Rock River	Shell Rock	5462000	147
Skunk River	Augusta	5474000	287
Soldier River	Pisgah	6608500	20
South Raccoon River	Redfield	5484000	58
South River	Ackworth	5487470	4.1
South Skunk River	Oskaloosa	5471500	94
South Skunk River	Ames (below Squaw Creek)	5471000	23

South Skunk River	Ames	5470000	4.8
Thompson River	Davis City	6898000	13
Turkey River	Garber	5412500	210
Upper Iowa River	Decorah	5387500	80
Walnut Creek	Hartwick	5452200	2
Wapsipinicon River	DeWitt	5422000	150
Wapsipinicon River	Independence	5421000	17
West Fork Cedar River	Finchford	5458900	66
West Fork Ditch	Hornick	6602020	12
West Nishnabotna River	Randolph	6808500	67
West Nishnabotna River	Hancock	6807410	49
White Breast Creek	Dallas	5487980	3.2
Winnebago River	Mason City	5459500	39

b. At stream locations other than gaging stations. The protected flow for points on a stream, other than at a USGS gaging station, shall be established, as the need arises, by comparison of available streamflow data and basin characteristics.

This rule is intended to implement Iowa Code sections 455B.261, 455B.262 and 455B.267.

567—50.16(455B) Water conservation.

50.16(1) General. The purpose of these water conservation requirements is to preserve the availability of water that is withdrawn for use, as opposed to protected flow provisions that preserve in-stream flows.

a. Each water use permit, including any permit granted to a CWS, will include conditions requiring routine (day-to-day) conservation practices and emergency conservation practices

after department notification. Existing permits may be modified to include conservation conditions pursuant to 50.14(3) if deemed necessary by the department.

b. Only general provisions for routine conservation will be included in a water use permit unless water is to be withdrawn from a protected water source designated in 567—Chapter 53 that has specific requirements for routine conservation. Such permit conditions are primarily intended to raise awareness of water usage, develop a preparedness for periods of water shortages, and minimize waste of water.

c. General conditions involving emergency conservation will be included in all water use permits. Specific emergency conservation conditions may be included in a permit pursuant to 50.16(2). If specific emergency conservation permit conditions are required, they will be based on a department-approved water conservation plan developed by the permittee or applicant in accordance with 50.16(3).

d. The purpose of emergency conservation is to minimize consumptive use of water from a source experiencing a temporary shortage. Emergency conservation restrictions will be imposed only when water shortages are imminent or actually exist, in accordance with rule 567—50.17(455B). Long-term water shortages are addressed in the protected source rules, 567—Chapter 53.

50.16(2) *Applicability of emergency conservation.* Specific emergency conservation requirements may be made a condition of a water use permit if the proposed or permitted withdrawal could result in a significant consumptive use of water from a source that is likely to experience a short-term shortage. Specific emergency conservation requirements will not normally be included in a water use permit under any of the following conditions:

a. The proposed or existing permitted water use involves a consumptive use of less than 25,000 gallons per day from any water source during periods of substantial water shortage.

b. The proposed or permitted use is subject to protected streamflow conditions pursuant to rule 567—50.15(455B).

c. The water source for the proposed or permitted use is a surface water impoundment or purchased storage owned by the applicant or permittee.

d. The proposed or permitted use is unable to conserve water without substantially disrupting or ceasing an essential activity that requires water.

e. The proposed or permitted withdrawal is from a source of water that is not likely to experience a substantial short-term water shortage, including but not limited to the Missouri and Mississippi Rivers and adjacent alluvial aquifers and the Iowa Great Lakes (West Okoboji, East Okoboji, Big Spirit, Little Spirit, Upper Gar, Lower Gar, and Lost Island Lakes).

f. The source of water is or will be utilized by only the permitted or proposed water user and withdrawal from the source for the permitted or proposed use has no potential for affecting other water uses.

50.16(3) *Water conservation plans.* The department may require a water conservation plan to be submitted by any existing permittee after a minimum of 90 days' notice. If a water conservation plan is required with a renewal application, the department will notify the permittee at least 120 days prior to expiration of the water use permit. Water conservation plans shall describe the measures to be used to achieve water conservation and estimate the water savings from each measure.

a. *General provisions.* The following information shall be included in all water conservation plans:

(1) A description of each source of water withdrawal, including the location, well depth, pumping rate, and date of installation.

(2) A description of the wastewater discharge, including the location and discharge frequency.

(3) Monthly withdrawal amounts from each source for the past five years.

(4) Monthly total water withdrawal amount for the past five years.

(5) Monthly total wastewater discharge amount for the past five years.

(6) A quarterly breakdown, by the water use categories in 50.17(3), of total water use and estimated consumptive water use over the past five years.

(7) A description of any previous water shortage problems, including the cause, frequency, other affected parties, and how they were resolved.

(8) Identification of nearby water supplies that are potentially affected by or could potentially affect the proposed or permitted withdrawal.

(9) A means of identifying impending water shortage problems.

b. Routine conservation provisions. Consideration of routine conservation is encouraged in a water conservation plan. Documented water savings from routine conservation measures will be credited toward emergency conservation requirements. Suggested routine conservation measures include:

(1) Use of water-saving plumbing devices or required use of these devices in building codes.

(2) Scheduling irrigation to minimize peak water use.

(3) Use of efficient irrigation techniques.

(4) Implementing programs to minimize lost water, such as distribution system leaks.

(5) Use of metered water billing by public water supplies.

(6) Utilizing best commercially available technology to optimize efficiency of water use.

(7) Implementing recycling and reuse practices.

(8) Developing alternative water sources that are not susceptible or are less susceptible to shortages.

(9) Increasing rates charged for water or eliminating reduced rates for large users.

c. Emergency conservation provisions. Water conservation plans shall contain emergency conservation provisions in accordance with the following criteria.

(1) General.

1. The consumptive nature of a water use, as described in 50.16(2) and in accordance with this subrule, shall be reduced by at least 50 percent over similar periods of normal use. This criterion does not apply to irrigation use. If this requirement cannot be met, justification for nonattainment shall be provided. Justification shall include documentation that an activity involving water use is essential and that the best commercially available technology is being used. The department may then grant waivers on a case-by-case basis.

2. Measures that will be credited for emergency conservation include but are not limited to the following:

- Documented water savings resulting from routine water conservation measures;
- Shutdown, postponement, or curtailment of nonessential water use activities;
- Switching to nonaffected sources for water supply;
- Mitigation of consumptive uses by directly discharging stored water or water from a nonaffected source to the affected water source;
- Acquisition and retirement of existing consumptive uses from the affected water source (credit for retirement of existing consumptive uses will be given only for the amount authorized during periods when emergency conservation is required); and
- Imposing surcharges on water use during periods of shortage.

(2) Public water supplies (PWSs). At a minimum, emergency water conservation plans for PWSs must include provisions for restricting outside, consumptive water use.

(3) Irrigation water use.

1. Emergency water conservation plans for irrigation water uses shall limit irrigation water use to the equivalent of one inch per irrigated acre per week for general crops and specialty crops unless the plan contains other mitigating provisions, such as those listed above in 50.16(3)“c”(1).

2. Water conservation plans shall address irrigation scheduling. Irrigation scheduling should attempt to provide approximately equal water use on each day of an irrigation cycle. Scheduling may be done in cooperation with other nearby irrigators who utilize the same water source.

d. Resources for water conservation and water use reduction planning.

(1) The following resources are suggested by and available from the department as guidance for the development of water conservation plans and water use reduction plans:

1. “Water Wise—Efficiency Planning and Water Conservation Plan Workbook for Water and Wastewater Utilities,” Iowa Association of Municipal Utilities, 2013 (available online through the department’s website).

2. “Water Conservation Programs—A Planning Manual,” Manual of Water Supply Practices M52, American Water Works Association, 2006.

3. “Handbook of Water Use and Conservation,” Amy Vickers, Waterplow Press, Amherst, Massachusetts, 2001.

(2) Water conservation plans and water use reduction plans shall comply with the standards of the American Water Works Association or a reasonable equivalent as determined by the department.

This rule is intended to implement Iowa Code sections 455B.262 and 455B.265.

567—50.17(455B) Priority allocation restrictions.

50.17(1) *General.* After any triggering event described in 50.17(2) occurs, the department will investigate and may restrict water use according to the priority allocation plan described in 50.17(3). Prior to imposing the priority allocation plan, the department will normally require emergency conservation measures to be taken by existing permittees. The department will not normally require emergency conservation until a shortage of water is imminent and will not normally impose the priority allocation plan until an actual impairment of water usage exists.

a. The department will notify existing permittees of any emergency restriction or suspension of water use by written order pursuant to 50.14(2). A permittee will be required to maintain daily water withdrawal and wastewater discharge records, if any, while the emergency order is in effect. These records shall be available for department inspection to verify compliance with the order.

b. Suspension or restriction of water usage applicable to otherwise nonregulated water users shall be by emergency order of the director that the department shall cause to be published in local newspapers of general circulation and broadcast by local media. The emergency order shall state an effective date of the suspension or restriction and shall be immediately effective on that date unless stayed, modified, or vacated at a hearing before the commission or by a court.

c. The department will lift the suspension or restriction of water usage, as deemed appropriate, when evidence of sustained, improved conditions is available.

d. The department will not impose a suspension of water or a further restriction, other than emergency conservation, on the uses of water provided in 50.17(3) “*b*”(6) through (8), or on uses of water pursuant to a contract with the state as provided in Iowa Code sections 455B.263(5) and 455B.263(6), unless the governor has issued a proclamation as described in 50.17(2) “*b.*” Notwithstanding such proclamation, in the case of water use under a contract

with the state pursuant to Iowa Code sections 455B.263(5) and 455B.263(6) and in effect prior to March 5, 1985, restriction or suspension measures will be limited to emergency conservation.

50.17(2) *Triggering events.* The department may implement the priority allocation plan following the occurrence of any of the following:

a. Receipt of a petition by a governmental subdivision or 25 persons to implement the priority allocation plan due to a substantial local water shortage adversely affecting their water supply.

b. Issuance by the governor of a proclamation of a disaster emergency due to a drought or other event affecting water resources of the state.

c. Determination by the department in conjunction with the homeland security and emergency management division of the Iowa Department of Public Defense of a local crisis that affects availability of water.

d. Receipt of information from a state or federal natural resource, research, or climatological agency indicating that a drought of local or state magnitude is imminent. As a general guideline, emergency conservation or priority allocation restrictions will not be imposed on withdrawals from a surface stream or adjacent alluvial aquifer when streamflow is above the 7Q10 level.

50.17(3) *Priority allocation plan.* Notwithstanding a person's possession of a permit or a person's use of water being a nonregulated use, the department may suspend or restrict water use by use category on a local or statewide basis in the following order:

a. Water conveyed across state boundaries.

b. Water used for:

(1) Recreational or aesthetic purposes.

(2) Irrigation of general crops.

- (3) Irrigation of specialty crops.
- (4) Manufacturing or other industrial processes.
- (5) Generation of electrical power.
- (6) Livestock production.
- (7) Human consumption and sanitation supplied by rural water districts, municipal water systems, or other public water supplies.
- (8) Human consumption and sanitation supplied by a private water supply.

This rule is intended to implement Iowa Code section 455B.266.

567—50.18(455B) Well plugging. When a water use well is no longer used, or is in a state of disrepair or neglect, the permittee shall be responsible for plugging the well in accordance with Iowa Code section 455B.190, 567—Chapter 39, or by an alternate method approved by the department for prevention of groundwater pollution. The well plugging form must be completed and submitted as specified on the form. However, the department shall grant a waiver from the well plugging requirement if a permittee demonstrates an intent to maintain the well as a source of water for a nonregulated use or if the department determines that the well should be maintained as an observation well.

This rule is intended to implement Iowa Code sections 455B.262 through 455B.279(2).

ITEM 2. Rescind and reserve **567—Chapter 51**.

ITEM 3. Rescind and reserve **567—Chapter 52**.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item (**indicates proposed consent item*)

***19. Chapter 53, “Protected Water Sources” – Final Rule**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 53. This rulemaking is the result of the Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 53 provides procedures for designating specific surface water and groundwater sources as protected sources, including information that water use permit applicants and nonregulated entities are to provide to withdraw water from such sources. The sources designated as protected sources are clearly listed and mapped in the chapter. Designation of protected surface and groundwater sources allows for continued beneficial use of those sources while protecting their capacity to supply adequate quantity and quality of water for use within the state of Iowa. This chapter has been reviewed and edited consistent with Executive Order 10.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8652C. Two public hearings were held on February 3 and February 4, 2025.

Changes from NOIA: Five people attended the public hearings but no public comments were received. The Final rule is identical to the NOIA.

Effective Date of Final Rule: June 18, 2025

CHAD FIELDS, GEOLOGIST III
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 53 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION [567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 53, “Protected Water Sources — Purposes — Designation Procedures — Information in Withdrawal Applications — Limitations — List of Protected Sources,” and adopts a new Chapter 53, “Protected Water Sources,” Iowa Administrative Code.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3), 455B.262(3), 455B.263(8), 455B.264, 455B.274, 455B.275(9) and 455B.278(1).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.262, 455B.264 through 455B.274 and 455B.278.

Purpose and Summary

New Chapter 53 provides procedures for designating specific surface water and groundwater sources as protected sources, including information that water use permit applicants and nonregulated entities are to provide to withdraw water from such sources. The sources designated as protected sources are clearly listed and mapped in the chapter. Designation of protected surface and groundwater sources allows for continued beneficial use of those sources while protecting their capacity to supply adequate quantity and quality of water for use within the state of Iowa. This chapter has been reviewed and edited consistent with Executive Order 10.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8652C**.

Two public hearings were held. The first public hearing was held on February 3, 2025 from 2:00 PM to 3:00 PM virtually via Zoom. The second public hearing was held on February 4, 2025 from 10:00 AM to 11:00 AM virtually via Zoom.

Four people attended the first public hearing but provided no comments. One member of the public attended the second public hearing but provided no comments. No public comments were received during the public comment period.

This final rule is identical to the Notice of Intended Action.

Adoption of Rulemaking

This rulemaking was adopted by the Environmental Protection Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs was found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its [regular monthly meeting](#) or

at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 44 and adopt the following **new** chapter in lieu thereof:

CHAPTER 53

PROTECTED WATER SOURCES

567—53.1(455B) Designation of protected sources.

53.1(1) The department may designate a surface water or groundwater source within a defined geographical area as a protected source. Notwithstanding the requirements in this chapter, the department may impose permit conditions on a case-by-case basis to protect the water resources of the state.

53.1(2) The purpose of designating a water source as a protected source is to ensure long-term availability in terms of quantity and quality to preserve public health and welfare. Purposes include but are not limited to the following:

- a.* To preserve the availability of the protected source for sustained beneficial use.
- b.* To prevent or minimize the movement of groundwater contaminants.
- c.* To maintain the surface water quality within a specific stream segment in order to meet state or federal standards, to preserve protected flows, or to maintain its availability for other beneficial use.
- d.* To preserve the protected flows in a stream that is hydraulically connected to a protected groundwater source.

This rule is intended to implement Iowa Code sections 455B.262, 455B.264 through 455B.274 and 455B.278.

567—53.2(455B) Designation procedure. The procedure for designation of a protected source shall be a rulemaking to amend the list of protected sources in rule 567—53.5(455B). In addition to the requirements of rule 561—5.1(17A), an interested person who petitions the department to designate a protected water source may also be required to provide supporting information, including but not limited to:

53.2(1) Facts and arguments demonstrating that existing rules and the opportunity for public participation in the application review and decision-making procedures of rule 567—50.7(17A,455B) and 567—subrule 50.8(3) are inadequate to ensure the long-term availability of the source and to preserve the public health and welfare.

53.2(2) Predictive geohydrological and chemical analyses of the groundwater source if the petition is to prevent or minimize the movement of known or suspected contaminants.

53.2(3) Facts and arguments demonstrating the effect that additional withdrawals from a stream or stream segment proposed for designation would have on downstream discharges, surrounding alluvial systems, and biological systems, and on potential changes in the frequency at which the protected stream discharge levels are reached.

This rule is intended to implement Iowa Code sections 455B.262, 455B.264 through 455B.274 and 455B.278.

567—53.3(455B) Information requirements for applications to withdraw water from protected sources. An applicant proposing to withdraw water from a protected source, as listed in rule 567—53.5(455B), may be required to submit information necessary for the department to determine the effects resulting from such withdrawal.

53.3(1) *Withdrawals from protected groundwater sources.* Applicants for water use permits may be required to provide the information detailed in rule 567—50.7(17A,455B) and additional predictive geohydrological and chemical analyses of the groundwater source. Where there is potential for a known contaminant to migrate, predictive analyses may also be

requested to show potential movement and effects of the withdrawal on the hydraulic head. Monitoring may be required in permits authorizing withdrawals from a protected groundwater source.

53.3(2) *Withdrawals from protected surface water sources.* Applicants for water use permits may be required to demonstrate the effect of proposed withdrawals on downstream discharges, surrounding alluvial systems, and biological systems, and of potential changes in the frequency at which protected stream discharge levels are reached, for any stream or stream reaches listed in rule 567—53.5(455B).

This rule is intended to implement Iowa Code sections 455B.262, 455B.264 through 455B.274 and 455B.278.

567—53.4(455B) Conditions in permits for withdrawals of water from a protected source. The designation of a protected water source in rule 567—53.5(455B) may include a list of special conditions for permits issued for withdrawals of water from the designated source. The designation may also include guidelines for the imposition of special limitations on withdrawals authorized by permits that were in force on the effective date of the protected source designation. However, such guidelines may be enforced only in accordance with the procedures in rule 567—50.14(455B) for modification, termination, and emergency suspension of permits, or after a permittee has had an opportunity to contest the imposition of proposed special limitations in permit renewal proceedings. When a group of permits is potentially affected by the guidelines in rule 567—53.5(455B), hearings under rule 567—50.14(455B) may be consolidated.

53.4(1) *Withdrawals from streams or associated alluvium that are protected sources.* The department may apply special conditions on all water use permits for withdrawals from streams and associated alluvial systems that are protected water sources listed in rule 567—53.5(455B). Such conditions may include a cessation of withdrawals at a stream discharge

rate as determined by the department when withdrawals may be in excess of the level required by 567—subrule 50.15(3). These conditions may apply to both consumptive and nonconsumptive withdrawals.

53.4(2) *Withdrawals from groundwater sources that are protected sources.* The department may apply special conditions on all water use permits for withdrawals from groundwater systems that are protected water sources listed in rule 567—53.5(455B). Such conditions may include immediate cessation of withdrawals if declines in hydraulic head or movement of known contaminants in the source are detected. These conditions may apply to both consumptive and nonconsumptive withdrawals.

567—53.5(455B) List of protected water sources. The following list identifies water sources designated as protected sources under this chapter. Each listing includes the name of the designated surface water or groundwater source, the geographical areas affected, the specific purposes for designating the source, and special limitations imposed or recommended to achieve the purpose of the protected source designation. The listing may also include special monitoring requirements or specify a date by which the department must review a protected source designation.

53.5(1) *Ralston Site, Linn County.*

a. Geographic area. The protected water source area includes an area within the boundaries of the cities of Cedar Rapids and Marion in Linn County. The actual geographical boundaries of the area are defined in 53.5(1)“d.”

b. New or modified water use permits. Any new application for a permit to withdraw groundwater or to increase an existing permitted groundwater withdrawal from within the protected water source area will be restricted or denied, if necessary to preserve public health and welfare or to minimize movement of groundwater contaminants from the Ralston Site.

The Ralston Site is identified as an EPA Comprehensive Environmental Response, Compensation, and Liability Act site under identification number IAD 980632491.

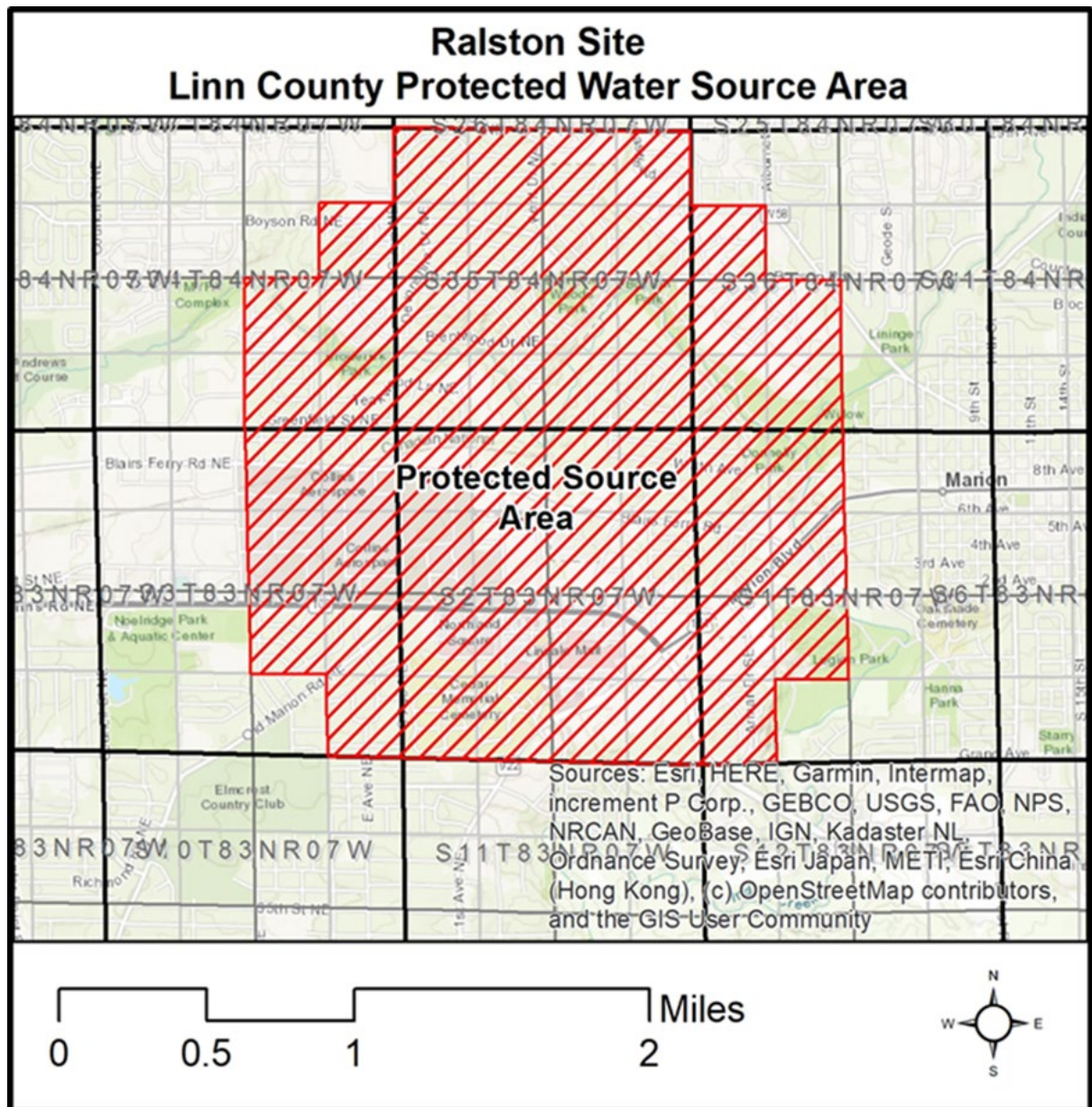
c. Groundwater withdrawal. Groundwater withdrawal from within the protected water source area may also be restricted or denied from what would otherwise be nonregulated wells, if necessary to preserve public health and welfare or to minimize the movement of groundwater contaminants from the Ralston Site. The Linn County health department will refer any application for a private well construction permit within the protected water source area to the department, which will determine whether to permit the proposed well.

d. Map of protected water source area. The department shall maintain a map of the protected water source area.

(1) The entire following described area within Linn County is defined as a protected water source:

1. All areas of Section 35, Township 84 North, Range 7 West.
2. All areas of the SW $\frac{1}{4}$ of Section 36, Township 84 North, Range 7 West.
3. All areas of the SW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 36, Township 84 North, Range 7 West.
4. All areas of the SE $\frac{1}{4}$ of Section 34, Township 84 North, Range 7 West.
5. All areas of the SE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 34, Township 84 North, Range 7 West.
6. All areas of Section 2, Township 83 North, Range 7 West.
7. All areas of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 1, Township 83 North, Range 7 West.
8. All areas of the N $\frac{1}{2}$ of the SW $\frac{1}{4}$ of Section 1, Township 83 North, Range 7 West.
9. All areas of the SW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 1, Township 83 North, Range 7 West.
10. All areas of the NE $\frac{1}{4}$ of Section 3, Township 83 North, Range 7 West.
11. All areas of the N $\frac{1}{2}$ of the SE $\frac{1}{4}$ of Section 3, Township 83 North, Range 7 West.
12. All areas of the SE $\frac{1}{4}$ of the SE $\frac{1}{4}$ of Section 3, Township 83 North, Range 7 West.

(2) Map of the protected source area.



53.5(2) Cambrian-Ordovician (Jordan) aquifer in Johnson and Linn Counties.

- a. *Geographical area.* The protected water source area includes portions of Johnson and Linn Counties. The actual geographical boundaries of the area are defined in 53.5(2) “d.”
- b. *New or modified water use permits.* Any new application for a permit to withdraw groundwater or to increase an existing permitted groundwater withdrawal from the Cambrian-Ordovician (Jordan) aquifer within the protected water source area will be restricted or denied if necessary to preserve public health and welfare.

c. Groundwater withdrawal. Groundwater withdrawal from within the protected water source area may also be restricted or denied from water supply wells constructed in the Cambrian-Ordovician (Jordan) aquifer, public or private, and the construction of all new water supply wells in this aquifer shall be restricted or denied, if necessary, to preserve public health and welfare or to minimize adverse effects to the available head. The Johnson County and Linn County health departments are not authorized to issue a construction permit for a private well drilled into or through the Cambrian-Ordovician (Jordan) aquifer within the protected water source area without department approval. The department will determine whether the proposed well can be constructed and may require that the well meet public water well standards.

d. Map of protected water source area. The department shall maintain a map of the protected water source area.

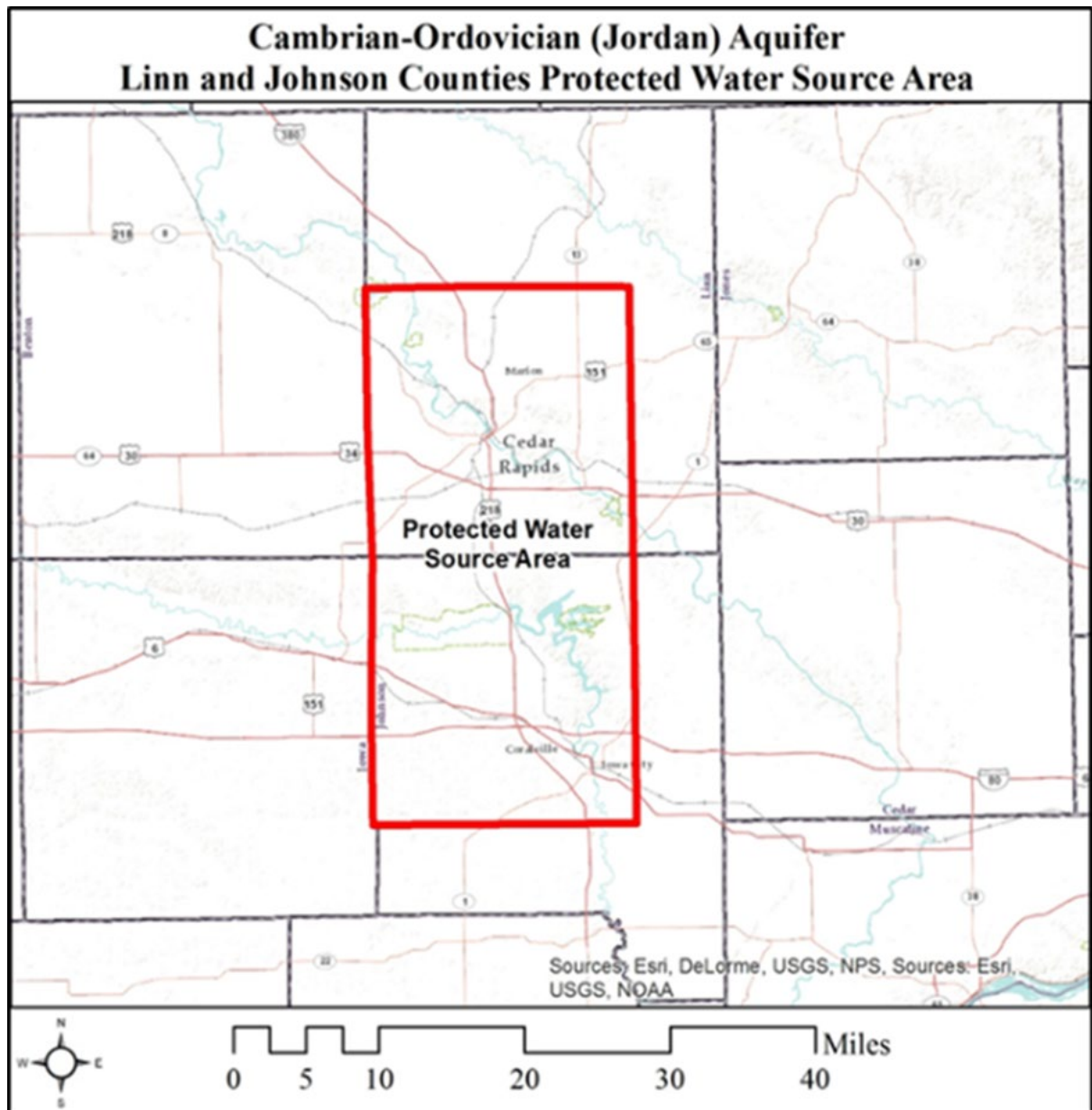
(1) The entire following described area within Johnson County and within Linn County is defined as a protected water source.

Johnson County

1. All areas of Township 79 North, Range 6 West.
2. All areas of Township 79 North, Range 7 West.
3. All areas of Township 79 North, Range 8 West.
4. All areas of Township 80 North, Range 6 West.
5. All areas of Township 80 North, Range 7 West.
6. All areas of Township 80 North, Range 8 West.
7. All areas of Township 81 North, Range 6 West.
8. All areas of Township 81 North, Range 7 West.
9. All areas of Township 81 North, Range 8 West.

Linn County

1. All areas of Township 82 North, Range 6 West.
 2. All areas of Township 82 North, Range 7 West.
 3. All areas of Township 82 North, Range 8 West.
 4. All areas of Township 83 North, Range 6 West.
 5. All areas of Township 83 North, Range 7 West.
 6. All areas of Township 83 North, Range 8 West.
 7. All areas of Township 84 North, Range 6 West.
 8. All areas of Township 84 North, Range 7 West.
 9. All areas of Township 84 North, Range 8 West.
- (2) Map of the described protected water source area in Linn and Johnson Counties.



53.5(3) *Cambrian-Ordovician (Jordan) aquifer in Webster County.*

a. Geographical area. The protected water source area includes portions of Webster County. The actual geographical boundaries of the area are defined in 53.5(3)“d.”

b. New or modified water use permits. Any new application for a permit to withdraw groundwater or to increase an existing permitted groundwater withdrawal from the Cambrian-Ordovician (Jordan) aquifer within the protected water source area will be restricted or denied if necessary to preserve public health and welfare.

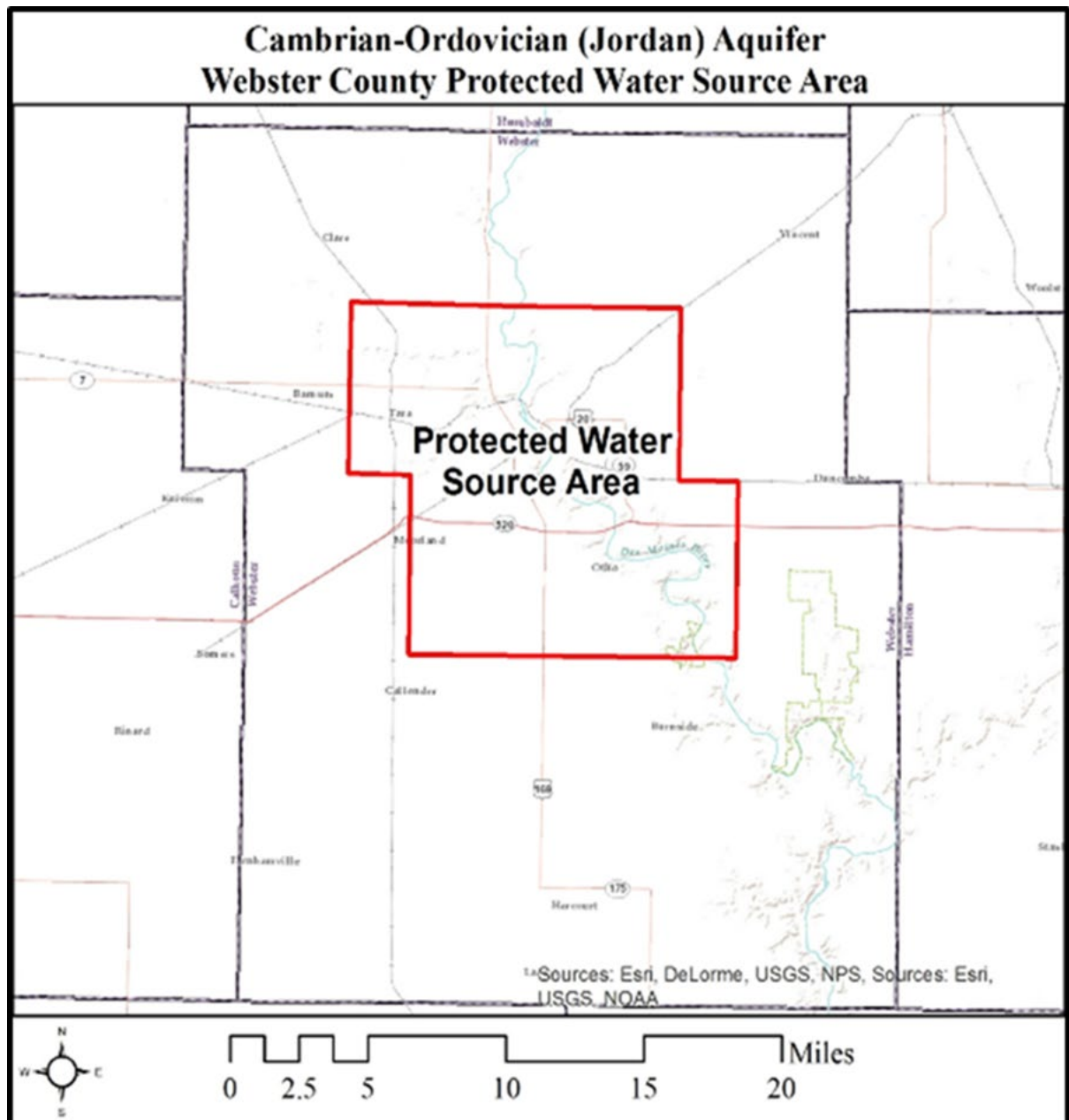
c. Groundwater withdrawal. Groundwater withdrawal from within the protected water source area may also be restricted or denied from water supply wells constructed in the Cambrian-Ordovician (Jordan) aquifer, public or private, and the construction of all new water supply wells in this aquifer shall be restricted or denied, if necessary, to preserve public health and welfare or to minimize adverse effects to the available head. The Webster County health department is not authorized to issue a construction permit for a private well drilled into or through the Cambrian-Ordovician (Jordan) aquifer within the protected water source area without department approval. The department will determine whether the proposed well can be constructed and may require that the well meet public water well standards.

d. Map of protected water source. The department shall maintain a map of the protected water source area.

(1) The entire following described area within Webster County is defined as a protected water source.

1. All areas of Township 88 North, Range 28 West.
2. All areas of Township 88 North, Range 29 West.
3. All areas of Township 89 North, Range 28 West.
4. All areas of Township 89 North, Range 29 West.

(2) Map of the described protected water source area in Webster County.



53.5(4) *Iowa Army Ammunition Plant (IAAAP) RDX Contaminant Site in Des Moines County and Lee County.* The IAAAP hexahydro-1,3,5-trinitro-1,3,5-triazine (CAS Registry Number 121-82-4, also known as RDX, or Royal demolition explosive) protected water source area is known as the IAAAP RDX protected water source area.

a. Geographical area. The IAAAP RDX protected water source area includes portions of Des Moines and Lee Counties. The geographical boundaries of the area are defined in 53.5(4)“e.” The IAAAP site is identified as an EPA Comprehensive Environmental Response, Compensation, and Liability Act site under identification number IA7213820445.

b. New or modified water use permits. Any new application for a permit to withdraw groundwater or to increase an existing permitted groundwater withdrawal from the IAAAP RDX protected water source area will be restricted or denied if necessary to preserve public health and welfare and to minimize the movement of groundwater contaminants from the IAAAP RDX site.

c. Groundwater withdrawal. Groundwater withdrawal from within the protected water source area may also be restricted or denied from regulated or nonregulated water supply wells, and the construction of all new water supply wells shall be restricted or denied, if necessary, to preserve public health and welfare and to minimize movement of groundwater contaminants.

(1) The department is the only authorized well permitting authority within the protected water source area. No well shall be constructed within the protected water source area unless a written permit is obtained from the department.

(2) All well construction permit applications for this protected water source area shall be submitted to the department. The Des Moines County and Lee County health departments or their designated permitting authorities shall refer all private well construction permit applications to the department when the proposed wells are located within the protected water source area.

(3) The department will determine whether the proposed well can be installed and the well construction standards that are required for the well's installation. All approved well construction shall use department-approved well construction standards and operational standards to ensure the protection of public health and welfare and to minimize the potential movement of contaminants in the groundwater within the protected water source area.

d. Boundaries. When monitoring results, or an investigation conducted by the department, the IAAAP, or an agent designated by either party indicates that the monitored contaminant

concentrations or the monitored contaminant boundaries have significantly changed, the department may increase or decrease the boundaries of the protected water source area to maintain the separation distance to the monitored contamination. The department will publish any changes in the contaminant boundaries and send a notice to the IAAAP, the Des Moines County and Lee County health departments, and the affected landowners.

e. Map of protected water source. The department shall maintain a map of the protected water source area.

(1) The following described area within Des Moines County and Lee County is defined as a protected water source.

1. Des Moines County, Union Township

- East one-half of section 34 in Township 69 North, Range 3 West
- All areas of section 35 in Township 69 North, Range 3 West
- West one-half of section 36 in Township 69 North, Range 3 West

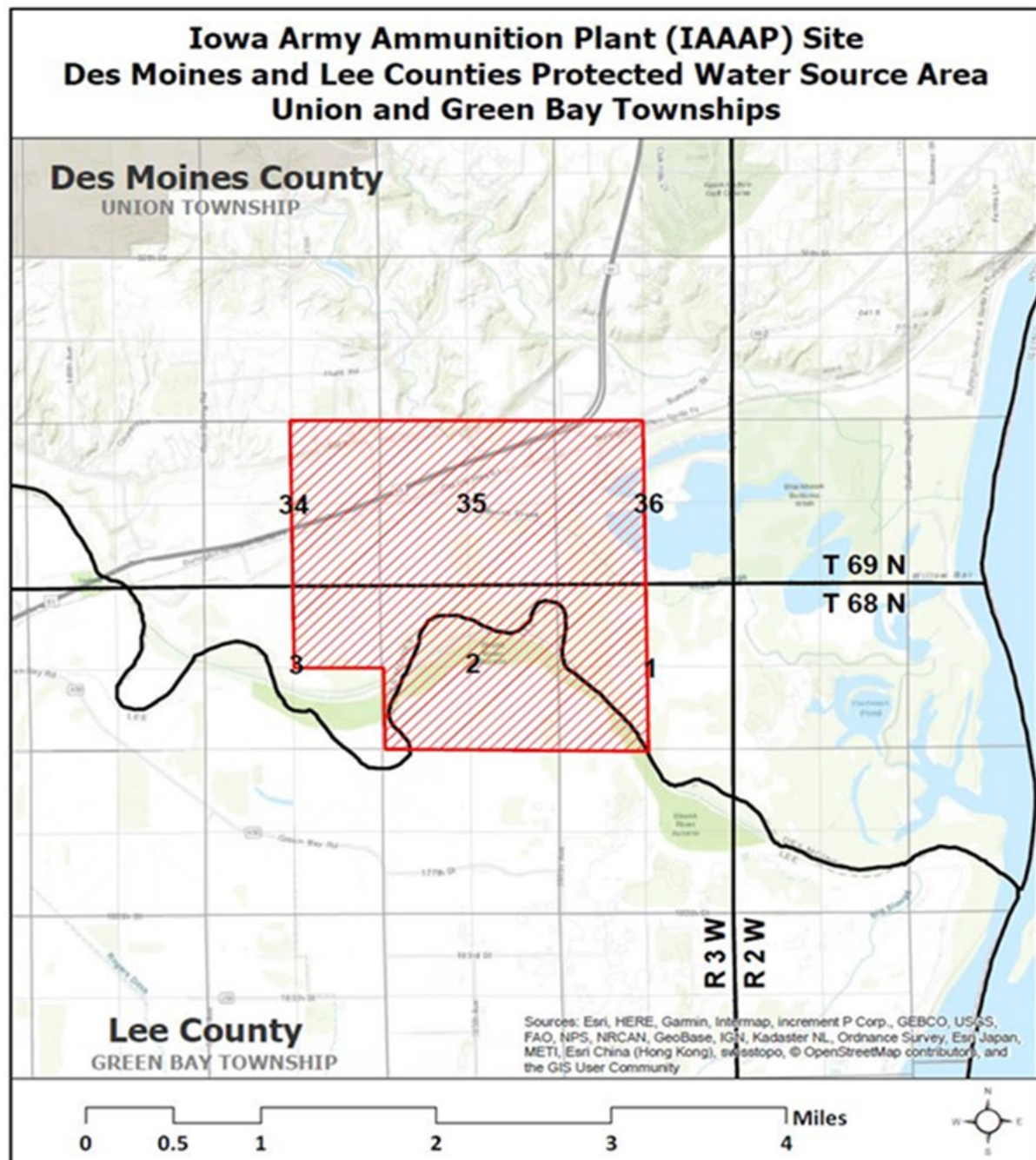
2. Des Moines County, Green Bay Township

- Northeast quarter section 3 in Township 68 North, Range 3 West
- All areas of section 2 in Township 68 North, Range 3 West
- West one-half of section 1, Township 68 North, Range 3 West

3. Lee County, Green Bay Township

- All areas of section 2 in Township 68 North, Range 3 West
- All areas of section 1 in Township 68 North, Range 3 West

(2) Map of the described protected water source area in Des Moines and Lee Counties.



NOTE: When protected sources are designated, they will be listed as part of this rule.

This rule is intended to implement Iowa Code sections 455B.262, 455B.264 through 455B.274 and 455B.278.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item (**indicates proposed consent item*)

***20. Chapter 54, “Water Use Permit Restrictions or Compensation by Permitted Users to Nonregulated Users Due to Well Interference” – Final Rule**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 54. This rulemaking is the result of the Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 54 provides a framework for resolving well interference conflicts in situations where an existing or proposed permitted use causes or will cause well interference in a non-regulated well and informal negotiation between the parties has failed. This framework is intended for situations in which an adequate groundwater supply is available from the utilized aquifer but withdrawal for a permitted use causes, or will cause, a water level decline in a non-regulated well such that it does not, or will not, provide a sufficient water supply. This framework is limited to conflicts in which the non-regulated well provides sufficient water prior to the interference. New Chapter 54 allows for either a settlement or continued use of water resources in the event that well interference is experienced by a non-regulated water user within the state. This chapter has been reviewed and edited consistent with Executive Order 10.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8630C. Two public hearing were held on February 3 and February 4, 2025.

Changes from NOIA: Five people attended the public hearings but no public comments were received. The Final rule is identical to the NOIA.

Effective Date of Final Rule: June 18, 2025

CHAD FIELDS, GEOLOGIST III
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 54 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION [567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 54, “Criteria and Conditions for Permit Restrictions or Compensation by Permitted Users to Nonregulated Users Due to Well Interference,” and adopts a new Chapter 54, “Water Use Permit Restrictions or Compensation by Permitted Users to Nonregulated Users Due to Well Interference,” Iowa Administrative Code.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3), 455B.262(3), 455B.263(8), 455B.281(1) and 455B.281(2).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.171 and 455B.281.

Purpose and Summary

New Chapter 54 provides a framework for resolving well interference conflicts in situations where an existing or proposed permitted use causes or will cause well interference in a non-regulated well and informal negotiation between the parties has failed. This framework is intended for situations in which an adequate groundwater supply is available from the utilized aquifer but withdrawal for a permitted use causes, or will cause, a water level decline in a non-regulated well such that it does not, or will not, provide a sufficient water supply. This framework is limited to conflicts in which the nonregulated well provides sufficient water prior to the interference. Chapter 54 allows for either a settlement or continued use of water resources in the event that well interference is experienced by a non-regulated water user

within the state. This chapter has been reviewed and edited consistent with Executive Order 10.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8630C**.

Two public hearings were held. The first public hearing was held on February 3, 2025 from 2:00 PM to 3:00 PM virtually via Zoom. The second public hearing was held on February 4, 2025 from 10:00 AM to 11:00 AM virtually via Zoom.

Four people attended the first public hearing but did not submit a comment. One member of the public attended the second public hearing but did not submit a comment. No public comments were received during the public comment period.

This final rule is identical to the Notice of Intended Action.

Adoption of Rulemaking

This rulemaking was adopted by the Environmental Protection Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs was found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 54 and adopt the following **new** chapter in lieu thereof:

CHAPTER 54

WATER USE PERMIT RESTRICTIONS OR COMPENSATION BY PERMITTED USERS TO
NONREGULATED USERS DUE TO WELL INTERFERENCE

567—54.1(455B) Definitions. The following definitions apply to this chapter:

“Adequate groundwater supply” means an aquifer that is capable of providing enough water to satisfy the demands that have been placed on it.

“Apparent well interference” means well interference in a nonregulated well resulting from a permitted use is likely but has not been verified.

“Compensation” means payment to the owner of a nonregulated well for damages caused by a lowered water level in the well due to withdrawal of water for a permitted use.

“Complainant” means the owner of a nonregulated well who is suspected of being or has been shown to be adversely affected by well interference.

“Complaint” means the formal allegation against a permitted water user who is suspected of causing well interference.

“Informal negotiations” means discussion between a complainant and permittee or applicant regarding settlement of a well interference conflict.

“Informal settlement” means a resolution of a well interference conflict by informal negotiations between a complainant and permittee or applicant without formal action by the department.

“Suspect permittee” means a party possessing a water use permit when the permitted use is suspected of causing well interference in a nonregulated well.

“Technical Bulletin No. 23” means “Technical Bulletin No. 23, Guidelines for Well Interference Compensation,” Iowa Department of Natural Resources, April 1986, available on the department’s website at www.iowadnr.gov.

“Test pumping” means a controlled aquifer test for verification of well interference using the existing wells and pumping systems of the complainant and suspect permittee.

567—54.2(455B) Requirements for informal negotiations.

54.2(1) The complainant and permittee or applicant must attempt to negotiate an informal settlement prior to the department becoming involved in the verification and settlement procedures described in rules 567—54.6(455B) and 567—54.7(455B). If informal negotiations fail, a letter stating the reasons for the failure to achieve a settlement, signed by all parties to the complaint or identifying those parties who refuse to sign, shall be sent to the department. Verbal notification will be accepted if followed by written confirmation.

54.2(2) Guidelines for informal negotiations are provided in Technical Bulletin No. 23. Settlements which result from informal negotiations may be registered with the department for consideration in subsequent conflicts.

567—54.3(455B) Failure to cooperate. If any party refuses to cooperate, fails to provide the required information, or fails to meet the specified deadlines, the complaint may be dismissed,

a permanent permit modification or termination may be issued pursuant to 567—subrule 50.14(1) or an application may be conditioned or denied.

567—54.4(455B) Well interference by proposed withdrawals. If the department, using supporting data provided by the applicant pursuant to rule 567—50.5(455B), determines that a proposed withdrawal will cause verified well interference in a nonregulated well(s), the applicant will be given options for resolving the imminent conflict(s) in accordance with 567—subrule 50.7(1). If the applicant selects an option involving compensation to the nonregulated well owner(s), the applicant and nonregulated well owner(s) must attempt to negotiate an informal settlement in accordance with rule 567—54.2(455B). If informal negotiations fail, the department shall pursue administrative resolution of the conflict, pursuant to rule 567—54.7(455B). The applicant will remain liable for future well interference that is proven to be greater than the amount resolved in the original settlement and for other well interference that was not previously verified.

567—54.5(455B) Well interference by existing permitted uses. If a complaint is made to the department by the owner of a nonregulated well regarding suspected well interference, the following procedures will be followed.

54.5(1) *Initial notification of complaint.* The complainant shall provide the department with the following information:

- a.* The complainant's name, address, email address, and telephone number;
- b.* A description of the nonregulated well, including location, depth, construction data, and other pertinent information, as available;
- c.* A description of the problem; and
- d.* The suspected cause of well interference.

54.5(2) *Initial department response.* The department will provide the complainant with a description of procedures, guidelines for resolving well interference complaints, and

information from department files on permitted uses in the area. The department will also notify any permitted user who is suspected of causing well interference of a possible well interference complaint.

54.5(3) *Well inspection.* It is the complainant's responsibility to have the affected well inspected by a certified well contractor, to have the contractor complete Appendix C (Well Inspection Form) from Technical Bulletin No. 23, and to submit the document to the department. Well inspection costs are eligible for compensation if well interference is subsequently verified.

54.5(4) *Corrective work prior to a settlement.*

a. The complainant may proceed with corrective measures prior to a settlement and remain eligible for compensation if well interference is subsequently verified. However, there will be no assurance of compensation. To be eligible for compensation, conditions prior to the corrective work must be documented using Appendix C (Well Inspection Form) from Technical Bulletin No. 23.

b. The department and suspect permittee(s) should be notified, given opportunity to inspect the nonregulated well, and consider alternative means for resolving the possible conflict prior to proceeding with any corrective work.

c. Determination of apparent well interference, verified well interference, and compensation, if any, will proceed in accordance with this chapter.

54.5(5) *Determination of apparent well interference.*

a. The department will determine that a complaint appears valid if all of the following criteria are met:

- (1) The well inspection found no mechanical or structural reason for well failure;
- (2) A permitted use can be identified as an apparent cause of well interference;

(3) The nonregulated well was in use when the permitted use began or the suspect permitted use changed significantly while the nonregulated well was still active;

(4) The suspect permittee and complainant withdraw water from the same aquifer or sources likely to be in close hydraulic connection;

(5) The suspect permittee was withdrawing water during the period when well interference was claimed;

(6) Well interference is reasonably possible with known conditions (i.e., pumping rates, separation distances, aquifer properties, and relative water levels in the wells); and

(7) Other obvious causes of water level decline are not apparent.

b. The department may identify permitted uses, in addition to those identified by the complainant, as apparent causes of well interference and will so notify the complainant and each suspect permittee. The department or a suspect permittee may identify other nonregulated wells that may also be affected by well interference caused by the suspected permittee(s), and the department will so notify the suspect permittee(s) and each potential complainant who has been identified.

c. If the department determines that apparent well interference exists, it will immediately notify the complainant and suspect permittee(s) of the situation, procedures, and required informal negotiations. If the department determines that apparent well interference does not exist, the complaint will be dismissed and the complainant and each suspect permittee will be so notified. A dismissal may be appealed by the complainant as provided in 54.9(2).

54.5(6) *Emergency withdrawal suspension or restrictions.* If the complainant's well is not able to deliver a sufficient water supply due to apparent well interference, the department may immediately suspend or restrict withdrawal by the suspect permittee(s) pursuant to 567—subrule 50.14(2). Restrictions may include but are not limited to scheduling withdrawals or reducing withdrawal rates. If approved by the department, the permittee(s) may elect to

provide a temporary water supply to the complainant or take other appropriate measures as an alternative to withdrawal suspension or restrictions.

567—54.6(455B) Verification of well interference.

54.6(1) *Test pumping.* Test pumping of the complainant's and permittee's wells may be required for verification of well interference. A permittee may perform test pumping to verify well interference even if it is not required by the department.

a. Test pumping shall be authorized by the department and supervised by a certified well contractor, registered professional engineer, or other department designee. The test pumping shall be performed within 30 days of department notification to the permittee and the complainant that test pumping is to be conducted. The permittee and complainant shall each be responsible for all costs associated with test pumping their own wells, although the complainant's costs may be eligible for compensation.

b. The complainant shall provide access to the nonregulated well for water level measurements during test pumping by the permittee. The permittee may be required to provide the complainant with a temporary water supply during test pumping. Test pumping shall be performed in accordance with Technical Bulletin No. 23.

54.6(2) *Determination of verified well interference.* The department will evaluate the occurrence of well interference based on data from the test pumping or other available hydrologic information and notify the affected parties of the results.

a. If test pumping was not performed under critical conditions (e.g., pumping rate less than maximum permitted rate, pumping duration less than critical duration, recharge more than minimum, etc.), the department will adjust the test pumping results accordingly and qualify estimations when reporting the results.

b. The evaluation results will be used by the department to determine if well interference is verified in accordance with Technical Bulletin No. 23. Generally, well interference will be

verified if it causes the water in a nonregulated well to drop to a level below the pump suction, or it is shown to significantly diminish well performance.

c. If well interference is verified, the settlement procedures in 567—54.7(455B) will be followed. If well interference is not verified, the complaint will be dismissed and any emergency order will be removed. The department will notify the complainant and permittee of its decision regarding the complaint, and either party may appeal pursuant to 54.9(2).

567—54.7(455B) Settlement procedures.

54.7(1) *Settlement options.*

a. At the same time as notification prescribed in 54.6(2) “c” or upon notice to the applicant of verified well interference according to 567—subrule 50.14(2), the department will also advise the permittee or applicant of available settlement options, including the following:

- (1) Permanent permit modifications (e.g., reduced pumping rate or scheduled pumping).
- (2) Compensation to the complainant (see 54.7(3) and Technical Bulletin No. 23).

b. In situations where verified well interference occurs due to an existing permitted use, the permittee shall notify the department of the selected option within 30 days of notification.

54.7(2) *Compensation offer requirements.* If the compensation option is selected, the applicant or permittee shall submit a notarized offer to the complainant and the department. This offer shall be submitted by a permittee within 30 days of the notification prescribed in 54.6(2) and 54.7(1). An offer must include the following:

a. Written comments by a certified well contractor or licensed professional engineer detailing well improvements needed in order to provide the complainant with a sufficient water supply;

b. Itemized costs of the improvements by a certified well contractor with a breakdown of costs eligible for compensation (see 54.7 and Technical Bulletin No. 23);

c. A water quality analysis of the existing well water, if a new well is proposed. The analysis shall include, at minimum, determination of levels of nitrate, bacteria, iron, and hardness; and

d. A statement of what is being offered to the complainant and terms of the offer (e.g., timing, who will perform the work, or a completed work settlement).

54.7(3) *General criteria for cost liability.* The nonregulated well owner's costs for well inspection and test pumping are eligible for compensation. All costs for remedial work necessary to resolve a verified well interference problem are eligible for compensation, except as noted below. Technical Bulletin No. 23 includes additional details on cost liability. The following costs are not eligible for compensation:

a. When the existing well does not comply with applicable well construction standards (~~567—Chapter 49~~), costs required to bring the well up to standards;

b. Costs for work requested by the nonregulated well owner that result in upgrading the nonregulated water supply;

c. Legal fees;

d. Operation and maintenance costs of the water supply system;

e. Well rejuvenation costs, unless the well still fails to provide a sufficient water supply after the well rejuvenation requested by the permittee is completed; and

f. Costs due to temporary loss of water for such things as hauling water or going to a laundromat, unless the permittee refuses to comply with an emergency order by the department.

54.7(4) *Complainant's response to the compensation offer.* The complainant shall respond in writing to the department within 15 days of an offer receipt and indicate acceptance or rejection of the offer. If the offer is rejected, the complainant shall submit a counteroffer with the response. The counteroffer shall contain supporting information including an

itemized cost estimate of needed improvements by a certified well contractor or licensed professional engineer, if appropriate.

54.7(5) *Department review of compensation offer and counteroffer.* The department will review the offer and counteroffer and determine if the offer is reasonable in accordance with Technical Bulletin No. 23.

a. If the offer is determined to be reasonable but is rejected by the complainant, the complainant will be given 15 days to reconsider the offer, after which the complaint will be dismissed and any suspension or restrictions on withdrawals by the permittee will be removed or, in the case of an application, the permit process will be continued. The complainant may appeal a dismissal as provided in 54.9(2).

b. If the offer is not found to be reasonable, the permittee will be given one opportunity to revise the offer in accordance with department determinations. If a revised offer is not received within 15 days or the department determines the revised offer is not reasonable, the department will determine appropriate compensation or withdrawal restrictions to resolve the well interference. This determination will be enforced through either the imposition of permit conditions, permit termination, or permit denial. For an existing permit, the department will modify or terminate the permit as provided in 567—subrule 50.14(1). For a pending permit application, the department will either deny the application or approve it with appropriate conditions, pursuant to 567—50.8(455B).

567—54.8(455B) Recurring complaints.

54.8(1) If a complainant accepts compensation from a permittee for settlement of a well interference conflict, any future complaint by the complainant against the same permittee will not be considered unless either a significant change in the permitted withdrawal occurs; the permittee utilized simplified test pumping procedures or other less than optimal verification methods, as described in Technical Bulletin No. 23; or the permittee provided compensation

to resolve less than the estimated worst-case well interference. A complainant who accepts compensation from an applicant is still eligible for compensation if subsequent well interference is proven to be greater than that resolved in the original settlement.

54.8(2) If a previous complaint was dismissed or settled without compensation, a new complaint must include justification for reconsideration. Justification may include a significant change in withdrawals by the suspect permittee or water level measurements from the complainant's well which indicate more well interference than found in the previous complaint. A physical change to withdrawal facilities may be considered a significant change to a permitted use (e.g., moving the withdrawal location, installing a new well, or installing a higher-capacity pump).

54.8(3) A complaint that was dismissed due to failure to cooperate, as provided in 567—54.3(455B), will be reconsidered when the required cooperation is demonstrated. However, it will be treated as a new complaint.

567—54.9(455B) Waivers and appeals.

54.9(1) *Waiver procedures.* Waivers to these rules may be granted by the department provided just cause can be demonstrated. Waiver requests and supporting information shall be submitted in writing to the department.

54.9(2) *Appeal procedures.* Department determinations under 54.5(5), 54.6(2) and 54.7(4) may be appealed by following the procedure in 561—Chapter 7.

These rules are intended to implement Iowa Code sections 455B.171 and 455B.281.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item (**indicates proposed consent item*)

***21. Chapter 55, “Aquifer Storage and Recovery” – Final Rule**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 55. This rulemaking is the result of the Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 55 regulates aquifer storage and recovery (ASR) wells. The programs in this chapter are intended to allow for the beneficial use of water resources, protect public health and safety, and protect the public interest in water resources. This chapter does this by defining the affected area within the aquifer, creating a permit program with technical criteria for evaluating ASR projects, and incorporating technical additions for the practice of treated water recovery. New Chapter 55 also includes definitions of legal rights and obligations affecting ASR permit holders. This chapter has been reviewed and edited consistent with Executive Order 10.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8619C. Two public hearings were held on February 3 and February 4, 2025

Changes from NOIA: Five persons attended the hearings but no public comments were received. The Final rule is identical to the NOIA.

Effective Date of Final Rule: June 18, 2025

CHAD FIELDS, GEOLOGIST III
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 55 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION [567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 55, “Aquifer Storage and Recovery: Criteria and Conditions for Authorizing Storage, Recovery, and Use of Water,” and adopts a new Chapter 55, “Aquifer Storage and Recovery,” Iowa Administrative Code.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3), 455B.263(8) and 455B.265(4).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.261, 455B.265 and 455B.269.

Purpose and Summary

New Chapter 55 regulates aquifer storage and recovery (ASR) wells. The programs in this chapter are intended to allow for the beneficial use of water resources, protect public health and safety, and protect the public interest in water resources. This chapter does this by defining the affected area within the aquifer, creating a permit program with technical criteria for evaluating ASR projects, and incorporating technical additions for the practice of treated water recovery. New Chapter 55 also includes definitions of legal rights and obligations affecting ASR permit holders. This chapter has been reviewed and edited consistent with Executive Order 10.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8619C**.

Two public hearings were held. The first public hearing was held on February 3, 2025 from 2:00 PM to 3:00 PM virtually via Zoom. The second public hearing was held on February 4, 2025 from 10:00 AM to 11:00 AM virtually via Zoom.

Four people attended the first public hearing but did not submit any comments. One member of the public attended the second public hearing but did not submit a comment. No public comments were received during the public comment period.

This final rule is identical to the Notice of Intended Action.

Adoption of Rulemaking

This rulemaking was adopted by the Environmental Protection Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs was found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its [regular monthly meeting](#) or

at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 55 and adopt the following **new** chapter in lieu thereof:

CHAPTER 55

AQUIFER STORAGE AND RECOVERY

567—55.1(455B) Statutory authority and purpose.

55.1(1) The authority for the Department of Natural Resources to permit persons to inject, store, and recover treated water for potable use is given by Iowa Code sections 455B.261, 455B.265 and 455B.269. This permit requirement applies to any aquifer storage and recovery (ASR) system. An entity seeking an ASR permit must review the permit criteria and contact the department if a permit is required.

55.1(2) The ASR rules are intended to describe aquifer storage and recovery, including defining the affected area within the aquifer, creating a permit program with technical criteria for evaluating ASR projects, incorporating the practice of treated water recovery, and defining legal rights and obligations affecting ASR permit holders.

567—55.2(455B) Definitions. The following definitions apply to this chapter:

“Aquifer storage and recovery” or “ASR” means the injection and storage of treated water in an aquifer through a permitted well during times when treated water is available and withdrawal of the treated water from the same aquifer through the same well during times when treated water is needed.

“Contiguous” means directly adjacent along all or part of one side of a legally defined piece of property. Tracts of land involved in the same water supply and separated only by separators such as roads, railroads, or bike trails are deemed contiguous tracts.

“Displacement zone” means the three-dimensional area of dispersion into which treated water is injected for storage, subject to later recovery.

“Limited registration” means a two-year written authorization for a nonrecurring use of water for the purpose of forecasting and testing an ASR well system, including cyclic test pumping as necessary.

“Mechanical integrity” means any structural or material defect in an ASR well, well casing, or appurtenance that will prevent or materially impair the injection or pumping of water within an aquifer or contribute to aquifer contamination.

“Permit” means a written department authorization issued to a permittee for the storage of treated water in an existing aquifer or the subsequent withdrawal of treated water from an existing aquifer. A permit specifies the quantity, duration, location, and instantaneous rate of this storage or withdrawal.

“Permittee” means a water supply system that obtains a permit authorizing the injection of and possession by storage of treated water in an aquifer, the withdrawal of this water at a later date, and the actual beneficial use of the water.

“Receiving aquifer” means the aquifer into which treated water is injected under the terms of an ASR permit.

“Recovered water” means water that is recovered from storage within a displacement zone under the terms of an ASR permit.

“Stored water” means injected, treated potable water that is stored in a receiving aquifer within the displacement zone under the terms of an ASR permit.

“*Treated water*” means water that has been physically, chemically, or biologically treated to meet national drinking water standards and is fit for human consumption as defined in 567—Chapters 40 through 43.

“*Zone of influence*” means a circular area surrounding a pumping water well where the water table has been measurably lowered due to the action of the pump.

567—55.3(455B) ASR project application processing.

55.3(1) *Applications.*

a. Initial application. An ASR permit shall be required for the storage of all treated water in an aquifer for later recovery for potable uses. An initial ASR permit application (a request for a new permit) shall be made on a form obtained from the department. An application must be submitted by or on behalf of the water system owner, lessee, or option holder of the area where the water is to be stored and recovered.

(1) An application must be accompanied by a map portraying:

1. The points of injection and withdrawal;
2. The immediate vicinity of the receiving aquifer;
3. Any production, test, or other observation wells within the aquifer; and
4. The area of water storage.

(2) An application must include a description of the land where wells are located and water will be injected, withdrawn, and used, oriented as quarter-section, section, township, and range.

(3) One application will be adequate for all uses on contiguous tracts of land.

(4) A PWS construction permit issued pursuant to 567—Chapter 43 is also required for all injection/recovery wells.

b. Limited registration. In response to an initial application, the department will issue a limited registration to initiate an ASR pretesting program pursuant to 55.4(1)“a.” The

department will only issue an ASR permit after approval and completion of an ASR pretesting program, with appropriate public notification pursuant to 55.3(3) and evaluation of the test results.

c. Modification or renewal. An ASR permit modification or renewal request shall be made in a manner similar to an initial application. A modification or renewal request does not need to reiterate map and location information unless the information has changed. The limited registration requirement for aquifer pretesting does not apply to modified or renewed ASR permit requests unless required by the department.

55.3(2) *Application fee.* A nonrefundable fee of \$700 in the form of a credit card, check, electronic payment, or money order made payable to “Iowa Department of Natural Resources” must accompany any ASR permit application, modification request, or renewal request.

55.3(3) *Published notice—limited registration.* Prior to receiving a limited registration, an applicant shall publish a notice of intent to test the injection and water pumpage/recovery equipment. Publication shall be in a manner acceptable to the department and in the newspaper of largest circulation in the county where the ASR project is located. Proof of publication shall be submitted to the department. After the publication, the department will issue a limited registration allowing the applicant to conduct test pumping pursuant to 55.4(1)“a,” and the applicant shall notify contiguous landowners by mail of receipt of the limited registration and the intent to test an ASR site.

55.3(4) *Published notice—departmental notice of proposed decision.* Before issuance of a final ASR permit, the department shall publish notice of proposed decision to issue an ASR permit or deny an ASR application. Publication shall be in the newspaper of largest circulation in the county where the ASR project is located.

a. A notice of proposed decision shall summarize the department's findings on whether an application conforms to relevant criteria as outlined in 55.4(1). An engineering or hydrogeological summary report prepared by the department may be attached to the notice.

b. The notice of proposed decision shall be mailed to the applicant, any person who commented, and any other person who requests a copy of a proposed decision. The notice shall be accompanied by a certification of the mailing date.

c. A proposed decision becomes the final department decision unless a timely notice of appeal is filed in accordance with 55.3(6).

55.3(5) *Department decision.* The department's decision on an application shall be an ASR permit or denial letter. Each ASR permit shall include appropriate standard and special conditions consistent with Iowa Code sections 455B.261 through 455B.274 and 455B.281 and 567—Chapters 50 through 55. The decision may incorporate the summary report described in 55.3(4). Each decision shall include the following:

a. Determinations as to whether the project satisfies all relevant criteria not addressed in an attached summary report;

b. An explanation of each special condition; and

c. An explanation of consideration given to all comments submitted pursuant to subrules 55.3(3) and (4), unless comments are addressed in the attached summary report.

55.3(6) *Appeal of department decision.* Any person aggrieved by an initial ASR permit decision may appeal the action. An appeal request must be submitted in writing to the director within 30 days of the date of issuance of the final department decision. The director's decision on an appeal may be further appealed to the commission. The form of appeal and appeal procedures are governed by 567—Chapter 7. The department shall mail a copy of the notice of appeal to each person who commented on the application.

567—55.4(455B) ASR technical evaluation criteria.

55.4(1) Requirements. Injections into aquifers for the purpose of treated water storage and subsequent withdrawals from the receiving aquifers intended for potable uses shall be subject to the following requirements:

a. Aquifer pretesting.

(1) A limited registration for aquifer pretesting as described in 55.3(1) “b” shall be for the period of two years and may be renewed for two additional one-year periods, for a total cumulative registration time not to exceed four years, should pretesting completion require more than one year.

(2) A limited registration shall allow aquifer pretesting for determining the feasibility of ASR, including placement of pumping and storage/extraction equipment. The pretesting program shall be designed to provide the information to evaluate the ultimate capacity anticipated for the ASR project and provide assurance that the ASR site shall not restrict other uses of the aquifer. The pretesting program shall include injection rates and schedules, water storage volumes, recovery rates and schedule, and a final testing report.

b. Engineering report. An engineering report evaluating the technical feasibility of the proposed water injection and the probable percentage of recovery of treated water when pumped for recovery shall be submitted to the department.

(1) The engineering report shall include preliminary information from conceptual evaluations and aquifer pretesting, such as:

1. Injection rates and schedules;
2. Water storage volumes;
3. The length of time the injected water will be stored;
4. The projected recovery rate;
5. Water quality data necessary to demonstrate that the water meets national drinking water standards;

6. Water level monitoring data, including the location of observation wells, if any;
7. A plan detailing what will be done with the recovered water if the intended use is not possible; and

8. A final testing protocol.

(2) If the report can demonstrate, by field test results or by conceptual or mathematical hydrogeologic modeling, that the injection, storage, and subsequent recovery will not adversely affect nearby users, an ASR project may be permitted after department review.

(3) A displacement zone containing the stored volume of water will not be allowed if it adversely affects another user's zone of influence. If the department finds, through hydrogeologic modeling or during pretesting, that the proposed displacement zone may impact the zone of influence of another user's existing well, additional testing will be required. The department may require the applicant to construct observation wells between the ASR site and nearby wells and may designate project-specific monitoring and reporting requirements at the observation wells.

(4) A hydrogeologic site investigation that evaluates potential quantitative and qualitative impacts to the aquifer, including changes to localized aquifer geochemistry, shall be part of the engineering report. Preliminary hydrogeologic information shall include:

1. The local geology;
2. A hydrogeologic flow model of the area flow patterns;
3. A description of the aquifer targeted for storage;
4. The estimated flow direction and rate of movement;
5. Locations of both permitted and private wells within the area affected by ASR wells, including best estimates of respective zones of influence;
6. A basis for estimating the displacement zone; and
7. Potable water quantity recovery estimates.

c. Protection of nearby existing water uses. An ASR permit applicant shall demonstrate that an ASR site will not restrict other uses of the aquifer by nearby water use permittees.

(1) An applicant shall conduct an inventory of nearby wells and submit it to the department with an ASR permit application. The department, after considering the rate and amount of the ASR injections and withdrawals and the aquifer characteristics, will determine the inventory's extent and the appropriate radius from the proposed ASR site.

(2) An applicant shall make a good-faith effort to obtain information from public records to identify nearby landowners and occupants and information from drilling contractors identified by a landowner or occupant who responds to the inventory.

(3) An applicant shall immediately notify the department of all objections raised by nearby landowners or other on-site problems.

(4) Well interference conflicts arising from the proposed ASR site or project shall be resolved as outlined in 567—Chapter 54 or as otherwise specified by the department.

567—55.5(455B) ASR permits.

55.5(1) *Water use restriction.* Water recovery from an ASR site will not be permitted to any user other than the ASR permittee.

55.5(2) *MCL exceedance limitation.* Contaminant levels in water injected in accordance with an ASR permit shall not exceed the maximum contaminant levels (MCLs) established by the department in 567—Chapters 40 through 43. Chemicals associated with disinfection of the water may be injected into the aquifer up to the standards established under 567—Chapters 40 through 43 or as otherwise specified by the department.

55.5(3) *Reporting and recordkeeping.* Permittees shall maintain a monthly record of injection and recovery, including the total number of hours of injection and recovery and the total metered quantity injected and recovered. These records must be submitted to the department annually.

a. Applicants shall keep project records, including water quality monitoring records, for a period of five years. Water quality monitoring shall be performed at the frequency required by 567—Chapters 40 through 43 and as identified in the system’s PWS operation permit.

b. Applicants shall keep records for a period of three years after ASR project termination and recovery well closure(s).

55.5(4) *Vacating a permit.*

a. The department may vacate an ASR permit if:

(1) An applicant fails to construct injection and water pumpage/recovery and ancillary equipment within three years of permit issuance, or the term of subsequent permit modifications or renewals.

(2) An applicant does not use the storage system within three years of permit acquisition.

b. If a permit is vacated, the permittee must submit a site abandonment plan that includes the physical removal of injection and water recovery equipment and the abandonment of all injection/recovery and observation wells, pursuant to 567—Chapter 39.

c. A permittee whose permit is vacated may request a formal review of the action. The permittee must submit a review request in writing to the director within 30 days of notification of the final department decision. The director’s decision in a formal review case may be further appealed to the commission.

55.5(5) *Mechanical integrity conditions.* Other conditions necessary to ensure adequate protection of water supplies may be imposed in a permit for mechanical integrity checks of the injection and treated water recovery well.

55.5(6) *Permit modification or revocation.* The department may revoke or modify a permit to prevent or mitigate injury to other water users or otherwise protect aquifer water quality. The department may, based upon valid scientific data, further restrict certain chemicals in the injection source water if the department finds the constituents will interfere

with or pose a threat to the maintenance of Iowa's water resources for present or future beneficial uses.

55.5(7) *Permit duration and conditions, permittee property rights, and well restrictions.*

a. Term. ASR permits shall be issued for 20 years.

b. Permit conditions. ASR permits will specify the maximum allowable injection rate at each well, the maximum allowable annual quantitative storage volume, and the maximum allowable instantaneous water withdrawal rate at each well.

c. Permittee property.

(1) The department shall not authorize withdrawals of treated water from an ASR site by anyone other than the permittee while the permit or subsequent renewal permits are in effect.

(2) Stored water and recovered water are the property of the permittee.

(3) If a permit is revoked or otherwise surrendered, the ownership of the injected water within the aquifer (the water considered as "property") reverts to the State of Iowa.

d. Restrictions on wells within displacement zone.

(1) No new private water wells, injection/withdrawal wells, observation wells, or PWS wells shall be permitted by any governmental entity within the ASR displacement zone while an ASR permit is in effect. Existing wells within a permitted displacement zone shall be plugged pursuant to 567—Chapter 39.

(2) ASR permits shall be filed with the appropriate county recorders to provide notice to present and future landowners of all permit conditions or requirements, including the well prohibition condition.

These rules are intended to implement Iowa Code sections 455B.261, 455B.265 and 455B.269.

**Iowa Department of Natural Resources
Environmental Protection Commission**

Decision Item

22. Chapter 60, “Scope of Title, Definitions, Wastewater Construction Permits, and Operation Permits”; Chapter 64, “Wastewater Construction and Operation Permits,” and Chapter 66, “Pesticide Application to Waters” – Final Rules

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 60, and to rescind and reserve Chapters 64 and 66. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: Chapters 60, 64, and 66 were reviewed consistent with Executive Order 10. Consequently, Chapters 64 and 66 are rescinded and merged into new Chapter 60, which establishes the requirements for the pre-construction review and permitting program applicable to new or modified wastewater disposal systems and establishes the requirements for operation permits and National Pollutant Discharge Elimination System (NPDES) permits for certain types of wastewater discharges. The changes remove outdated requirements; shorten, simplify and clarify regulations and terminology; remove redundancy; and reference regulations that appear elsewhere in state or federal law. In addition, this rulemaking adopts an updated version of the rule-referenced Iowa Wastewater Facilities Design Standards.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 11, 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8629C. Two public hearings were held on January 28, 2025 and January 29, 2025.

Changes from NOIA: Twenty-nine people attended the first public hearing, and nineteen people attended the second public hearing. No public comments pertinent to this rulemaking were provided at the hearings. Three comment letters were received during the public comment period. This Final rule is substantially identical to the NOIA. In Chapter 60, a typo was corrected and six changes were made in response to the comments. In the Iowa Wastewater Facilities Design Standards, one change was made in response to the comments.

Effective Date of Final Rule: June 18, 2025

Courtney Cswercko, Environmental Specialist Senior
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapters 60, 64, 66 – Final rules

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 60, “Scope Of Title—Definitions—Forms—Rules of Practice,” adopts a new Chapter 60, “Scope of Title, Definitions, Wastewater Construction Permits, and Operation Permits,” and rescinds and reserves Chapter 64, “Wastewater Construction and Operation Permits,” and Chapter 66, “Pesticide Application to Waters,” and Iowa Administrative Code.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3) and 455B.173(3).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.171, 455B.172, 455B.173 through 455B.175, 455B.177, 455B.183, 455B.184 through 455B.186, 455B.196 through 455B.198 and 455B.199B, Clean Water Act §402(b), and 40 CFR §123.25.

Purpose and Summary

New Chapter 60 establishes the requirements for (1) the pre-construction review and permitting program applicable to new or modified wastewater disposal systems, (2) the National Pollutant Discharge Elimination (NPDES) program, and (3) the state wastewater operating permit program. The Department of Natural Resources (Department) evaluates all wastewater construction permit applications to ensure that proposed treatment facilities will comply with NPDES permit limits or land disposal requirements. NPDES permits regulate the amount of pollutants that can be discharged into waters of the United States from point sources, and state operation permits regulate wastewater disposal to land and water.

This rulemaking is adopted consistent with Executive Order 10. Former Chapters 64 and 66 are rescinded and merged into new Chapter 60. This consolidation removes outdated requirements; shortens, simplifies and clarifies regulations and terminology; removes redundancy; and references regulations that appear elsewhere in state or federal law. A new operation permit exemption is included for nondischarging water treatment plants to remove the redundancy created by another existing permit covering the design of these systems. The rule-referenced documents were similarly reviewed, and as a result, Chapters 11 through 21 of the Iowa Wastewater Facilities Design Standards (IWFDS) have been combined into one document with renumbered chapters.

The revised IWFDS document is available at: <https://www.iowadnr.gov/environmental-protection/water-quality/water-quality-bureau-rulemaking>. The IWFDS has been updated to reflect current practices and technologies, along with a general cleanup of outdated requirements and rule references. The remaining rule-referenced documents and General Permits 1 through 9 (various issuance dates, available at: <https://www.iowadnr.gov/environmental-protection/water-quality/wastewater-permitting-npdes/general-permits>) are not changing.

Old Chapter 66 covered discharges of pesticide residues to waters of the United States. The requirements of this chapter were moved years ago into NPDES General Permit No. 7 (available at: <https://www.iowadnr.gov/environmental-protection/water-quality/wastewater-permitting-npdes/general-permits/gp7-pesticides>). Accordingly, consistent with Executive Order 10, a portion of the text from Chapter 66 has been moved into the new Chapter 60, and this chapter is rescinded.

Public Comment and Changes to Rulemaking

Notice of Intended Action (NOIA) for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8629C**.

Two public hearings were held. The first public hearing was held on January 28, 2025 from 1:00 AM to 2:00 PM virtually via Google meet. The second public hearing was held on January 29, 2025 from 1:00 AM to 2:00 PM virtually via Google meet.

Twenty-nine people attended the first public hearing, and nineteen people attended the second public hearing. No public comments pertinent to this rulemaking were provided at the hearings. Three comment letters were received during the public comment period.

This final rule is substantially identical to the NOIA. In Chapter 60, a typo in the separation distances for private wells in Table I was fixed. Six changes were made to Chapter 60 in response to comments. The definition of “domestic sewage” from the old version of Chapter 69 was inserted, as it was mistakenly omitted in the NOIA. Existing text from the prior version of Chapter 60 regarding permittee consent was re-inserted into the “minor permit amendment” definition. Unnecessary definition citations were removed from 60.3(1). The language in superscript #9 in Table 1 specifying a separation distance exemption between private wells and industries was clarified to prevent confusion; the actual separation distance exemption (200 ft instead of 400 ft) was not changed. A sentence was added to clarify that 60.3(3) for indirect dischargers does not apply to industries in pretreatment cities. Existing Iowa-specific text from the prior version of Chapter 60 regarding permit compliance that was erroneously struck in the NOIA was re-inserted into 60.4(3). In the rule-referenced Iowa Wastewater Facilities Design Standards, subsection 8C.2.6 was removed in response to a comment, as the text was ambiguous and unnecessary.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 60 and adopt the following **new** chapter in lieu thereof:

TITLE IV

WASTEWATER TREATMENT AND DISPOSAL

CHAPTER 60

SCOPE OF TITLE, DEFINITIONS, WASTEWATER CONSTRUCTION

PERMITS, AND OPERATION PERMITS

567—60.1(455B) Scope of title and definitions.

60.1(1) *Scope of title.* The department has jurisdiction over the surface water and groundwater of the state to prevent, abate and control water pollution by establishing standards for water quality and for direct or indirect discharges of wastewater to waters of the

state and by regulating potential sources of water pollution through a system of general rules or specific permits. The construction and operation of any wastewater disposal system (DS) and the discharge of any pollutant to a water of the state require a specific permit from the department unless exempted by the department. This chapter provides general definitions applicable in this title, including 567—Chapters 61 through 69.

60.1(2) Definitions. The following definitions apply to this title, unless otherwise specified in a chapter of this title:

“7Q10” or *“seven-day, ten-year low stream flow”* means the lowest average stream flow that would statistically occur for seven consecutive days once every ten years.

“Acute toxicity” means that level of pollutants that would rapidly induce a severe and unacceptable impact on organisms.

“ADW flow” or *“average dry weather flow”* means the daily average flow when the groundwater is at or near normal and runoff is not occurring.

“Aquatic pesticide” means any pesticide, as defined in Iowa Code section 206.2, that is labeled for application to surface water.

“ASTM” means the Annual Book of Standards, Section 11, Water and Environmental Technology, published by ASTM International, www.astm.org.

“Average” means the sum of the total daily discharges by weight, volume or concentration during the reporting period divided by the number of days during the reporting period when the measurements were made.

“AWW flow” or *“average wet weather flow”* means the daily average flow for the wettest 30 consecutive days for mechanical plants or for the wettest 180 consecutive days for controlled discharge lagoons.

“BMP” or *“best management practice”* means a practice or combination of practices that is determined, after problem assessment, examination of alternative practices, and appropriate

public participation, to be the most effective, practicable (including technological, economic and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals.

“*BOD₅*” or “*biochemical oxygen demand (five-day)*” means the amount of oxygen consumed in the biological processes that break down organic matter in water by aerobic biochemical action in five days at 20°C.

“*Bypass*” means the diversion of waste streams from any portion of a treatment facility or collection system. A bypass does not include internal operational waste stream diversions that are part of the design of the treatment facility, maintenance diversions where redundancy is provided, diversions of wastewater from one point in a collection system to another point in a collection system, or wastewater backups into buildings that are caused in the building lateral or private sewer line.

“*CBOD₅*” or “*carbonaceous biochemical oxygen demand (five-day)*” means the amount of oxygen consumed in the biological processes that break down carbonaceous organic matter in water by aerobic biochemical action in five days at 20°C.

“*CFR*” or “*Code of Federal Regulations*” means the federal administrative rules adopted by the United States in effect as of July 1, 2024. The amendment of the date contained in this definition shall constitute the amendment of all CFR references contained in 567—Chapters 60 through 69, Title IV, unless a date of adoption is set forth in a specific rule.

“*Chronic toxicity*” means that level of pollutants that would, over long durations or recurring exposure, cause a continuous, adverse or unacceptable response in organisms.

“*Compliance schedule*” means “schedule of compliance” as defined in Iowa Code section 455B.171.

“Construction permit” means a written approval from the director to construct a wastewater DS or part thereof in accordance with the plans and specifications approved by the department.

“Crossover point” means that location in a river or stream in which the flow shifts from being principally along one bank to the opposite bank. This crossover point usually occurs within two curves or an S-shaped curve of a water course.

“Culture water” means reconstituted water or other acceptable water used for culturing test organisms.

“CWA” or *“Clean Water Act”* means the federal Water Pollution Control Act effective July 1, 2024, 33 U.S.C. §1251 et seq.

“Diluted effluent sample” means a sample of effluent diluted with culture water at the same ratio as the dry weather design flow to the applicable receiving stream flow contained in the zone of initial dilution as allowed in 567—paragraphs 61.2(4) “b,” “c,” and “d.”

“Dilution ratio” means, for a specific wastewater discharger, the ratio of the seven-day, ten-year low stream flow to the effluent design flow (e.g., a dilution ratio of 2:1 has two parts stream flow to one part effluent flow).

“Discharge of a pollutant” means any addition of any pollutant or combination of pollutants to navigable waters or waters of the state from any point source. “Discharge of a pollutant” includes additions of pollutants into navigable waters or waters of the state from surface runoff that is collected or channeled by human activity; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person that do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. “Discharge of a pollutant” does not include an addition of pollutants by any indirect discharger.

“Domestic sewage” or *“domestic wastewater”* means the water-carried waste products from residences, public buildings, institutions, or other buildings, including bodily discharges from human beings together with groundwater infiltration and surface water as may be present.

“GP” or *“general permit”* means an NPDES permit issued to a class of facilities that could be conditioned and described by a single permit.

“Human health (HH) criteria” means that level of pollution that, in the case of noncarcinogens, prevents adverse health effects in humans and, in the case of carcinogens, represents a level of incremental cancer risk of 1 in 100,000. The numerical criteria are based on the human consumption of an average of 6.5 grams of fish and shellfish per day by a 70-kilogram individual for a life span of 70 years.

“Individual nonstormwater permit” means a site-specific NPDES or operation permit that is not an individual stormwater permit and that authorizes discharges of sewage, industrial waste, or other waste and allowable discharges of stormwater associated with industrial activity, as specifically noted in the permit.

“Individual stormwater permit” means an individual site-specific NPDES permit that authorizes discharges composed entirely of stormwater associated with industrial activity or construction activity and other allowable nonstormwater discharges as specifically noted in the permit.

“Intermittent watercourses” means watercourses that contain flow associated with rainfall/runoff events and that periodically go dry even in pooled areas.

“Lake” means a natural or man-made impoundment of water with more than one acre of water surface area at the high water level.

“Local public works department” means a city or county public works department, a board of trustees of a city utility organized pursuant to Iowa Code chapter 388, or a sanitary sewer district organized pursuant to Iowa Code chapter 358.

“Losing streams” means streams that lose 30 percent or more of their flow during the seven-day, ten-year low stream flow periods to cracks and crevices of rock formations, sand and gravel deposits, or sinkholes in the streambed.

“Low permeability” means a soil layer of well-sorted, fine grain-sized sediments or of rock that under normal hydrostatic pressures would not be significantly permeable. Low permeability soils may include homogeneous clays below the zone of weathering, mudstone, claystone, shale, and some glacial till.

“Major” for municipalities, means a facility having an average wet weather design flow of 1.0 million gallons per day (MGD) or greater. For industries, “major” means a facility that is designated by EPA as a major industry.

“Major permit amendment” means a permit amendment that is not a minor permit amendment as defined in this rule.

“mg/L” or *“milligrams per liter”* means milligrams of solute per liter of solution (equivalent to parts per million-assuming unit density). A microgram (µg) is 1/1,000 of a milligram.

“Minimum flow” means that established stream flow in lieu of the seven-day, ten-year low stream flow to which the provisions of 567—Chapter 61 apply.

“Minor” means all remaining facilities that have wastewater discharge flows and that are not designated as major facilities.

“Minor permit amendment” means a permit amendment made with the consent of a permittee that occurs as a result of any of the following:

1. Correction of a typographical error;

2. Modification of the monitoring and reporting requirements in the permit to include more frequent monitoring or reporting;

3. Revision of an interim date in a compliance schedule, provided that the new date is not more than 120 days after the date specified in the permit and does not interfere with the attainment of the final compliance date;

4. Revision of interim or final dates in a schedule to comply with the provisions of the Iowa Nutrient Reduction Strategy;

5. Change in facility name or ownership;

6. Deletion of a point source outfall that does not result in the discharge of pollutants from other outfalls; or

7. Incorporation of an approved local pretreatment program.

“Mixing zone” means a delineated portion of a stream or river in which wastewater discharges will be allowed to combine and disperse into the water body. The chronic criteria of 567—subrule 61.3(3) will apply at the boundary of this zone.

“Mortality” means, for the purpose of a WET test, death, immobilization, or serious incapacitation of the test organisms.

“MWW flow” or *“maximum wet weather flow”* means the total maximum flow received during any 24-hour period when the groundwater is high and runoff is occurring.

“Nephelometric” means the nephelometric method of determining turbidity as stated in 40 CFR Part 136.

“Nonpoint source” means a source of pollutants that is not a point source.

“NPDES permit” means an operation permit issued under an EPA-approved National Pollutant Discharge Elimination System (NPDES) program.

“Operation permit” means a permit by the director authorizing the operation of a wastewater DS or part thereof or discharge source and, if applicable, the discharge of wastes

from the DS or part thereof or discharge source to waters of the state. An NPDES permit will constitute the operation permit in cases where there is a discharge to a WOTUS and an NPDES permit is required by the CWA.

“Pass through” means a discharge that, alone or in conjunction with a discharge or discharges entering the treatment facility from other sources, exits a POTW or semipublic sewage DS in quantities or concentrations that cause a violation of any requirement of the treatment facility’s NPDES permit, including an increase in the magnitude or duration of a violation.

“Pathogen” means any microorganism or virus that can cause disease.

“PE” or *“population equivalent”* means the calculated number of people who would contribute an equivalent amount of biochemical oxygen demand (BOD) per day as the system in question, assuming that each person contributes 0.167 pounds of five-day, 20°C, BOD per day.

“Permit rationale” means a document that sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing a draft NPDES permit.

“pH” means the hydrogen ion activity of a solution expressed as the logarithm of the reciprocal of the hydrogen ion concentration in moles per liter at 25°C. pH is a measure of the relative acidity or alkalinity of the solution. The range extends from 0 to 14; 7 being neutral, 0 to 7 being acidic, and 7 to 14 being alkaline.

“Pond” means a natural or man-made impoundment of water with a water surface area of one acre or less at the high water level.

“POTW” or *“publicly owned treatment works”* means any device or system used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature that is owned by a municipality or other public body created by or under Iowa

law and having jurisdiction over disposal of sewage, industrial wastes or other wastes. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW.

“Primary contact” means any recreational or other water use in which there is direct human contact with the water involving considerable risk of ingestion of water or contact with sensitive body organs, such as the eyes, ears and nose, in quantities sufficient to pose a significant health hazard.

“Qualified volunteer” means a person or group of people acting on their own behalf, and not for a government agency or under contract with the department, to produce water quality monitoring data in accordance with a department-approved volunteer monitoring plan. Qualified volunteers must have the training and experience to ensure quality assurance and quality control for the data being produced or be under the direct supervision of a person having such qualifications. A person or persons identified as participants in a department-approved volunteer monitoring plan will be considered qualified volunteers.

“Operation records” means department report forms or other report forms, letters, or documents that may be acceptable to the department that are designed to indicate specific physical, chemical, or biological values for wastewater during a stated period of time.

“Secondary contact” means any recreational or other water use in which contact with the water is either incidental or accidental and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing, commercial and recreational boating and any limited contact incidental to shoreline activity. This would include users who do not swim or float in the water body while on a boating activity.

“Sinkhole” means any depression caused by the dissolution or collapse of subterranean materials in a carbonate formation or in gypsum or rock salt deposits through which water may be drained or lost to the local groundwater system. Such depressions may or may not be open to the surface at times. Intermittently, sinkholes may hold water forming a pond.

“Temperature” means a measure of the heat content of water.

“Turbidity” is a measure of the optical property of the particles of mud, clay, silt, finely divided organic matter, or microscopic organisms suspended in water that interfere with light transmission, causing the light to be scattered and absorbed rather than transmitted through the water in straight lines.

“Water contact recreational canoeing” means the type of activities associated with canoeing outings in which primary contact with the water does occur. This would include users who swim or float in the water body while on a canoeing outing.

“WET test” or *“whole effluent toxicity test”* means a test to determine the toxicity of a chemical or chemicals contained in a wastewater discharge on living organisms.

“WQS” or *“water quality standards”* means the water quality standards as enumerated in 567—Chapter 61.

“ZID” or *“zone of initial dilution”* means a delineated portion of a mixing zone in which wastewater discharges will be allowed to rapidly combine and begin dispersing into the water body. The acute criteria of 567—subrule 61.3(3) will apply at the boundary of this zone.

60.1(3) *Definitions in Iowa Code and the Iowa Administrative Code (IAC).* The following terms applicable to this title are defined in the referenced locations:

- a. Iowa Code section 455B.101: “department.”
- b. Iowa Code section 455B.171: “disposal system,” “effluent standard,” “industrial waste,” “other waste,” “point source,” “pollutant,” “schedule of compliance,” “semipublic sewage disposal system,” “septage,” “sewage,” “sewage sludge,” “treatment works,” and “water of the state.”
- c. Iowa Code section 455B.171 and rule 567—69.1(455B): “PSDS” or “private sewage disposal system.”
- d. Iowa Code section 455B.171(16) and in 40 CFR §403.3(m): “new source.”

e. Iowa Code section 206.2: “pesticide.”

f. Rule 567—40.2(455B): “deep well” and “shallow well.”

60.1(4) *CFR definitions.* The following terms applicable to this title are defined in the referenced locations:

a. 40 CFR §121.1(j): “water quality requirements.”

b. 40 CFR §122.2: “CSO” or “combined sewer overflow,” “CSS” or “combined sewer system,” “daily discharge,” “indirect discharger,” “maximum daily discharge limitation,” “new discharger,” “regional administrator,” “sewage from vessels,” and “waters of the U.S.,” or “waters of the United States.”

c. 40 CFR §122.26(b): “small MS4” or “small municipal separate storm sewer system,” “stormwater,” “stormwater discharge associated with industrial activity,” “stormwater discharge associated with small construction activity,” and “uncontrolled sanitary landfill.”

d. 40 CFR §122.41(m): “severe property damage.”

e. 40 CFR §133.101: “7-day average” and “30-day average.”

f. 40 CFR §401.11(l): “navigable waters.”

g. 40 CFR §403.3: “approved POTW pretreatment program,” “interference,” “non-significant categorical industrial user,” “pretreatment,” “pretreatment requirements,” “pretreatment standard” or “national pretreatment standard,” and “significant industrial user.”

60.1(5) *Abbreviations.* In addition to the abbreviations listed in the definitions in 60.1(2), the following abbreviations are applicable to this title.

<u>Abbreviation</u>	<u>Meaning</u>
°C	degrees Celsius
AASHTO	American Association of State Highway and Transportation Officials
AICP	alternatives implementation compliance plan
ANSI	American National Standards Institute
BLM	Biotic Ligand Model

CCC	Criterion Continuous Concentration
CEU	continuing education units
CMC	Criterion Maximum Concentration
Corps	United States Corps of Engineers
DC	disadvantaged community
DCA	disadvantaged community analysis
DCM	disadvantaged community matrix
DS	disposal system
DUC	disadvantaged unsewered community
DUCA	disadvantaged unsewered community analysis
DUCM	disadvantaged unsewered community matrix
<i>E. coli</i>	<i>Escherichia coli</i>
ELS	early life stage
EPA	U.S. Environmental Protection Agency
EPS	expanded polystyrene
F & W	fish and water
FCP	future compliance plan
FO	regional Field Office of the department (1, 2, 3, 4, 5, or 6)
ft	foot
ft ²	square feet
gal	gallon
gal/ft ²	gallons per square foot
gal/ft ² /day	gallons per square foot per day
gpd	gallons per day
hr	hour
I/I	infiltration and inflow
IAC	Iowa Administrative Code
IAPMO	International Association of Plumbing and Mechanical Officials
Iowa DOT	Iowa Department of Transportation
IWFDS	Iowa Wastewater Facilities Design Standards

kg	kilogram
MCL	maximum contaminant level
mg	milligram
µg/L	micrograms per liter
mgd	million gallons per day
mL	milliliter
MHI	median household income
mm	millimeter
MPN	most probable number
mt	metric tons
NH3-N	ammonia nitrogen
NOAA	National Oceanic and Atmospheric Administration
NOD	notice of discontinuation
NOI	notice of intent
NSF	National Sanitation Foundation
NSCIU	non-significant categorical industrial user
O&M	operation and maintenance
OIW	outstanding Iowa waters
ONRW	outstanding national resource waters
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PFRP	processes to further reduce pathogens
PGP	pesticides general permit
PN	public notice
POA	plan of action
psi	pound per square inch
PSRP	processes to significantly reduce pathogens
SD	separation distance
SDMP	septage disposal management plan
SIU	significant industrial user

sp.	species
SS	suspended solids (the pollutant parameter total suspended solids)
SWESI	substantial and widespread economic and social impact
TA	treatment agreement
TAPC	total annual project costs
TKN	total kjeldahl nitrogen
Tm	terameter
TMDL	total maximum daily load
TOT	time of transfer
TRC	total residual chlorine
TRE	toxicity reduction evaluation
TSS	total suspended solids
U.S.	United States
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
VAR	vector attraction reduction
WER	water-effect ratio
WLA	wasteload allocation
WLAP	Iowa Wasteload Allocation Procedure
WOTUS	waters of the U.S.
WQBEL	water quality-based effluent limit

567—60.2(455B) Construction permits.

60.2(1) *Construction permit requirement.*

a. No person shall construct, install or modify any wastewater DS or part thereof or extension or addition thereto without, or contrary to any condition of, a construction permit issued by the director or by a local public works department authorized to issue such permits under Iowa Code section 455B.183, nor shall any connection to a sewer extension in violation of any special limitation specified in a construction permit pursuant to 60.2(4) be allowed by any person subject to the conditions of the permit.

b. Exemptions to the requirement to obtain a construction permit are listed in the Iowa Wastewater Facilities Design Standards, effective June 18, 2025, located on the department's website; hereafter referred to as the IWFDs.

60.2(2) *Construction sites.*

a. The site for each new wastewater treatment plant, plant expansion, or upgrade of existing facilities must be inspected and approved by the department prior to submission of plans and specifications. Site survey applications must be submitted in accordance with this rule.

b. Site approval under this subrule shall be based on the criteria contained in:

(1) The IWFDs;

(2) The Recommended Standards for Wastewater Facilities, 2014 Edition, a report of the Great Lakes - Upper Mississippi Board of State and Provincial Public Health and Environmental Managers, available on their website at: www.health.state.mn.us/communities/environment/water/tenstates/standards.html; hereafter referred to as the Ten States Standards;

(3) Applicable federal guidelines and standards; and

(4) Other design documents, including standard textbooks, current technical literature and applicable safety standards.

c. The minimum separation distances for PSDS, onsite treatment systems, building sewer service lines and laterals, wastewater treatment works, sewage sludge, septage, and land application wetted disposal areas are as listed below in Table I. Additional separation distances for gravity sanitary sewers, sanitary sewer force mains, storm sewers, drains, and other conveyances are provided in Table A of ~~567—~~paragraph 43.3(7) “d” and for PSDS in ~~567—Chapter 69~~, and specific narrative separation distances for conveyances are provided in ~~567—subparagraphs~~ 43.3(2) “a”(3) and (4). Sewage sludge, septage, and domestic or

industrial wastewater shall be land applied in accordance with 567—Chapter 67, 567—Chapter 68, and the IWFDS, respectively.

Table I: Wastewater Separation Distances

Structure or Source of Contamination	Required Minimum Lateral Distance, as Measured Horizontally on the Ground Surface, in feet							
	PSDS and Onsite Treatment Systems ¹		Building Sewer Service Lines and Laterals ²	Wastewater Treatment Works ³		Land Application		
	Closed Portion	Open Portion		Lagoons ⁴	Mechanical ⁵	Sewage Sludge	Septage	Domestic or Industrial Wastewater, Wetted Disposal Area ⁶
WELLS:								
Public wells:								
Public water supply well - deep ⁷	100	200	25: Water main 75: Standard sanitary sewer	400	200	200	500	200
Public water supply well - shallow ⁷	200	400	25: Water main 75: Standard sanitary sewer	1000	400	200	500	400
Below-ground level finished water storage facility	50		25: Water main 75: Standard sanitary sewer	50	50	50	50	
New or existing private well - deep or shallow	50	100	10	400 ^{8,9}		200	500	
WASTEWATER DISPOSAL SYSTEMS:								
Other PSDSs and onsite treatment systems – open or closed portions ¹⁰	5 ¹⁰	10 ¹⁰						
WATERBODIES:								
Flowing streams or ponds	25					35 ¹¹	35 ¹¹	300
Lakes or reservoirs	50	100		400		35 ¹¹	35 ¹¹	300
Wetlands or drainage channels ¹²						35 ¹¹	35 ¹¹	300
MISCELLANEOUS:								
Inhabitable residences, other inhabitable structures, or commercial buildings	10 ¹³			1000 ^{14,15,16}	1000 ^{13,15}	200	750 ¹⁷	300
Public use areas (not including roads or highways)				Anaerobic lagoons only ¹⁶				300
GHEX loop boreholes ¹⁸	50	100						
Roadside ditches	10							
Road rights-of-way				25 ²⁰				
Property lines	10 ¹⁹			25 ²⁰				
Suction water lines	50	100						
Water lines continually under pressure, foundation drains, or subsurface tiles ²¹	10							

¹PSDS (private sewage disposal system) is defined in 567—subrule 69.1(2). For the purposes of this table, “onsite treatment system” includes any wastewater treatment system not included in the definition of a PSDS (i.e., provides treatment or disposal of domestic sewage from more than four dwelling units or 16 or more individuals on a continuing basis) that is utilizing wastewater treatment technologies described in 567—Chapter 69 to treat domestic waste. Closed portion refers to the part of a treatment system that is fully contained and does not allow effluent or pretreated effluent to enter soil or groundwater (e.g., septic tank or impervious vault toilet). Open portion refers to the part of a treatment system that allows

effluent or pretreated effluent to discharge into soil or groundwater for treatment or disposal (e.g., soil absorption system or unlined ISSF system). These SDs also apply to onsite treatment systems that are not considered privately owned.

²The SDs for building sewer service lines and laterals shall be considered minimum distances when constructing sewer lines, and shall be increased where possible to provide better protection. “Water main” and “standard sanitary sewer” are the type of materials or pipe used to construct the specified type of sewer, in accordance with 567—subrule 43.3(2) and Section 2.4 of the IWFDS.

³For the purposes of this table, “wastewater treatment works” includes lagoons as specified in superscript 4 and mechanical treatment works as specified in superscript 5. When the SDs for wastewater treatment systems and structures other than wells cannot be maintained for the expansion, upgrading, or replacement of existing facilities, the SDs shall be maintained at no less than 90 percent of the existing distance on the site, providing no data is available indicating that a problem has existed or will be created. The wastewater treatment works SDs shall not apply to control buildings, including but not limited to laboratories, offices, and toilet or shower rooms.

⁴The term “lagoons” includes aerated lagoon systems, advanced aerated lagoon systems, and waste stabilization lagoons, as defined in 567—subrule 81.1(1), and holding ponds, equalization basins, and sludge digestion or holding tanks, as described in the IWFDS. The term does not include lagoons used to dispose of water treatment plant wastes and anaerobic lagoons used for animal wastes (as noted in superscript 8). The SD from lagoons shall be measured from the water surface.

⁵The term “mechanical” includes activated sludge systems and fixed film biological treatment systems, as defined in 567—subrule 81.1(1), and any other wastewater disposal system that is not a PSDS, an onsite treatment system, or a lagoon. The mechanical wastewater treatment plant SDs are recommended for pumping stations at sites remote from new or expanded wastewater treatment facilities. All pumping stations shall be off the traffic ways of streets and alleys.

⁶The wetted disposal area is the land and area that is normally wetted by wastewater application. The wetted disposal area shall be established at least 50 feet inside the property line on all sides of the land application site. Distances may be reduced depending upon the extent of pretreatment and operational techniques.

⁷Deep and shallow wells are defined in 567—subrule 40.2(1).

⁸The SD between a private well and an anaerobic lagoon, earthen manure slurry storage basin, earthen manure storage basin, or runoff control basin shall be 1,000 feet. If an applicant for a private well construction permit demonstrates through percolation testing that the seepage loss through the lagoon or basin does not exceed 1/16 inch/day (0.0625 inch/day), the SD shall be 400 feet. The percolation test shall meet the requirements of ASTM D1587/D1587M-15 and 567—subrule 65.15(11).

⁹The SD between an existing, nonpotable, deep or shallow private well and an industrial treatment works may be reduced from 400 feet to 200 feet to accommodate the expansion of an existing industrial treatment works, provided the well and the treatment works share the same ownership.

¹⁰Required distance between a new PSDS and an existing other type of PSDS.

¹¹If sewage sludge or septage is land applied within 200 feet upgradient of a stream, lake, sinkhole, or tile line surface intake, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application unless otherwise approved by the department.

¹²Includes drainage channels that may have a direct connection to the groundwater table or a surface water.

¹³If an onsite treatment system (as described in superscript 1) has a design AWW flow of greater than 1,500 gpd and less than or equal to 5,000 gpd, the SD between an inhabitable residence, other inhabitable structure, or commercial building and the onsite treatment system shall be 100 feet.

¹⁴The SDs between an inhabitable residence, other inhabitable structure, or commercial building and the types of lagoons specified in this superscript shall apply as indicated. If a flow equalization basin is covered and at a site that is remote from new or expanded wastewater treatment facilities, the SD may be reduced to 300 feet at the department's discretion. If the top of a remote flow equalization basin is underneath the surface of the earth, the 1,000-foot SD is recommended but not required, and the minimum SD is 100 feet. If a wastewater treatment lagoon is used solely for the retention or storage of the industrial waste from a boiler or cooling tower blow down facility and its sole use is filed with the county recorder for abstract of title purposes, the 1,000-foot distance is recommended but not required, and the minimum SD is 100 feet.

¹⁵If the inhabitable structure or commercial building is the property of the owner of the proposed lagoon or mechanical treatment facility, or there is written agreement with the owner of the building, the 1,000-foot distance shall not apply. Any such written agreement shall be submitted to the department and filed with the county recorder for abstract of title purposes, and a copy submitted to the department.

¹⁶See 60.2(2) "d" for specific anaerobic lagoon SDs.

¹⁷Septage shall not be applied within 750 feet of an occupied residence, except for the residence of the owner of the septic tank that was pumped or the residence of the licensed commercial septic tank cleaner.

¹⁸GHEX loop boreholes are defined in 567—subrule 49.2(1).

¹⁹The 10-foot distance between a PSDS and property lines applies unless a mutual easement is signed and recorded by both parties.

²⁰An SD of at least 300 feet between a wastewater treatment works and property lines or rights-of-way is recommended where treatment works may be expanded in the future.

²¹“Foundation drain” is defined in 567—subrule 69.1(2).

d. For anaerobic lagoons used in connection with industrial wastewater treatment or pretreatment, the following SDs shall apply between the anaerobic lagoon and the nearest inhabitable residence, other inhabitable structure, or commercial building not owned by the owner of the lagoon, or from a public use area other than a public road. These SDs do not apply to controlled discharge or aerated facultative lagoon systems.

(1) Where the average rated flow is 100,000 gpd or less, the SD shall be at least 1,250 feet.

(2) Where the average rated flow is greater than 100,000 gpd, the SD shall be at least 1,875 feet.

(3) A person may build or expand an anaerobic lagoon closer to an inhabitable residence, other inhabitable structure, or commercial building not owned by the owner of the anaerobic lagoon, or to a public use area other than a public road, if the affected landowners sign a written agreement with the anaerobic lagoon owner to waive the SDs under such terms the parties negotiate. Any such agreement shall be submitted to the department and filed with the county recorder for abstract of title purposes.

(4) When the SDs in this subparagraph cannot be maintained for the expansion, upgrade, or replacement of existing anaerobic lagoon facilities, the SD may be reduced to 1,000 feet provided all of the following criteria are met:

1. The anaerobic lagoon will be completely covered and provided with approved off gas treatment throughout its entire operation life;

2. An operation and maintenance manual shall be prepared and submitted to the department in accordance with the IWFDS; and

3. No data are available indicating that a problem has existed or will be created.

60.2(3) *Construction permit applications—general.*

a. General. All applications for a construction permit required under this rule shall be made in accordance with the requirements in the IWFDS and on forms provided by the department. The applicant will be promptly notified if the application is incomplete or improperly filled out, and an application will not be reviewed until it is complete. A construction permit will be denied when the application does not meet all requirements for permit issuance. For a system with permits conditioned by limitations on additional loads under 60.2(4), construction permit applications must be accompanied by an accounting of connections and additional loading since the time the initial conditioned permit was issued.

b. Submission date. Applications for a construction permit must be submitted to the director at least 120 days in advance of the construction start date.

c. Site surveys.

(1) For new or expanded wastewater treatment facilities, an application for a site survey must be submitted by the applicant's engineer in advance of a full application for construction permit. An applicant should allow 60 days from the submission date of the site survey application for preliminary approvals.

(2) A site survey application must include the following minimum information:

1. A preliminary engineering report or a cover letter that contains a brief description of the proposed treatment process and assurance that the project is in conformance with the long-range planning of the area.

2. The general information, treatment project site selection, and treatment project design data portions of the construction permit application forms, as provided by the department.

(3) If a site survey application is incomplete, it will be returned to the engineer for completion. When a site survey application is complete, it will be reviewed as follows:

1. If the data submitted indicates on its face that the site would be unsuitable for its intended purpose, a letter of rejection will be sent to the applicant and the engineer. Clarifications and additional data may be requested of the applicant and the engineer.

2. If the data submitted indicates on its face that the site may be suitable, a site survey will be conducted by department staff.

d. Fee. A single construction permit application fee of \$100 as specified in Iowa Code section 455B.197(2) is due at the time of construction permit application submission.

e. Director action. The director shall act upon the application within 60 days of receipt of a complete application by either issuing a construction permit or denying the construction permit in writing unless a longer review period is necessary and the applicant is so notified in writing.

f. Modification after construction permit issuance. Applicants seeking a modification to plans and specifications after having been issued a construction permit shall submit an addendum to plans and specifications, a change order, or revised plans and specifications, along with the reasons for the proposed changes, to the department. A supplemental written permit or approval will be issued when the changes submitted by the applicant meet department requirements. Construction shall not proceed until such changes have been approved.

60.2(4) *Sanitary sewer extension construction permit applications.* Applications for sanitary sewer extension construction permits shall conform to the IWFDS. If a sanitary sewer extension construction permit application does not provide sufficient information to grant or deny a sewer system construction permit, additional information may be requested and evaluated. Sanitary sewer extension approval shall be subject to the following:

a. A sanitary sewer extension construction permit may be denied if, at the time of application, the treatment facility treating wastewater from the proposed sewer is not in

substantial compliance with its operating permit or if the treatment facility receives wastes in volumes or quantities that exceed its design capacity and interfere with its operation or performance. If the applicant is operating under a compliance schedule that is being adhered to and that will lead to resolution of the substantial compliance issues, or if the applicant can demonstrate that the problem has been identified, the planning completed, and corrective measures initiated, then the construction permit may be granted.

b. A sanitary sewer extension construction permit may be denied if bypassing has occurred at the treatment facility, except when any of the following conditions are being met:

(1) The bypassing is due to a combined sewer system, and the facility is in compliance with a department-approved long-term CSO control plan;

(2) The bypassing occurs as a result of a storm with an intensity or duration greater than that of a storm with a return period of five years, according to the NOAA Atlas 14 Point Precipitation Frequency Estimates; or

(3) The department determines that timely actions are being taken to eliminate the bypassing.

c. A sanitary sewer extension construction permit may be denied if an existing downstream sewer is or will be overloaded or surcharged, resulting in bypassing, flooded basements, or overflowing manholes, unless:

(1) The bypassing or flooding is the result of a precipitation event with an intensity or duration greater than that of a storm with a return period of two years, according to the NOAA Atlas 14 Point Precipitation Frequency Estimates; or

(2) The system is under full-scale facility planning and the applicant provides a schedule that is approved by the department for rehabilitating the system to the extent necessary to handle the additional loadings.

60.2(5) *Application review.*

a. Review of construction permit applications shall be based on the criteria listed in 60.2(2)“b” and on the Iowa Antidegradation Implementation Procedure, incorporated by reference in 60.7(2)“d”(4). In any conflict between the criteria, the IWFDS shall prevail.

b. *IWFDS waivers.* Requests for waivers from the IWFDS shall be submitted and reviewed in accordance with 561—Chapter 10.

60.2(6) *Commencing construction.* Notwithstanding the 120-day requirement in 60.2(3)“b,” construction of the approved system may commence immediately after the issuance of a construction permit.

60.2(7) *Expiration.* The construction permit shall expire if construction thereunder is not commenced within one year of the date of issuance thereof. The director may grant an extension of time to commence construction if it is necessary or justified, upon showing of such necessity or justification to the director.

60.2(8) *Modification or revocation.* The director may modify or revoke a construction permit for cause, including but not limited to the following:

a. Failure to construct said wastewater DS or part thereof in accordance with the approved plans and specifications;

b. Violation of any term or condition of the permit;

c. Obtaining a permit by misrepresentation of facts or failure to disclose fully all material facts; or

d. Any change during construction that requires material changes in the approved plans and specifications.

60.2(9) *Certification of completion.* Within 30 days after completion of construction, installation or modification of any wastewater DS or part thereof or extension or addition thereto, the construction permit holder shall submit a certification by a registered professional

engineer that the project was completed in accordance with the approved plans and specifications.

567—60.3(455B) Operation permits.

60.3(1) *Operation permit requirement.* Except as otherwise provided in this subrule, in 567—Chapter 65, and in 567—Chapter 69, no person shall operate any wastewater DS or part thereof without, or contrary to any condition of, an operation permit issued by the director.

An operation permit is not required for the following:

a. A PSDS that does not discharge into, or have the potential to reach, a designated water of the state or subsurface drainage tile (Note: PSDSs under this exemption are regulated under 567—Chapter 69).

b. A semipublic sewage DS, the construction of which has been approved by the department and that does not discharge into a water of the state.

c. A pretreatment system, the effluent of which is to be discharged directly to another DS for final treatment and disposal.

d. A discharge from a geothermal heat pump that does not reach a navigable water.

e. Water well construction and well services related discharge that does not reach a WOTUS.

f. Discharges from the application of biological pesticides and chemical pesticides where the discharge does not reach a WOTUS. Aquatic pesticides may be applied to any WOTUS in accordance with this chapter and NPDES General Permit No. 7, “Pesticide General Permit (PGP) for Point Source Discharges to Waters of the United States From the Application of Pesticides.”

g. Agricultural stormwater discharges. This exclusion applies only to the operation permit requirement set forth in this rule and does not alter other requirements of law, including but not limited to any applicable requirements of Iowa Code chapters 459 and 459A.

h. Dewatering discharge from the installation, repair, or maintenance of agricultural drainage systems that does not reach a water of the state. This activity is not considered operation of a wastewater DS.

i. A wastewater discharge from a water treatment plant that does not reach a WOTUS.

60.3(2) *Applications.*

a. Individual permit applications.

(1) Application Forms. Applications for operation permits required under this paragraph shall be made on forms provided by the department.

(2) Application due dates.

1. Applications for an individual permit for a new discharge of stormwater associated with construction activity as defined in 40 CFR §122.26(b)(14) under “stormwater discharge associated with industrial activity” must be submitted at least 60 days before the date on which construction is to commence.

2. The due date for an application for a new discharge of wastewater is 180 days prior to the date the operation is scheduled to begin unless a shorter period is approved by the director.

3. The due date for a renewal application is 180 days prior to the expiration date of the current permit. For a POTW, permission to submit an application at a later date may be granted by the director.

(3) Application completeness.

1. A permit application is complete and approvable when all necessary questions on the application have been completed and the application is signed pursuant to this subrule, and when all applicable portions of the application, including the application fee, treatment agreement forms, and required attachments, have been submitted. The director may require the submission of an antidegradation alternatives analysis or other additional information deemed necessary to evaluate the application.

2. Incomplete applications may be returned to the applicant for completion. Authorization to discharge will be suspended if a complete application is not submitted to the department before the expiration date of the current permit. In the case of new applications, no discharge will be allowed until an operation permit is issued. In the case of existing discharges, if a permit application is incomplete or has not been submitted, the department shall notify the applicant of a violation of this rule.

3. If a permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, the permittee shall promptly submit such facts or information.

(4) Application receipt. Upon completion of a tentative determination with regard to a permit application as described in 60.5(1), the director shall issue an operation permit for applications filed pursuant to this subrule within 90 days of the receipt of a complete application unless the application is for an NPDES permit or unless a longer period of time is necessary and the applicant is notified.

b. GP applications. A Notice of Intent (NOI) for coverage under a GP shall be completed on forms provided by the department and in accordance with 60.6(1). An NOI must be submitted for any of the following:

- (1) Stormwater discharge associated with industrial activity;
- (2) Stormwater discharge associated with small construction activity;
- (3) PSDSs that discharge to a WOTUS;
- (4) Discharges, except a stormwater only discharge, from a mining or processing facility;
- (5) Discharges from hydrostatic testing, tank ballasting and water lines, if required to be submitted by GP No. 8; or
- (6) Discharges from dewatering or residential geothermal systems, if required to be submitted by GP No. 9.

c. Application fees. Required fees shall be submitted with all permit applications pursuant to Iowa Code section 455B.197(3).

d. Signatories of permit applications. Permit applications for operation and NPDES permits shall be signed in accordance with 40 CFR §122.22.

60.3(3) *Indirect discharger requirements.*

a. Information requirement. The director may require an indirect discharger to submit information similar to that required in an application for an operation permit, but no operation permit is required for such discharge. This subrule does not apply to indirect dischargers that discharge to POTWs with department-approved pretreatment programs.

b. Treatment agreement (TA). A POTW intending to accept waste from a SIU as defined in 40 CFR §403.3(v) must submit a TA that:

(1) Is on the TA form provided by the department;

(2) Identifies and limits the monthly average and daily maximum flows and identifies and limits all other pollutants or pollutant parameters necessary to ensure that the discharge will be in accordance with the applicable requirements in 567—Chapter 62; and

(3) Is signed and dated by the SIU and the owner of the POTW accepting the wastewater.

c. TA submittal timelines. A POTW receiving waste from an existing or proposed SIU shall submit a complete TA form to the department in accordance with the following time lines:

(1) For an existing SIU with an existing TA, 60 days in advance of a proposed expansion, production increase or process modification that may result in discharges of sewage, industrial waste, or other waste in excess of the discharge stated in the existing TA.

(2) For an indirect discharger that would become a SIU as a result of a proposed expansion, production increase or process modification, 60 days in advance of the proposed expansion, production increase or process modification.

(3) For a new indirect discharger that will qualify as a SIU, 180 days in advance of a proposed discharge.

d. Construction and operation permit applications—TA submittal.

(1) A construction permit application for the construction or modification of a POTW must include current TA forms for each SIU discharging to the POTW. These TAs will be used in determining the design basis of the new or upgraded system.

(2) An operation permit application from a POTW must include information and current TA forms for each SIU discharging to the POTW, and information on any Non-Significant Categorical Industrial User discharging to the POTW.

60.3(4) *Effective period.* NPDES permits may be granted for any period of time not to exceed five years. All other operation permits may be granted for an appropriate period of time as determined by the director, based on the type of wastewater DS being permitted. GPs will be issued for a period not to exceed five years. Each permit to be renewed shall be subject to the provisions of all department rules in effect at the time of the renewal.

60.3(5) *Permit conditions.* Operation permits shall contain conditions deemed necessary by the director to ensure compliance with all applicable department rules, including monitoring and reporting conditions, to protect the public health and beneficial uses of waters of the state, and to prevent water pollution from waste storage or disposal operations.

60.3(6) *Modification or termination.* The director may amend, revoke and reissue, or terminate in whole or in part any permit for cause, either at the request of any interested person (including the permittee) or upon the director's initiative, according to the provisions of this subrule.

a. GP. The director may revoke and reissue or terminate in whole or in part any GP or coverage under a GP for cause. A waiver or amendment of the terms and conditions of a GP

shall not be granted. If a waiver or amendment of a GP is desired, the permittee must apply for an individual permit following the procedures in 60.3(2) “a.”

b. Individual permit. All requests to amend, revoke and reissue, or terminate an individual permit shall be in writing and contain information or reasons supporting the request.

(1) A permittee shall furnish to the director, within a reasonable time, any information that the director may request to determine whether cause exists for amending, revoking and reissuing, or terminating a permit, including a new permit application.

(2) Required amendment fees shall be submitted in accordance with 60.14(3).

(3) The filing of a request by an interested person for an amendment, revocation and reissuance, or termination does not stay any permit condition.

c. Cause. Cause under this subrule includes but is not limited to the following:

(1) Violation of any term or condition of the permit.

(2) Obtaining a permit by misrepresentation of fact or failure to disclose fully all material facts.

(3) A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge.

(4) Failure to submit records and information the director requires, both generally and as a condition of the permit, in order to ensure compliance with the discharge conditions specified in the permit.

(5) Failure or refusal of an NPDES permittee to carry out the requirements of 60.7(7) “f.”

(6) Failure to provide all the required application materials or appropriate fees.

(7) Causes listed in 40 CFR §§122.62 and 122.64.

d. Individual permit compliance schedule amendments.

(1) A request to amend an interim date in a compliance schedule shall be made at least 30 days prior to the next scheduled date that the permittee contends it is unable to meet. The

request shall include proposed changes to the existing compliance schedule and documentation supporting the need for an extension.

(2) A request to amend a final date in a compliance schedule shall be made at least 120 days prior to the final compliance date. An extension of the final date may be granted by the department for cause, including unusually adverse weather conditions, equipment shortages, labor strikes, federal grant regulation requirements, or any other extenuating circumstances beyond the control of the requesting party. Cause does not include economic hardship, profit reduction, or failure to proceed in a timely manner.

e. Reduction of individual permit minimum monitoring requirements. The minimum monitoring requirements in an existing or reissued individual permit as established in 567—Chapter 63 may be modified or reduced at the director's discretion or when requested by the permittee.

(1) A request to modify or reduce the minimum monitoring requirements in an existing individual permit is considered a waiver request. A request shall include a written description of the proposed modification or reduction, monitoring results that are frequent enough to reflect variations in wastewater characteristics over a period of time and are consistent in results from sample to sample, and a completed Petition for Waiver form, available on the department's website.

(2) Any request to modify or reduce minimum monitoring requirements must adequately justify that the modified or reduced monitoring will accurately reflect actual wastewater characteristics and will not adversely impact facility operations.

(3) The department will evaluate a request to modify or reduce the minimum monitoring requirements in an existing permit based upon whether or not less frequent sample results would accurately reflect actual wastewater characteristics and whether operational control could be maintained.

(4) All reductions or modifications of monitoring incorporated into an individual operation or NPDES permit by amendment or upon reissuance are only effective until the expiration date of that permit.

f. Requests to amend, revoke and reissue, or terminate.

(1) Individual permit requests.

1. If the director tentatively decides to amend or revoke and reissue an individual permit, a draft permit shall be prepared according to 60.5(1) “a.” When an individual permit is amended under this subrule, only those conditions to be amended shall be reopened when a new draft permit is prepared. All other aspects of the existing permit shall remain in effect for the duration of the permit. If an amendment falls under the definition of “minor amendment,” the individual permit may be amended without a draft permit or PN.

2. If the director decides to terminate an individual permit, a termination decision shall be prepared and transmitted to the permittee. The permittee will have 60 days to appeal the termination.

(2) GP requests. If the director tentatively decides to revoke and reissue or terminate a GP, a draft reissuance or termination will proceed in accordance with Iowa Code sections 455B.103A and 455B.173.

(3) When an individual or general permit is revoked and reissued under this subrule, the entire permit is reopened just as if the permit had expired and was being reissued.

(4) During any amendment, revocation and reissuance, or termination proceeding, the permittee or permittees shall comply with all conditions of the existing permit until a new final permit is reissued or the existing permit is terminated.

(5) If the director decides the request is not justified, the director shall deny the request and send the requester a brief written response giving a reason for the decision. Denials of

requests for permit amendment, revocation and reissuance, or termination are not subject to PN, comment, hearings, or appeals.

60.3(7) *Prohibitions on permit issuance.* 40 CFR §122.4 is adopted by reference.

60.3(8) *Public access to NPDES information.* Department records connected with NPDES permits are available for public inspection and copying to the extent provided in 567—Chapter 2.

567—60.4(455B) Issuance of NPDES permits.

60.4(1) *Individual permit.* An individual NPDES permit is required when there is a discharge of a pollutant from any point source into navigable waters. An NPDES permit is not required for the discharges listed in 40 CFR §122.3.

60.4(2) *General permits (GPs).*

a. The director may issue GPs consistent with this chapter to regulate one or more categories or subcategories of discharges, if the sources within each category or subcategory meet the criteria in 40 CFR §122.28(a)(2).

b. Each GP issued by the department must be adopted as an administrative rule in accordance with Iowa Code chapter 17A. Each proposed permit will:

(1) Be accompanied by a rationale setting forth the principal facts and methodologies considered during permit development,

(2) Correspond to existing geographic or political boundaries, and

(3) Be identified in rule 567—60.13(455B).

c. If an NPDES permit is required for an activity covered by a GP, the applicant may seek either GP coverage or an individual permit as provided in this chapter.

60.4(3) *Effect of a permit.* 40 CFR §122.5 is adopted by reference. Compliance with a permit during its term constitutes compliance, for purposes of enforcement, with equivalent limitations and standards set out in 567—Chapters 61 and 62.

567—60.5(455B) Notice and public participation in the individual permit process.

60.5(1) *Formulation of tentative determination.* The department shall make a tentative determination to issue or deny an operation or NPDES permit for the discharge described in a permit application in advance of the PN (described in 60.5(2)). If the tentative determination is to:

a. Issue an NPDES permit, the department shall prepare a permit rationale pursuant to 60.5(3) and a draft permit. The draft permit shall include:

(1) Effluent limitations identified pursuant to 60.7(2) and 60.7(3) for those pollutants proposed to be limited;

(2) If necessary, a proposed compliance schedule, pursuant to 60.7(4) and 60.7(5) that includes interim dates and requirements for meeting the effluent limitations and other permit conditions; and

(3) Any other special conditions (other than those required in 60.7(7)) that will have a significant impact upon the discharge described in the permit application.

b. Deny an NPDES permit, the department shall prepare a notice to deny the permit application and place it on PN as described in 60.5(2).

c. Issue an operation permit (non-NPDES permit), the department shall prepare a final permit and transmit it to the applicant. The applicant will have 60 days to appeal the final operation permit.

d. Deny an operation permit (non-NPDES permit), no PN is required. The department shall send written notice of the denial to the applicant. The applicant will have 60 days to appeal the denial.

60.5(2) *Public notice (PN) for individual NPDES permits.*

a. Prior to the issuance of an NPDES permit, a major NPDES permit amendment, or the denial of a permit application for an NPDES permit, a PN shall be circulated in a manner

designed to inform interested and potentially interested persons of the proposed discharge and of the tentative determination to issue or deny an NPDES permit for the proposed discharge.

(1) The PN shall be transmitted by the department to the persons noted in 40 CFR §124.10(c)(1).

(2) The PN shall be transmitted by the department to any person upon request. Any person or group may request to receive copies of any PNs concerning the tentative determinations with respect to the permit applications within the state or within a certain geographical area.

(3) The department shall periodically notify the public of the opportunity to receive PNs. The director may update the PN distribution list from time to time by requesting written indication of continued interest from those listed. The director may delete from the list the name of any person or group who fails to respond to such a request.

b. The director may publish all notices of activities described in 60.5(2)“*a*” to the department’s website. If this option is selected for a draft permit, the director must post the draft permit and permit rationale on the website for the duration of the public comment period.

c. The department shall provide not less than 30 days following the PN date during which time interested persons may submit their written views on the tentative determinations with respect to the permit application and request a public hearing pursuant to 60.5(4). Written comments may be submitted by paper or electronic means. All pertinent comments submitted during the 30-day comment period shall be retained by the department and considered by the director in the formulation of the final determinations with respect to the permit application. The comment period may be extended at the department’s discretion. Pertinent and significant comments received during either the original comment period or an extended comment period shall be responded to in a responsiveness summary pursuant to 60.5(5).

d. A PN of a draft NPDES permit, a major permit amendment, or the denial of a permit application for an NPDES permit shall contain:

- (1) The name, email address, and telephone number of the permit writer.
- (2) The name and address of the applicant.
- (3) A brief description of the applicants' activities or operations that result in the discharge described in the permit application.
- (4) The name of the waterway to which each discharge of the applicant is made.
- (5) A statement of the department's tentative determination to issue, amend, or deny an NPDES permit for the discharge or discharges described in the permit application.
- (6) A brief description of the procedures for the formulation of final determinations, including the 30-day comment period required by 60.5(2) "c," procedures for requesting a public hearing and any other means by which interested persons may influence or comment upon those determinations.
- (7) The address, telephone number, email address, and website of places at which interested persons may obtain further information and request copies of, or inspect and copy the tentative determination, permit rationale, and any associated documents.

e. No PN is required for a minor permit amendment.

f. No PN is required when a request for a permit amendment or permit termination is denied. The department shall send written notice of the denial to the requester and the permittee only. No PN is required if an applicant withdraws a permit application.

60.5(3) *Permit rationales and notices of intent to issue or deny.*

a. When the department has made a determination to issue or deny an NPDES or operation permit as described in 60.5(1), it shall prepare and send the following information, specific to each determination.

(1) NPDES permit issuance. For a determination to issue an NPDES permit, the department shall prepare and, upon request, shall send to any person a permit rationale with

respect to the application described in the PN. Permit rationales shall include at least the following information:

1. For each discharge described in the permit application, a detailed description of the discharge location and a quantitative description of the discharge.
2. A brief citation, including a brief identification of the uses for which the receiving waters have been classified, of the WQS applicable to the receiving waters, and of the effluent standards and limitations applicable to the proposed discharge.
3. An explanation of the principal facts and the significant factual, legal, methodological, and policy questions considered in the preparation of the draft permit.
4. Any calculations or other necessary explanation of the derivation of effluent limitations.

(2) NPDES permit application denial. For a determination to deny an application for an NPDES permit, the department shall prepare and, upon request, shall send a notice to deny with respect to the application described in the PN. A notice to deny shall include:

1. The location of the discharge; and
2. A description of the reasons supporting the tentative decision to deny the permit application.

(3) Operation permit issuance. For a determination to issue an operation permit, the department shall prepare and issue a permit. The reasons supporting the decision to issue an operation permit can be sent to the operation permit applicant upon request.

(4) Operation permit application denial. For a determination to deny an application for an operation permit, the department shall prepare and send written notice of the denial to the applicant only. The written denial shall include a description of the reasons supporting the decision to deny the permit application.

b. Upon request, the department shall add the name of any person or group to a distribution list to receive copies of permit rationales and notices to deny and shall make copies of all permit rationales and notices to deny available.

60.5(4) *Public hearings on proposed NPDES permits.* The applicant, any affected state, the regional administrator, or any interested agency, person, or group of persons may request a public hearing with respect to a tentative determination to issue or deny an NPDES permit.

a. Public hearing requests shall:

- (1) Clearly state issues and topics to be addressed at the hearing;
- (2) Be filed with the director within the 30-day period prescribed in 60.5(2) “c”; and
- (3) Indicate the interest of the party filing the request and the reasons why a hearing is warranted.

b. The director shall hold an informal and noncontested case hearing if there is a significant public interest in holding a hearing. Frivolous or insubstantial requests for hearing may be denied by the director. Instances of doubt should be resolved in favor of holding a hearing.

c. Any hearing held pursuant to this subrule shall be held in the geographical area of the proposed discharge when possible or other appropriate area at the director’s discretion. Web-based hearings may also be held at the director’s discretion. In addition, any hearing held pursuant to this subrule may, as appropriate, consider related groups of permit applications.

d. PN of any hearing held pursuant to this subrule shall be circulated at least as widely as was the notice of the tentative determination with respect to the permit application. Notice pursuant to this paragraph shall be made at least 30 days in advance of the hearing. Notice shall be transmitted to:

- (1) All persons and government agencies that received a copy of the notice for the permit application; and
- (2) Any person or group upon request.

e. The contents of a PN of any hearing held pursuant to this subrule shall include at least the following:

- (1) The name, email address, and telephone number of the permit writer;
- (2) The name and address of each applicant whose application will be considered at the hearing;
- (3) The name of the waterbody to which each discharge is made;
- (4) A brief reference to the PN issued for each NPDES application, including the date of notice;
- (5) Information regarding the time and location for the hearing;
- (6) The purpose of the hearing;
- (7) A concise statement of the issues raised by the person or persons requesting the hearing;
- (8) The address, telephone number, email address, and website where interested persons may obtain further information and request copies of, or inspect and copy the draft NPDES permit, permit rationale, and any associated documents;
- (9) A brief description of the nature of the hearing, including the rules and procedures to be followed; and
- (10) The final date for submission of comments regarding the tentative determination.

60.5(5) *Response to comments.* At the time a final NPDES permit is issued, the director shall respond to significant and pertinent comments in the form of a responsiveness summary. A copy of the responsiveness summary shall be sent to the permit applicant and made available on the department's website. The responsiveness summary shall:

a. Specify which provisions, if any, of the draft permit have been changed in the final permit decision and the reasons for the changes; and

b. Briefly describe and respond to all significant and pertinent comments on the draft permit raised during the public comment period provided for in the PN or during any hearing. Comments on a draft permit may be submitted by paper or electronic means or orally at a public hearing.

567—60.6(455B) Completing a Notice of Intent (NOI) for coverage under a GP.

60.6(1) *Contents of a complete NOI.* An applicant proposing to conduct activities covered by a GP shall file a complete NOI by submitting to the department materials required in this subrule, as applicable. An NOI is not required for discharges authorized under GPs No. 6 or No. 7, for certain discharges under GP No. 8, or for certain discharges under GP No. 9.

a. *NOI Form.* Electronic NOI forms provided by the department must be completed in full and may be obtained on the department's website. Paper NOI forms, when provided, must be completed in full.

b. *GP fee.* The applicable GP fees are listed in 60.14(2).

c. *Public notice (PN) for GPs No. 1, No. 2, and No. 3.* Applicants for GPs No. 1, No. 2 and No. 3 must publish a PN in accordance with Iowa Code section 455B.103A. The newspaper notice shall, at the minimum, contain the following information:

(1) A brief description of the applicants' activities or operations that result in the discharge described in the NOI;

(2) The name of the waterway to which each discharge of the applicant is made and a short description of the location of each discharge of the applicant on the waterway; and

(3) The address, telephone number, email address, and website of places at which interested persons may obtain further information or inspect and copy the NOI.

60.6(2) *Authorization to discharge under a GP.*

a. Upon the submittal of an NOI in accordance with 60.3(2) "b" and 60.6(1), an applicant is authorized to discharge after the department has determined that the contents of the NOI

satisfy the requirements of this chapter and of a GP. The department will notify the applicant of coverage under a GP. If any of the items required for filing an NOI specified in 60.6(1) are missing, the department will consider the NOI incomplete and will notify the applicant of the incomplete items.

b. If the discharge described in the NOI does not meet the requirements of a GP, an NOI may be denied. The department will notify applicants of denial within 30 days.

c. Authorization to discharge is automatic only for the GPs that do not require an NOI under 60.3(2) “*b*,” provided the discharge is a covered activity and the permittee complies with all applicable permit requirements.

60.6(3) *GP suspension or revocation.* In addition to the causes for suspension or revocation listed in 60.3(6), the director may suspend or revoke coverage under a GP and require the applicant to apply for an individual NPDES permit in accordance with 60.3(2) “*a*.” The department will notify the affected discharger and establish a deadline, not longer than one year, for submitting an individual permit application. Coverage may be suspended or revoked for the following reasons:

a. The discharge would not comply with Iowa’s WQS pursuant to 567—Chapter 61,

b. The department finds that the activities associated with an NOI do not meet the conditions of the applicable GP, or

c. The department finds that any discharge covered under a GP is not consistent with the conditions specified in the applicable GP.

60.6(4) *Eligibility for individual NPDES permit holders.* A person holding an individual NPDES permit for an activity covered by a GP may apply for coverage under a GP by filing an NOI according to the procedures described in 60.3(2) “*b*” and this rule. In addition to these requirements, the permittee must submit a written request, with the NOI, to either terminate

the individual NPDES permit or to amend the individual NPDES permit to remove the GP-covered activity.

a. Upon receipt of a complete NOI and request for individual NPDES permit termination or amendment, the applicant shall be authorized to discharge under the GP in accordance with 60.6(2). The applicant will receive notification from the department of coverage under the GP and of the termination or amendment of the individual permit.

b. Authorization to discharge under a GP that does not require an NOI will be automatic in accordance with 60.6(2) and shall commence upon completion of individual NPDES permit termination or amendment.

c. Individual NPDES permit amendments under this subrule shall follow the applicable PN procedures in rule 567—60.5(455B).

60.6(5) *Filing a Notice of Discontinuation (NOD).* A notice to discontinue discharge associated with an activity covered by a GP shall be made electronically or in writing to the department in accordance with the conditions established in each GP.

567—60.7(455B) Terms and conditions of NPDES permits.

60.7(1) *Prohibited discharges.* No NPDES permit may authorize any of the discharges prohibited by rule 567—62.1(455B).

60.7(2) *Application of effluent and pretreatment standards, WQS, and other requirements.* Each NPDES permit shall include any of the following that is applicable:

a. An effluent limitation guideline; a standard of performance for a new source; or an effluent standard, effluent prohibition, or pretreatment standard promulgated by the administrator under Sections 301, 304, 306, or 307 of the CWA and adopted by reference in 567—Chapter 62.

b. A water quality-based effluent limitation established by the administrator pursuant to Section 302 of the CWA.

c. Prior to promulgation of applicable effluent and pretreatment standards under Sections 301, 302, 306, and 307 of the CWA, such conditions as the director determines are necessary to carry out the provisions of the CWA.

d. Any other limitation, including those necessary to:

(1) Meet or implement any applicable WQS, treatment or pretreatment standards, or compliance schedules established pursuant to any Iowa law or regulation;

(2) Meet any other federal law or regulation;

(3) Implement total maximum daily loads established pursuant to Section 303(d) of the CWA; or

(4) Comply with the antidegradation policy requirements of 567—subrule 61.2(2) implemented according to the “Iowa Antidegradation Implementation Procedure,” effective February 17, 2010, hereby incorporated by reference, and available on the department’s website.

e. Limitations pursuant to 40 CFR §122.44(d)(1)(i), (ii), and (iii).

60.7(3) *Effluent limitations in NPDES permits.*

a. In the application of effluent standards and limitations, WQS, and other legally applicable requirements, pursuant to 60.7(2), the director shall, unless impracticable, specify average and maximum daily quantitative limitations for the level of pollutants in the authorized discharge in terms of weight (except pH, temperature, radiation, and any other pollutants not appropriately expressed by weight). The director may, in addition to the specification of daily quantitative limitations by weight, specify other limitations for the level of pollutants authorized in the discharge.

b. The manner in which effluent limitations are expressed will depend upon the nature of the discharge.

(1) Continuous discharges shall be limited by daily loading figures and, where appropriate, may be limited as to concentration or discharge rate (e.g., for toxic or highly variable continuous discharges).

(2) Noncontinuous discharges should be more particularly described and limited in accordance with 40 CFR §122.45(e).

60.7(4) *Compliance schedules in NPDES permits.* An NPDES permit may specify a compliance schedule in accordance with 40 CFR §122.47. Compliance shall be achieved as soon as possible, consistent with the guidelines and requirements of the CWA and with the provisions of Iowa Code sections 455B.173(2) “b” and 455B.173(3) “b.” If a permittee fails or refuses to comply with an interim or final requirement in an NPDES permit, such noncompliance shall constitute a violation of the permit for which the director may, pursuant to this chapter and 567—Chapter 7, modify, suspend or terminate the permit or take direct enforcement action. Compliance schedules shall not relieve the permittee of the duty to obtain a construction permit pursuant to this chapter.

60.7(5) *Compliance schedules in NPDES permits for disadvantaged communities (DCs).* If compliance with applicable federal or state regulations or an order of the department will result in substantial and widespread economic and social impact (SWESI) to ratepayers and an affected community, the director may establish in an NPDES permit a compliance schedule that will result in an improvement of water quality and reasonable progress toward complying with the applicable requirements but does not result in SWESI.

a. DC status. The director shall find that a regulated entity and the affected community are a DC according to Iowa Code section 455B.199B(2).

b. DC analysis (DCA). A regulated entity or affected community must submit a DCA to the director to be considered for disadvantaged status.

(1) When new requirements in a proposed or reissued NPDES permit may result in SWESI, a DCA may be submitted by:

1. A POTW or semipublic facility;
2. A wastewater DS for the treatment or disposal of domestic sewage that is not a semipublic DS or a PSDS and that is not owned by a city or sanitary sewer district; or
3. Any other owner of a wastewater DS that is not a PSDS and does not discharge industrial wastes.

(2) A DCA may be submitted prior to the issuance of an initial NPDES permit if the facility does not discharge industrial wastes and is not a new source or new discharger.

c. DCA contents.

(1) A DCA must contain all of the following:

1. Proposed TAPC as defined in 60.7(5) “d.”
2. The number of households or ratepayers in the affected community.
3. A description of the bond rating of the affected community over the last year, if available.
4. The user rates, as follows:
 - For a municipality or other community, the current sewer rate ordinances, including the sewer rates of any industrial users;
 - For a water treatment facility, the water rate schedules or tables; or
 - For any other entity, the monthly ratepayer charge for wastewater treatment.
5. An explanation of why the regulated entity or affected community believes that compliance with the proposed requirements will result in SWESI.

(2) If a DCA is submitted by or for an entity other than a municipality, community, or water treatment facility, the DCA must also contain either:

1. For entities with more than ten households or ratepayers, the MHI or ratepayer income, as determined by an income survey conducted by the regulated entity; or

2. For entities with ten or fewer households or ratepayers, an estimate of MHI or ratepayer income.

d. Definition of total annual project costs (TAPC). “Total annual project costs” means the current costs of wastewater treatment in the community (if any) plus the future costs of proposed wastewater system improvements that will meet or exceed all applicable federal or state regulations or requirements of an order of the department. The TAPC shall include any current and proposed facility O&M costs and any existing and proposed system debt, as expressed in current and proposed sewer rates. The costs shall be amortized for a 30-year loan period at an interest rate equal to the current state revolving fund interest rate. Awarded grant funding must be subtracted from the TAPC.

The TAPC formula is: $TAPC = [(Estimated\ costs\ to\ design\ and\ build\ proposed\ project - Awarded\ grant\ funding)\ amortized\ over\ 30\ years] + Current\ annual\ system\ budget,\ including\ O\&M\ and\ existing\ debt\ service + Future\ annual\ O\&M\ costs.$

e. DC matrix (DCM). Upon receipt of a complete DCA, the director shall use the DCM to evaluate the disadvantaged status of an entity or community. A regulated entity or affected community shall be considered a DC if the point total derived in the DCM is equal to or greater than 12. The following data sources shall be used to derive the point total in the DCM:

(1) The TAPC, the number of households or ratepayers in a community, and the bond rating of the community, as stated in the DCA;

(2) The MHI of either:

1. The community, as found in the most recent American Community Survey or United States Census or as stated in an income survey conducted by the regulated entity or community; or

2. The ratepayer group, as stated in an income survey conducted by the regulated entity;
and

(3) The unemployment rate of the local county and of the state as found in the most recent Iowa Workforce Information Network unemployment data.

f. Ratio and determination. The ratio of the TAPC per household or per ratepayer to MHI shall be calculated in the DCM as follows: the TAPC shall be divided by the number of households or ratepayers to obtain the costs per household or ratepayer, and the costs per household or ratepayer shall be divided by the MHI to obtain the ratio. If the ratio of compliance costs to MHI is:

(1) Less than 1 percent, the entity or community is not considered disadvantaged.

(2) Greater than or equal to 2 percent, the entity or community is considered a DC.

(3) Greater than or equal to 1 percent and less than 2 percent, the director shall use the point total in the DCM to determine if the entity or community is disadvantaged.

g. DC compliance schedule—first part. A compliance schedule established in an NPDES permit for a DC as a result of SWESI may contain one or two parts. The first part of a DC compliance schedule shall encompass one five-year NPDES permit cycle and require the permittee to submit an alternatives report, an alternatives implementation compliance plan (AICP), and annual progress reports.

(1) Alternatives report. An alternatives report shall be submitted no later than two years after permit issuance and shall:

1. Detail the alternative pollution control measures that will be investigated and contain an examination of all other appropriate measures that may achieve compliance with applicable federal or state regulations or an order of the department without creating SWESI;

2. Describe which measures will be evaluated for feasibility and affordability during the next portion of the compliance schedule; and

3. Include a plan for pursuing funding options, including grants and low-interest loans.

(2) Alternatives implementation compliance plan (AICP). An AICP shall be submitted no later than 4½ years after permit issuance and shall include:

1. The results of the investigation detailed in the alternatives report;
2. A description of any feasible and affordable alternative(s) that will be implemented;
3. A schedule of the time necessary to implement the alternative(s); and
4. An updated DCA.

h. DC compliance schedule—second part. If the entity or community continues to qualify as disadvantaged according to the DCM evaluation of the DCA submitted with the AICP, the entity or community may receive a second compliance schedule as specified in this subrule.

(1) AICP schedule. If the AICP proposes an implementation schedule, the proposed schedule shall be included in the community's NPDES permit.

(2) Future compliance plan (FCP). The submittal of an FCP will be necessary only if the AICP concludes that the DC cannot feasibly implement any alternatives and if the community is still disadvantaged according to the DCM evaluation of the DCA submitted with the AICP. An FCP shall be submitted no later than three years after permit issuance. A compliance schedule requiring an FCP shall also require annual progress reports, including an updated DCA. If a DCM evaluation determines that an entity or community is no longer disadvantaged based on the most recent DCA, the NPDES permit may be amended to change the compliance schedule. An FCP shall:

1. Detail how the DC will meet the applicable federal or state regulations or an order of the department and the period necessary to do so, and
2. Review the types of technology capable of treating the pollutant of concern and the costs of installing and operating each technology. All technically feasible alternatives shall be explored.

(3) Schedule extension. The second part of a DC compliance schedule may be extended at the director's discretion.

i. Compliance schedules issued in accordance with this subrule shall comply with 60.7(4).

60.7(6) *Disadvantaged unsewered communities (DUCs)*. If compliance with applicable federal or state regulations or an order of the department will result in SWESI to the ratepayers of an unsewered community, the director may negotiate a compliance agreement that will result in an improvement of water quality and reasonable progress toward complying with the applicable regulations but does not result in SWESI.

a. *DUC status*. The director shall find that an unsewered community is a DUC according to Iowa Code section 455B.199B(3).

b. *DUC analysis (DUCA)*.

(1) An unsewered community must submit a DUCA to the director to be considered for DUC status. Only unsewered communities may submit a DUCA under this subrule. For the purposes of this subrule, an unsewered community is defined as a grouping of ten or more residential houses with a density of one house or more per acre and with either no wastewater treatment or inadequate wastewater treatment. An entity defined in 60.1(2) as a PSDS may not submit a DUCA or qualify for a DUC compliance agreement under this subrule.

(2) An unsewered community may submit a DUCA to the director prior to the issuance of or amendment to an administrative order with requirements that could result in SWESI and that are based on applicable federal or state regulations or an order of the department.

c. *DUCA contents*. A DUCA must contain all of the following:

(1) Proposed TAPC as defined in 60.7(6)“d”;

(2) The number of households in the unsewered community and source of household information;

(3) Total amount of any awarded grant funding;

(4) MHI or ratepayer income information. If no MHI information is available for the unsewered community, the community should conduct a rate survey to determine the MHI; and

(5) An explanation of why the unsewered community believes that compliance with the proposed requirements will result in SWESI.

d. Definition of total annual project costs (TAPC). “Total annual project costs” means the future costs of proposed wastewater system installation or improvements that will meet or exceed all applicable federal or state regulations or requirements of an order of the department. The TAPC shall include the proposed facility O&M costs and the proposed debt of the system as expressed in the proposed sewer rates. The costs shall be amortized over a 30-year loan period at an interest rate equal to the current state revolving fund interest rate. Awarded grant funding must be subtracted from the TAPC.

The TAPC formula for an unsewered community is: $TAPC = [(Estimated\ costs\ to\ design\ and\ build\ proposed\ project - Awarded\ grant\ funding) \text{ amortized over } 30\ years] + Future\ annual\ O\&M\ costs.$

e. DUC matrix (DUCM). Upon receipt of a complete DUCA, the director shall use the DUCM to evaluate the disadvantaged status of an unsewered community. An unsewered community shall be considered a DUC if the point total derived from the DUCM is equal to or greater than 10. The following data sources shall be used to derive the point total in the DUCM:

(1) The TAPC and number of households in the unsewered community, as stated in the DUCA;

(2) The MHI of the unsewered community as found in the most recent American Community Survey or United States Census or as stated in an income survey conducted by the unsewered community; and

(3) The unemployment rate of the local county and of the state as found in the most recent Iowa Workforce Information Network unemployment data.

f. Ratio and determination. The director shall not require installation of a wastewater DS by an unsewered community if the director determines that such installation would create SWESI, in accordance with Iowa Code section 455B.199B.

(1) The ratio of TAPC per household to MHI shall be calculated in the DUCM as follows: the TAPC shall be divided by the number of households to obtain the costs per household, and the costs per household shall be divided by the MHI to obtain the ratio.

(2) If the ratio of compliance costs to MHI is:

1. Less than 1 percent, the unsewered community is not considered disadvantaged.
2. Greater than or equal to 2 percent, the unsewered community is considered a DUC.
3. Greater than or equal to 1 percent and less than 2 percent, the director shall use the point total in the DUCM to determine if the unsewered community is disadvantaged.

g. DUC compliance agreement. A compliance agreement negotiated with a DUC as a result of SWESI shall require the unsewered community to submit an alternatives report and an AICP.

(1) Alternatives report. An alternatives report shall be submitted no later than two years after a DUC determination and shall:

1. Detail the alternative pollution control measures that will be investigated and contain an examination of all other appropriate measures that may achieve compliance with the WQS without creating SWESI;
2. Describe which measures will be evaluated for feasibility and affordability after the report submittal; and
3. Include a plan for pursuing funding options, including grants and low-interest loans.

(2) Alternatives implementation compliance plan (AICP). An AICP shall be submitted no later than 4½ years after a DUC determination. An AICP shall include:

1. The results of the investigation detailed in the alternatives report,
2. A description of any feasible and affordable alternative(s) that will be implemented,
3. A schedule of the time necessary to implement the alternative(s), and
4. An updated DUCA.

(3) AICP schedule. If the AICP proposes an implementation schedule of one or more feasible alternatives, the proposed schedule shall be included in an administrative order between the department and the unsewered community. If the feasible alternative that will be implemented requires a construction, operation, or NPDES permit, the unsewered community shall comply with the rules regarding those permits in this chapter.

(4) Future compliance plan (FCP). The submittal of an FCP will be necessary only if the AICP concludes that the unsewered community cannot feasibly implement any alternatives and if the community is still disadvantaged according to the DUCM evaluation of the DUCA submitted with the AICP. An FCP shall be submitted no later than seven years after a DUC determination. An administrative order requiring an FCP shall also require the submittal of biennial progress reports containing an updated DUCA. If the DUCM evaluation determines that an unsewered community is no longer disadvantaged based on the most recent DUCA, the order may be amended at the director's discretion. An FCP shall:

1. Detail how the unsewered community will meet the WQS and the period necessary to do so; and
2. Review the types of technology capable of treating the pollutant of concern and the costs of installing and operating each type of technology. All technically feasible alternatives shall be explored.

60.7(7) *Other terms and conditions of NPDES permits.* Each NPDES permit shall provide for and ensure all of the following:

a. That all discharges authorized by the NPDES permit shall be consistent with the terms and conditions of the permit.

b. That facility expansions, production increases, or process modifications that result in new or increased pollutant discharges will be reported by submission of a new permit application or, if such discharge does not violate effluent limitations specified in the NPDES permit, by submission to the director of notice of such new or increased discharges of pollutants.

c. That the discharge of any pollutant more frequently than or at a level in excess of that identified and authorized by the permit shall constitute a violation of the terms and conditions of the permit.

d. That if the terms and conditions of a GP are no longer applicable to a discharge, the applicant shall apply for an individual NPDES permit.

e. That the permit may be amended, revoked and reissued, or terminated in whole or in part for the causes provided in 60.3(6) “c.”

f. That the permittee allows for facility inspection and entry pursuant to 40 CFR §122.41(i), which is adopted by reference.

g. That, if the permit is for a discharge from a POTW, the permittee shall provide notice to the director:

(1) 180 days in advance of any new introduction of pollutants into the POTW from a new source if such source was discharging pollutants;

(2) 60 days in advance of any substantial change in the volume or character of pollutants being introduced into the POTW by a source introducing pollutants into the POTW at the time of permit issuance; and

(3) Pursuant to 60.3(3) “c.”

Such notice shall include information on the quality and quantity of effluent to be introduced into the POTW and any anticipated impact of such change on the quantity or quality of effluent to be discharged from the POTW.

h. That, if the permit is for a discharge from a POTW, the permittee shall require any industrial user to comply with the requirements of Sections 204(b), 307, and 308 of the CWA.

i. That the facility is properly operated and maintained pursuant to 40 CFR §122.41(e), which is adopted by reference.

j. That the permit will be modified upon the establishment of a toxic effluent standard or prohibition pursuant to 40 CFR §122.44(b)(1), which is adopted by reference.

k. That the permittee shall take all reasonable steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment.

l. That the need to halt or reduce the permitted activity is not a defense in an enforcement action pursuant to 40 CFR §122.41(c), which is adopted by reference.

60.7(8) *POTW compliance—plan of action (POA).* The owner of a POTW must prepare and implement a POA to achieve and maintain compliance with final effluent limitations in its NPDES permit as specified below:

a. The director shall notify a POTW owner of the POA requirement and of an opportunity to meet with department staff to discuss the plan requirements. The POTW owner shall submit the POA to the appropriate regional department field office within six months of such notice unless a longer time is needed and is authorized in writing by the director.

b. A POA must identify the deficiencies and needs of the system, describe the causes of such deficiencies or needs, propose specific measures and a schedule to correct the deficiencies or meet the needs, and discuss the method of financing the proposed

improvements. A POA may include the submittal of a DCA in accordance with 60.7(5) or may provide for a phased construction approach to meet interim and final limitations.

This rule is intended to implement Iowa Code chapter 455B, subchapter III, part 1 (Iowa Code sections 455B.171 through 455B.187 and 455B.199B).

567—60.8(455B) Reissuance of operation and NPDES permits.

60.8(1) *Individual operation and NPDES permit reissuance.* Any operation or NPDES permittee who wishes to continue to discharge after the expiration date of the permit shall file an application for reissuance pursuant to 60.3(2) “a.”

60.8(2) *Renewal of coverage under a GP.* A permittee authorized to discharge under a GP is subject to the permit terms until coverage is obtained under an individual permit or the permitted discharge has ceased and, if required, an NOD is submitted in accordance with the GP.

a. If a permittee continues the activity beyond the expiration date of a GP and the permit will be reissued, the conditions of the expired GP will remain in effect until the effective date of the reissued GP.

b. If a permittee continues the activity beyond the expiration date of a GP and the permit will not be reissued or renewed, the discharge must be permitted with an individual NPDES permit in accordance with 60.3(2).

60.8(3) *Continuation of expiring operation and NPDES permits.*

a. The conditions of an expired operation or NPDES permit will continue in force until the effective date of a new permit if:

- (1) The permittee has submitted a timely and complete application under 60.3(2); and
- (2) The department does not issue a new permit with an effective date on or before the expiration date of the previous permit.

b. Operation and NPDES permits continued under this subrule remain fully effective and enforceable.

c. If a permittee is not in compliance with the conditions of the expiring or continued permit, the department may choose to do any of the following:

- (1) Initiate enforcement action on a permit that has been continued or reissued;
- (2) Issue a notice of intent to deny a permit under 60.5(3);
- (3) Reissue a permit with appropriate conditions in accordance with this subrule; or
- (4) Take other actions authorized by this chapter.

567—60.9(455B) Monitoring, recordkeeping and reporting by operation permit holders.

Operation permit holders are subject to the applicable requirements and provisions specified in 567—Chapter 63 and those specified in the operation permit issued by the department.

567—60.10(455B) Silvicultural activities. The following is adopted by reference: 40 CFR §122.27.

567—60.11(455B) Stormwater discharges.

60.11(1) The following are adopted by reference: 40 CFR §§122.26, 122.32, 122.33, 122.34, and 122.35.

60.11(2) Small municipal separate storm sewer systems (MS4s).

a. The following municipal MS4s that are not qualified as medium or large MS4s, in accordance with 40 CFR §122.26, are considered regulated small MS4s:

- (1) All MS4s located in urban areas with a population of at least 50,000 people as defined by the latest decennial census, and
- (2) All MS4s located outside urbanized areas that serve 10,000 people or more where the average population density is 1,000 people/square mile or more.

b. *NPDES permit applications for small MS4s.* An NPDES permit application shall be submitted for any discharge from a regulated small MS4 designated under this subrule. The

first permit application submitted by a small MS4 shall demonstrate how the applicant will develop, implement, and enforce a stormwater management program designed to reduce the discharge of pollutants from the small MS4 to the maximum extent practicable, in order to protect water quality and to comply with the CWA. Renewal applications shall demonstrate how the existing stormwater management program is being implemented and enforced. An application shall:

(1) Discuss the manner in which the permittee will or has addressed:

1. Public education and outreach on stormwater impacts;
2. Public involvement and participation;
3. Illicit discharge detection and elimination;
4. Construction site stormwater runoff control;
5. Post construction stormwater management in new development and redevelopment; and
6. Pollution prevention for municipal operations.

(2) Include measurable goals that the applicant intends to meet and dates by which the goals will be accomplished.

c. Permit coverage waivers for small MS4s.

(1) Permit coverage for small MS4s located in urbanized areas that serve 1,000 people or more and fewer than 10,000 people may be waived if the following requirements are met:

1. Where the small MS4 discharges any pollutants of concern that have been identified as a cause of an impairment of any waterbody to which the MS4 discharges, the department has determined that stormwater controls are not needed based on a wasteload allocation that is part of an EPA-approved TMDL that addresses the pollutants of concern.

2. Where the small MS4 discharges any pollutants of concern to an unimpaired waterbody or to a waterbody for which a TMDL has not been approved, the department has determined that stormwater controls are not needed based on an analysis equivalent to a TMDL that

determines sources and allocations for the pollutants of concern. The pollutants of concern are BOD, sediment or a parameter that addresses sediment, pathogens, or oil and grease.

3. The department has determined that future discharges from the small MS4 do not have the potential to result in exceedances of WQS, including impairments or other significant water quality impacts.

(2) Permit coverage for small MS4s located in urbanized areas that serve fewer than 1,000 people may be waived if the following requirements are met:

1. Where the small MS4 discharges any pollutants of concern that have been identified as a cause of an impairment of any waterbody to which the MS4 discharges, the department has determined that stormwater controls are not needed based on a wasteload allocation that is a part of an EPA-approved TMDL that addresses the pollutants of concern.

2. The system is not contributing substantially to the pollutant loadings of a physically interconnected MS4 that is regulated under this rule.

(3) Permit coverage for small MS4s located outside of urbanized areas that serve 10,000 people or more where the average population density is 1,000 people/square mile or more may be waived if the MS4 is not discharging pollutants that are the cause of an impairment of any waterbody to which the MS4 discharges.

(4) Should conditions under which a waiver was granted change, the waiver may be rescinded by the department and permit coverage may be required.

567—60.12(455B) Transfer of title and owner or operator address change.

60.12(1) *Transfer.* If title to any DS or part thereof for which a permit has been issued under this chapter is transferred, the new owner or owners shall be subject to all terms and conditions of the permit. Whenever title to a DS or part thereof is changed, the department shall be notified in writing of such change within 30 days of the occurrence. No transfer of

the authorization to discharge from the facility represented by the permit shall take place prior to notification of the department of the transfer of title.

60.12(2) *Address change.* Whenever the address of the owner is changed, the department shall be notified in writing within 30 days of the address change.

Rules 567—60.3(455B) through 567—60.12(455B) are intended to implement Iowa Code section 455B.173.

567—60.13(455B) General permits (GPs) issued by the department. The following is a list of GPs adopted by the department through the Administrative Procedure Act, Iowa Code chapter 17A, and the term of each permit.

60.13(1) “Storm Water Discharge Associated with Industrial Activity,” NPDES General Permit No. 1, effective March 1, 2023, to February 29, 2028.

60.13(2) “Storm Water Discharge Associated with Industrial Activity for Construction Activities,” NPDES General Permit No. 2, effective March 1, 2023, to February 29, 2028.

60.13(3) “Storm Water Discharge Associated with Industrial Activity from Asphalt Plants, Concrete Batch Plants, Rock Crushing Plants, and Construction Sand and Gravel Facilities,” NPDES General Permit No. 3, effective March 1, 2023, to February 29, 2028.

60.13(4) “Discharge from Private Sewage Disposal Systems,” NPDES General Permit No. 4, effective March 1, 2023, to February 29, 2028.

60.13(5) “Discharge from Mining and Processing Facilities,” NPDES General Permit No. 5, effective July 1, 2023, to June 30, 2028.

60.13(6) “Discharge Associated with Well Construction Activities,” NPDES General Permit No. 6, effective July 1, 2023, to June 30, 2028.

60.13(7) “Pesticide General Permit (PGP) for Point Source Discharges to Waters of the United States from the Application of Pesticides,” NPDES General Permit No. 7, effective July 1, 2023, to June 30, 2028.

60.13(8) “Discharge from Hydrostatic Testing, Tank Ballasting and Water Lines,” NPDES General Permit No. 8, effective July 1, 2023, to June 30, 2028.

60.13(9) “Discharge from Dewatering and Residential Geothermal Systems,” NPDES General Permit No. 9, effective July 1, 2023, to June 30, 2028.

567—60.14(455B) Fees.

60.14(1) *Fee types.*

a. Application and NOI fees.

(1) For individual nonstormwater NPDES and operation permits, an application fee must be submitted with the application as specified in this rule.

(2) For authorization under GPs Nos. 1, 2, 3 and 5, an applicant has the option of paying an annual permit fee or a multiyear permit fee when the NOI is submitted as specified in this rule.

(3) For MS4 permits and individual stormwater permits, a one-time, multiyear permit fee must be submitted at the time of application as specified in this rule.

(4) If a facility needs coverage under more than one NPDES or operation permit, fees for each permit must be submitted appropriately.

b. Annual fees. Certain individual nonstormwater facilities covered by NPDES and operation permits must submit annual fees on a yearly basis as specified in this rule.

c. Fees are nontransferable. Failure to submit the appropriate fee at the time of application renders the application incomplete, and the department shall suspend application processing until the fee is received. Failure to submit the appropriate annual fee may result in permit revocation or suspension as noted in 60.3(6).

60.14(2) *Fee payment.* Fees shall be paid by check, credit card, electronic payment, or money order made payable to the “Iowa Department of Natural Resources.” For facilities

needing coverage under more than one permit (e.g., general, individual stormwater, individual nonstormwater), separate payments shall be made according to the fee schedule in this rule.

60.14(3) *Fee schedule.* The following fees have been adopted:

a. GP fees. No fees shall be assessed for coverage under GPs not listed in this paragraph.

The following fees are applicable to the described GPs:

(1) Storm Water Discharges Associated with Industrial Activity, NPDES General Permit No. 1; Storm Water Discharge Associated with Industrial Activity for Construction Activities, NPDES General Permit No. 2; and Storm Water Discharge Associated with Industrial Activity from Asphalt Plants, Concrete Batch Plants, and Rock Crushing Plants, NPDES General Permit No. 3.

Annual permit fee	\$175 (per year)
or	
Five-year permit fee	\$700
Four-year permit fee	\$525
Three-year permit fee	\$350

All fees are to be submitted with the NOI.

(2) Discharge from Mining and Processing Facilities, NPDES General Permit No. 5.

Annual permit fee	\$125 (per year)
or	
Five-year permit fee	\$500
Four-year permit fee	\$400
Three-year permit fee	\$300

New facilities seeking GP No. 5 coverage shall submit fees with the NOI. Maximum coverage is for five years. Coverage may also be obtained for four years, three years, or one year as shown in the fee schedule above. Existing facilities shall submit annual fees by August 30 of every year unless a multiyear fee payment was received in an earlier year. In the event

a facility is no longer eligible to be covered under GP No. 5, the remainder of the fees previously paid by the facility shall be applied toward its individual permit fees.

b. Individual NPDES and operation permit fees. The following fees are applicable for the described individual permits:

(1) For individual stormwater permits, the following fees are due at the time of application, in accordance with whether or not the discharge will reach an OIW identified in the “Iowa Antidegradation Implementation Procedure” (incorporated by reference in 60.7(2) “d”(4)), as follows:

1. Where the discharge will not reach an OIW: a five-year permit fee of \$1,250.

2. Where the discharge will reach an OIW: a two-year permit fee of \$500.

(2) For permits that authorize the discharge of only stormwater from MS4s and any allowable nonstormwater, a five-year permit fee of \$1,250 must accompany the application.

(3) For individual nonstormwater NPDES and operation permits, a single application fee of \$85 as established in Iowa Code section 455B.197 is due at the time of a new application, renewal application, or amendment application.

1. The \$1,250 fee in 60.14(3) “b”(1) and (2) is not required for individual nonstormwater permits that authorize stormwater discharges along with other wastewater discharges.

2. Before an approved amendment request submitted by a facility holding a nonstormwater NPDES or operation permit can be processed by the department, the \$85 fee must be submitted, except when an amendment is initiated by the director, when the requested amendment will correct an error in the permit, when the amendment is for a DC compliance schedule or the Iowa Nutrient Reduction Strategy, or when there is a transfer of title or change in the address of the owner as noted in rule 567—60.12(455B).

(4) For individual nonstormwater NPDES and operation permits, the following annual fees as established in Iowa Code section 455B.197(3) are due by August 30 of each year:

1. Major municipal facility: \$1,275.
2. Minor municipal facility: \$210. For a city with a population of 250 or less, the maximum fee shall be \$210 regardless of how many individual nonstormwater NPDES permits the city holds.
3. Semipublic facility: \$340.
4. Major industrial facility: \$3,400.
5. Minor industrial facility: \$300.
6. Facilities that hold an operation permit: \$170.
7. Animal feeding operations covered by a nonstormwater NPDES permit: \$340.

(5) For a municipal water treatment facility with an individual nonstormwater NPDES permit, no fees shall be assessed.

(6) For a new facility covered by an individual nonstormwater NPDES or operating permit, a prorated annual fee, calculated by taking the annual fee amount multiplied by the number of months remaining before the next annual fee due date divided by 12, is due 30 days after the new permit is issued.

60.14(4) *Fee refunds.*

a. Individual and general permit application, permit, and annual fees may be refunded, completely or in part, at the director's discretion. Permittees who wish to receive fee refunds should notify the department electronically or in writing. Fees may be refunded under various circumstances, including but not limited to:

- (1) Submission of a duplicate fee;
- (2) Overpayment of a fee;
- (3) A fee was submitted but is not required; or
- (4) The department returns an application to the applicant without decision.

b. Fees shall not be refunded under any of the following conditions:

(1) If a permit or permit coverage is suspended, revoked, or modified, or if an activity is discontinued or ceased;

(2) If a permit is amended; or

(3) If a permit application is withdrawn by the applicant or denied by the department pursuant to 60.5(1).

This rule is intended to implement Iowa Code section 455B.197.

567—60.15(455B) Nutrient reduction exchange. The department shall maintain a registry of nonpoint source nutrient reduction practices installed by permittees. Practices listed in the registry may be eligible for future regulatory incentives.

567—60.16(455B) Validity of rules and applicability.

60.16(1) *Validity.* If any section, paragraph, sentence, clause, phrase or word of these rules, or any part thereof, be declared unconstitutional or invalid for any reason, the remainder of said rules shall not be affected thereby and shall remain in full force and effect.

60.16(2) *Applicability.* This chapter shall apply to all waste DSs treating or intending to treat sewage, industrial waste, or other waste except waste resulting from livestock or poultry operations. All livestock and poultry operations constituting animal feeding operations as defined in 567—Chapter 65 shall be governed by the requirements in 567—Chapter 65. However, the provisions of this chapter concerning NPDES permits that relate to notice and public participation, permit terms and conditions, permit reissuance, and monitoring, reporting and recordkeeping activities shall apply to animal feeding operations that are required to apply for and obtain an NPDES permit to the extent that such requirements are not inconsistent with 567—Chapter 65.

These rules are intended to implement Iowa Code chapter 455B, subchapter III, part 1.

ITEM 2. Rescind and reserve **567—Chapter 64**.

ITEM 3. Rescind and reserve **567—Chapter 66**.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item

23. Chapter 62, “Effluent and Pretreatment Standards: Other Effluent Limitations or Prohibitions” – Final Rule

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 62. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 62 establishes the requirements for National Pollutant Discharge Elimination System (NPDES) permit limits and contains restrictions on certain types of wastewater discharges. Pollutant limits included in Chapter 62 apply to facilities that discharge wastewater into Waters of the United States and to facilities that discharge wastewater to city wastewater treatment plants. This chapter was reviewed and edited consistent with Executive Order 10. The changes remove outdated requirements; shorten, simplify and clarify regulations and terminology; remove redundancy; and reference regulations that appear elsewhere in state or federal law.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 11, 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8626C. Two public hearings were held on January 28, 2025 and January 29, 2025.

Changes from NOIA: Twenty-nine people attended the first public hearing, and nineteen people attended the second public hearing. No public comments pertinent to this rulemaking were provided at the hearings. Two comment letters were received during the public comment period. This Final rule is substantially identical to the NOIA. Two minor changes were made to Chapter 62 in response to the comments.

Effective Date of Final Rule: June 18, 2025

Courtney Cswercko, Environmental Specialist Senior
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 62 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 62, “Effluent and Pretreatment Standards: Other Effluent Limitations or Prohibitions,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3) and 455B.173(3).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code section 455B.174, Clean Water Act Section 402, and 40 CFR §123.25.

Purpose and Summary

Chapter 62 establishes the requirements for National Pollutant Discharge Elimination System (NPDES) permit limits and contains restrictions on certain types of wastewater discharges. The Department establishes limits in NPDES permits for the pollutants in wastewater. Pollutant limits included in Chapter 62 apply to facilities that discharge wastewater into Waters of the United States and to facilities that discharge wastewater to city treatment plants.

The U.S. Environmental Protection Agency (EPA) delegated NPDES permitting authority to Iowa in 1978 for all facilities outside tribal lands, as granted under Clean Water Act section 402(b). Iowa’s NPDES rules must implement all of the provisions in 40 CFR §123.25, and these rules must be as stringent as the federal provisions.

This chapter was reviewed and edited consistent with Executive Order 10. The changes remove outdated requirements; shorten, simplify and clarify regulations and terminology;

remove redundancy; and reference regulations that appear elsewhere in state or federal law. Chapter 62's rule-referenced document, the Iowa Wasteload Allocation Procedure (www.iowadnr.gov/environmental-protection/water-quality/wasteload-allocations), has been updated to reflect the November 11, 2020, version already cited in Chapter 61.

Public Comment and Changes to Rulemaking

Notice of Intended Action (NOIA) for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8626C**.

Two public hearings were held. The first public hearing was held on January 28, 2025 from 1:00 AM to 2:00 PM virtually via Google meet. The second public hearing was held on January 29, 2025 from 1:00 AM to 2:00 PM virtually via Google meet.

Twenty-nine people attended the first public hearing, and nineteen people attended the second public hearing. No public comments pertinent to this rulemaking were provided at the hearings. Two comment letters were received during the public comment period.

This final rule is substantially identical to the NOIA. Two minor changes were made to Chapter 62 in response to the comments. Duplicative and confusing sentences were struck from the general secondary treatment requirements, and a citation to the Code of Federal Regulations was added in regards to less concentrated influent wastewater for combined sewers.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 62 and adopt the following **new** chapter in lieu thereof:

CHAPTER 62

EFFLUENT AND PRETREATMENT STANDARDS:

OTHER EFFLUENT LIMITATIONS OR PROHIBITIONS

567—62.1(455B) Prohibited discharges.

62.1(1) The discharge of any pollutant from a point source into a navigable water is prohibited unless authorized by an NPDES permit or by a permit issued pursuant to Section 404 of the CWA and certified pursuant to 567—subrule 61.2(6).

62.1(2) The prohibitions in 40 CFR §122.4 are adopted by reference.

62.1(3) The following discharges are prohibited:

a. The discharge of wastewater into a POTW or a semipublic sewage disposal system (DS) in volumes or quantities in excess of those to which a significant industrial user is committed

in either a treatment agreement described in 567—subrule 60.3(3) or a local control mechanism (in the case of a POTW with an approved pretreatment program); and

b. Discharge of the pollutants listed in 40 CFR §403.5(b) to a POTW, a semipublic sewage DS, or a PSDS.

62.1(4) Waste in such volumes or quantities as to exceed the design capacity of the treatment works, cause interference or pass through, or reduce the effluent quality below that specified in the operation permit of the treatment works is considered to be a waste that interferes with the operation or performance of a POTW or a semipublic sewage DS and are prohibited.

567—62.2(455B) Secondary treatment information: effluent standards for POTWs and semipublic sewage DSs.

62.2(1) *General.* This subrule describes the minimum level of effluent quality attainable by secondary treatment in terms of CBOD₅; suspended solids (SS), the pollutant parameter total suspended solids; and pH. The pollutant measurement CBOD₅ is used in lieu of the pollutant measurement BOD₅, as noted in 40 CFR §133.102(a)(4). All requirements for each pollutant measurement shall be achieved by POTWs and semipublic sewage DSs except as provided for in 62.2(2) and 62.2(3).

a. CBOD₅, as noted in 40 CFR §133.102(a)(4). The 30-day average percent removal shall not be less than 85 percent, and the percent removal shall be calculated by adding five units to the effluent CBOD₅ monitoring data and comparing that value to the influent BOD₅ monitoring data. Site-specific information on the relationship between BOD₅ and CBOD₅ shall be used in lieu of the five-unit relationship if such information is available.

b. SS, as noted in 40 CFR §133.102(b).

c. pH, as noted in 40 CFR §133.102(c).

62.2(2) *Special considerations.*

a. Combined sewers and percent removal. 40 CFR §133.103(a) is adopted by reference.

b. Industrial wastes and POTWs; standard secondary adjustment. 40 CFR §133.103(b) is adopted by reference.

c. Waste stabilization lagoons. Secondary treatment standards for waste stabilization lagoons are the same as those found in 62.2(1) concerning secondary treatment with the exception of the SS standards, which are as follows:

(1) The 30-day average shall not exceed 80 mg/l.

(2) The 7-day average shall not exceed 120 mg/l.

d. Less concentrated influent wastewater for separate and combined sewers; lower percent removal or mass loading limit. 40 CFR §133.103(d) and (e) are adopted by reference.

e. Upgraded facilities designed to operate in a split flow mode.

(1) The department may substitute either a lower percent removal requirement or a mass loading limit for the percent removal requirements in 62.2(1), provided that the treatment works is designed to split part of the primary treated wastewater flow around the secondary treatment unit(s). The design to accommodate split flow must be approved by the department and consistent with applicable design standards for wastewater treatment facilities. Subrule 62.2(2)“d” applies to facilities considered under this subrule. This subrule shall not be considered for facilities eligible for treatment equivalent to secondary treatment under 62.2(3).

(2) Any applicant requesting a permit limit adjustment pursuant to this subrule must include as part of the request an analysis of the infiltration and inflow (I/I) sources in the system and a plan for the elimination of all inflow sources such as roof drains, manholes, and storm sewer interconnections. Infiltration sources that can be economically eliminated or minimized shall be corrected.

f. Dilution. Nothing in this subrule or any other department rule shall be construed to encourage dilution of sewage as a means of complying with secondary treatment effluent standards. Reasonable efforts to prevent and abate infiltration of groundwater into sewers, and prevention or removal of any significant source of inflow, are required of all persons responsible for facilities subject to these standards.

62.2(3) *Treatment equivalent to secondary treatment.* 40 CFR §133.105 is adopted by reference. Treatment works shall be eligible for consideration of effluent limitations described for treatment equivalent to secondary treatment in accordance with 40 CFR §133.101(g). The pollutant measurement CBOD₅ will be used in lieu of the pollutant measurement BOD₅, as noted in 40 CFR §133.105(e).

567—62.3(455B) Federal standards and effluent limitations.

62.3(1) *Federal effluent and pretreatment standards.* The following are adopted by reference: 40 CFR Part 125, Subparts H, I, and J, and 40 CFR Parts 401 through 471.

62.3(2) *Federal toxic pollutant effluent standards.* 40 CFR Part 129 is adopted by reference.

62.3(3) *Effluent limitations and pretreatment requirements for sources for which there are no federal effluent or pretreatment standards.* For discharges of pollutants from sources that are not subject to the federal effluent standards adopted by reference in 62.3(1), the department shall establish effluent limitations, pretreatment requirements, or both, that represent the best professional judgment for pollutant reduction, consistent with the CWA and Iowa Code chapter 455B.

62.3(4) *Effluent limitations less stringent than the effluent limitation guidelines.* 40 CFR Part 125 Subpart D is adopted by reference.

567—62.4(455B) Effluent limitations or pretreatment requirements more stringent than the effluent or pretreatment standards.

62.4(1) *Effluent limitations necessary to meet water quality standards (WQSs).* No effluent, alone or in combination with the effluent of other sources, shall cause a violation of any applicable WQS. When it is found that a discharge that would comply with applicable effluent standards or effluent limitations in this chapter would cause a violation of WQSs, the discharge will be required to meet the water quality-based effluent limits (WQBELs) necessary to achieve the applicable WQSs as established in 567—Chapter 61. WQBELs shall be derived from a wasteload allocation (WLA) calculated for the discharge, as described in the Iowa Wasteload Allocation Procedure (WLAP) (Nov. 11, 2020), or a WLA calculated for a TMDL, whichever is more stringent, except that the daily sample maximum criteria for *E. coli* set forth in 567—Chapter 61 shall not be used as an end-of-pipe permit limitation.

62.4(2) *Pretreatment requirements more stringent than categorical standards.* The department or POTW may impose pretreatment requirements more stringent than the applicable categorical standards in 62.3(1) when more stringent requirements are necessary to prevent violations of WQSs, pass through, acute worker health or safety problems, or interference (including inhibiting or disrupting sludge use and disposal practices).

62.4(3) *Effluent limitations for pollutants not covered by effluent or categorical standards.* When a pollutant is not otherwise regulated under rules 567—62.2(455B) through 62.3(455B), effluent limits or pretreatment requirements may be imposed on a case-by-case basis.

a. Effluent limits shall be based on the effect of the pollutant in water and the feasibility and reasonableness of treating the pollutant.

b. Pretreatment requirements shall be based on the effect of the pollutant in water, the effect on the receiving treatment works (including pass through, inhibition, worker safety, and sludge disposal), and the feasibility and reasonableness of treating the pollutant.

567—62.5(455B) Effluent reuse.

62.5(1) *Manner of reuse.* Treated final effluent may be reused in a manner noted in this rule or as specified in an NPDES permit.

62.5(2) *Reuse for golf course irrigation.* Treated final effluent may be reused for golf course irrigation if one of the conditions described in 62.5(2)“a” and all of the conditions in 62.5(2)“b” are met.

a. The treated final effluent must meet one of the following conditions:

(1) A minimum total residual chlorine (TRC) level of 0.5 mg/l must be maintained at a minimum of 15 minutes' contact time of chlorine to wastewater prior to the irrigation of the golf course with treatment plant effluent; or

(2) Disinfected effluent shall be held in a retention pond with a detention time of at least 20 days prior to reuse as irrigation on a golf course. For this purpose, effluent may be disinfected using any common treatment technology, and either an existing pond or a pond constructed specifically for effluent retention may be used.

b. A golf course utilizing treated final effluent shall take all of the following actions:

(1) Clearly state on all scorecards that treated final effluent is used for golf course irrigation and oral contact with golf balls and tees should be avoided;

(2) Post signs that warn against consumption of water at all water hazards;

(3) Color code, label, or tag all piping and sprinklers associated with the distribution or transmission of the treated final effluent to clearly warn against the consumptive use of the contents; and

(4) Restrict public access to any area of the golf course where spraying is being conducted.

These rules are intended to implement Iowa Code chapter 455B, subchapter III, part 1.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item

24. Chapter 63, “Monitoring, Analytical and Reporting Requirements” – Final Rule

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 63. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: Chapter 63 establishes the monitoring, analytical methods, and reporting requirements for National Pollutant Discharge Elimination System (NPDES) permits and wastewater disposal operation permits. Wastewater monitoring using the correct methods and reporting results is essential to determine if a facility is complying with every permit limit. This chapter was reviewed and edited consistent with Executive Order 10. The changes remove outdated requirements; shorten, simplify and clarify regulations and terminology; remove redundancy; and reference regulations that appear elsewhere in state or federal law.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 11, 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8635C. Two public hearings were held on January 28, 2025 and January 29, 2025.

Changes from NOIA: Twenty-nine people attended the first public hearing, and nineteen people attended the second public hearing. No public comments pertinent to this rulemaking were provided at the hearings. Two comment letters were received during the public comment period. This Final rule is substantially identical to the NOIA. Three minor changes were made to Chapter 63 in response to the comments.

Effective Date of Final Rule: June 18, 2025

Courtney Cswercko, Environmental Specialist Senior
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 63 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 63, “Monitoring, Analytical and Reporting Requirements,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code section 455B.174.

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.173 and 455B.174, Clean Water Act §402(b), and 40 CFR §123.25.

Purpose and Summary

Chapter 63 establishes the monitoring, analytical methods, and reporting requirements for National Pollutant Discharge Elimination System (NPDES) permits and wastewater disposal operation permits. Wastewater monitoring using the correct methods and reporting results is essential to determine if a facility is complying with every permit limit. Monitoring also helps the Department of Natural Resources (Department) determine which pollutants need limits when a permit is renewed or amended.

The U.S. Environmental Protection Agency (EPA) delegated NPDES permitting authority to Iowa in 1978 for all facilities outside tribal lands, as granted under Clean Water Act section 402(b). Iowa’s NPDES rules must implement all of the provisions in 40 CFR § 123.25, and these rules must be as stringent as the federal provisions. Iowa also regulates wastewater disposal to the land and to waters of the state, as authorized in Iowa Code section 455B.174.

Chapter 63 was reviewed and edited consistent with Executive Order 10. The changes remove outdated requirements; shorten, simplify and clarify regulations and terminology;

remove redundancy; and reference regulations that appear elsewhere in state or federal law. Monitoring frequencies were slightly revised to account for only the number of samples the Department needs to reissue a permit and ensure proper treatment. Chapter 63's rule-referenced document, the Supporting Document for Permit Monitoring Frequency Determination, March 2022 (www.iowadnr.gov/Environmental-Protection/Water-Quality/NPDES-Wastewater-Permitting/NPDESRules), is unchanged.

Public Comment and Changes to Rulemaking

Notice of Intended Action (NOIA) for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025 as **ARC 8635C**.

Two public hearings were held. The first public hearing was held on January 28, 2025 from 1:00 AM to 2:00 PM virtually via Google meet. The second public hearing was held on January 29, 2025 from 1:00 AM to 2:00 PM virtually via Google meet.

Twenty-nine people attended the first public hearing, and nineteen people attended the second public hearing. No public comments pertinent to this rulemaking were provided at the hearings. Two comment letters were received during the public comment period.

This final rule is substantially identical to the NOIA. Three minor changes were made to Chapter 63 in response to the comments. A minor change to the bypass prohibition language was made to accord with the Code of Federal Regulations; the language regarding the notification of an unanticipated bypass was simplified, and the language regarding the inclusion of additional monitoring in operation records was clarified.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 63 and adopt the following **new** chapter in lieu thereof:

CHAPTER 63

MONITORING, ANALYTICAL AND REPORTING REQUIREMENTS

567—63.1(455B) Guidelines establishing test procedures for the analysis of pollutants.

Only the procedures prescribed in this chapter shall be used to perform the measurements indicated in an application for an operation permit submitted to the department, a report required to be submitted by the terms of an operation permit, and a certification issued by the department pursuant to Section 401 of the CWA.

63.1(1) *Identification of test methods, application for alternative test methods, and method modifications.*

a. Laboratories shall use methods promulgated or approved by the EPA or by the department in accordance with 567—subrule 83.5(1).

b. All parameters for which testing is required by a wastewater discharge permit, permit application, or administrative order, except operational performance testing, must be analyzed using one of the following:

(1) An approved method specified in 40 CFR §136.3;

(2) An alternative method that has been previously approved pursuant to 40 CFR §136.4 or 136.5; or

(3) A method identified by the department when no approved method is specified for the parameter in 40 CFR Part 136.

c. Applications for alternative test procedures shall follow the requirements of 40 CFR §136.4 or 136.5.

d. Method modifications shall follow the requirements of 40 CFR §136.6.

63.1(2) *Containers, preservation techniques and holding times.* All samples collected in accordance with the self-monitoring requirements defined in an operation permit shall comply with the container, preservation techniques, and holding time requirements as specified in 40 CFR §136.3, Table II (Required Containers, Preservation Techniques, and Holding Times). Sample preservation should be performed immediately upon collection, if feasible.

63.1(3) All laboratories conducting analyses required by this chapter must be certified in accordance with 567—Chapter 83. Routine on-site monitoring for pH, temperature, dissolved oxygen, total residual chlorine (TRC), other pollutants that must be analyzed immediately upon sample collection, settleable solids, physical measurements such as flow and cell depth, and operational monitoring tests specified in 63.3(4) are excluded from this requirement.

63.1(4) All instrumentation used for conducting any analyses required by this chapter must be properly calibrated according to the manufacturer's instructions.

567—63.2(455B) Monitoring activities and records. Permittees shall maintain records of all information resulting from any monitoring activities required in an operation permit and from any operational performance monitoring.

63.2(1) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity, in accordance with 40 CFR §122.41(j)(1).

63.2(2) Permittees shall retain, for a minimum of three years, all paper and electronic records of monitoring activities and results in accordance with 40 CFR §122.41(j)(2).

63.2(3) Records of monitoring activities and results shall include the information specified in 40 CFR §122.41(j)(3).

567—63.3(455B) Minimum self-monitoring requirements in permits.

63.3(1) *Organic waste dischargers.* The minimum self-monitoring requirements to be incorporated in operation permits for facilities discharging organic wastes shall be the appropriate requirements in Tables I and II of this chapter. Additional monitoring may be specified in operation permits in accordance with 63.3(5).

63.3(2) *Inorganic waste dischargers.* The self-monitoring requirements to be incorporated in operation permits for facilities discharging inorganic wastes shall be determined on a case-by-case evaluation of the impact of the discharge on the receiving stream, toxic or deleterious effects of wastewaters, complexity of the treatment process, history of noncompliance or any other factor which requires strict operational control to meet the effluent limitations of the permit, as described in the Supporting Document for Permit Monitoring Frequency Determination, March 2022, hereafter referred to as the Supporting Document, located on the department's website. Grab samples shall be taken in accordance with 567–63 Table I (455B) Superscript 4, and composite samples shall be taken in accordance with 567–63 Table I (455B) Superscript 4a or 4c.

63.3(3) *Significant industrial users (SIUs) of publicly owned treatment works (POTWs).*

Monitoring for SIUs shall be determined as described in the Supporting Document, located on the department's website. Monitoring results shall be submitted to the department in accordance with the reporting requirements in the operation permit. The monitoring program of a POTW with a department-approved pretreatment program may be used in lieu of the Supporting Document.

63.3(4) *Operational performance monitoring.* Operational performance monitoring for treatment unit process control shall be conducted to ensure that a facility is properly operated in accordance with its design. The results of any operational performance monitoring need not be reported to the department but shall be maintained in accordance with rule 567—63.2(455B), and shall be submitted to the department upon request. Additional operational performance monitoring may be specified in operation permits in accordance with 63.3(5). The results of operational performance monitoring specified in an operation permit shall be submitted to the department in accordance with the permit requirements.

63.3(5) *Additional monitoring.*

a. Additional monitoring may be specified in operation permits in accordance with this subrule, as follows:

- (1) For facilities discharging organic wastes;
- (2) As operational performance monitoring; or
- (3) For the purposes of whole effluent toxicity (WET) testing.

b. Additional monitoring requirements in operation permits shall be based on a case-by-case evaluation of the impact of the discharge on the receiving stream, toxic or deleterious effects of wastewaters, industrial contribution to the system, complexity of the treatment process, history of noncompliance or any other factor which requires strict operational control to meet the effluent limitations of the permit, as described in the Supporting Document.

63.3(6) *Modification of minimum monitoring requirements.* Monitoring requirements may be modified or reduced at the director's discretion or when requested by the permittee, in accordance with ~~567—~~paragraph 60.3(6) "e".

567—63.4(455B) Whole effluent toxicity (WET) testing requirements in permits.

63.4(1) *WET testing.*

a. All major municipal and industrial dischargers shall conduct WET testing. Additional toxicity monitoring may be specified in operation permits for major or minor facilities in accordance with 63.3(5).

b. All dischargers required to conduct WET tests shall conduct, at a minimum, one valid WET test annually. The testing requirements will be placed in the operation permit for each discharger required to conduct this testing. A "valid WET test" is one that meets the testing requirements in 63.4(2)"*a.*"

c. Any WET test completed by the department or other agency and conducted according to the procedures stated or referenced in this rule may be used to determine compliance with an operation permit.

63.4(2) *Testing procedures.*

a. All WET tests shall be conducted as follows:

(1) Use a 24-hour composite sample of the effluent collected at the location stated in the operation permit;

(2) Commence within 36 hours of sample collection;

(3) Use the test methods referenced in 40 CFR Part 136 and protocols described in the EPA document EPA-821-R-02-012, Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, 5th edition, October 2002;

(4) Use the water flea (*Ceriodaphnia dubia*) and the fathead minnow (*Pimephales promelas*);

- (5) Be conducted as static pass/fail;
- (6) Include the following for each organism: a 100 percent culture water control series, a 100 percent effluent series, and any additional dilution series specified in the operation permit;
- (7) Last for 48 hours, at which time the mortality will be determined for all tests; and
- (8) Be conducted by a laboratory certified in Iowa.

b. All WET test results, including results of any tests performed at a greater frequency than required in the operation permit, shall be submitted to the department within 30 days of test completion.

63.4(3) *Positive result.* If there is a positive toxicity test result in the diluted effluent sample from a valid WET test, the following requirements apply unless the exception in paragraph “d” of this subrule is applicable. For the purposes of this rule, “positive toxicity test result” means a statistically significant difference of mortality rate between the control and the diluted effluent test.

a. At a minimum, the discharger shall conduct quarterly WET tests until three successive tests are determined not to be positive, after which the toxicity testing shall be resumed as specified in the operation permit.

b. If the discharger has two successive positive valid diluted WET test results or three positive test results out of five valid diluted tests, the discharger shall conduct a toxicity reduction evaluation (TRE). A TRE is a stepwise process, similar to that found in EPA Document 600/2-88/062, that combines effluent toxicity tests and analysis of the chemical characteristics of the effluent to determine the cause of the effluent toxicity or the treatment methods that will reduce the effluent toxicity, or both.

c. The discharger may be required to conduct instream monitoring or other analyses in conjunction with the TRE. If at any time during the course of conducting a TRE there are three consecutive follow-up toxicity test results for the diluted sample which are not positive,

the discharger will be considered as in compliance and work on the TRE may cease. WET testing shall then resume as specified in the operation permit. Nothing in these rules shall preclude the department from taking enforcement action beyond that described in these rules.

d. When the pretest chemical analysis for un-ionized ammonia nitrogen (NH₃-N) or TRC on the diluted effluent sample exceeds the concentrations given below, a positive test result is likely to have been caused by high concentrations of un-ionized NH₃-N or TRC, and the test result will not be used to determine if follow-up testing is needed.

(1) Un-ionized NH₃-N—0.9 mg/l

(2) TRC—0.1 mg/l

567—63.5(455B) Self-monitoring and reporting for animal feeding operations.

63.5(1) The following self-monitoring requirements may be imposed on an animal feeding operation in any operation permit issued for such an operation.

- a.* Measurement of liquid level in a waste storage facility on a periodic basis.
- b.* Measurement of daily precipitation, as appropriate.
- c.* Sampling and analysis of groundwater as necessary to determine effects of wastewater application.
- d.* Other measurements necessary to evaluate the adequacy of a waste disposal system.

63.5(2) Reports of the self-monitoring results shall be submitted to the appropriate regional department field office (hereafter referred to as FO) quarterly. The quarterly reports shall cover the periods January through March, April through June, July through September, and October through December. The quarterly report for each period shall be submitted by the tenth day of the month following the quarter being reported.

567—63.6(455B) Bypasses and upsets.

63.6(1) *Prohibition.* Bypasses from any portion of a treatment facility or from a sanitary sewer collection system designed to carry only sewage are prohibited. The department may

not assess a penalty against a permittee for a bypass if the permittee has complied with all of the following:

- a.* The bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
- b.* There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
- c.* The permittee submitted the information required in 63.6(2), 63.6(3), and 63.6(5).

63.6(2) *Request for anticipated bypass.* Except for bypasses that occur as a result of mechanical failure or acts beyond the control of the owner or operator of a waste disposal system (unanticipated bypasses), the owner or operator shall obtain written permission from the department prior to any discharge of sewage or wastes from a waste disposal system not authorized by a discharge permit. The director may approve an anticipated bypass after considering its adverse effects if the director determines that it will meet the conditions in 63.6(1).

- a.* The request for a bypass shall be submitted in writing to the appropriate FO at least ten days prior to the expected date of the event.
- b.* The request shall include all of the following:
 - (1) The reason for the bypass;
 - (2) The date and time the bypass will begin;
 - (3) The expected duration of the bypass;
 - (4) An estimate of the amount of untreated or partially treated sewage or wastewater that will be discharged;

- (5) The location of the bypass;
- (6) The name of any body of surface water that will be affected by the bypass; and
- (7) Any actions the owner or operator proposes to take to mitigate the effects of the bypass upon the receiving stream or other surface water.

63.6(3) *Notification of unanticipated bypass or upset and public notices (PNs).* In the event that a bypass or upset occurs without prior notice having been provided pursuant to 63.6(2) or as a result of mechanical failure or acts beyond the control of the owner or operator, the owner or operator of the treatment facility or collection system shall notify the department by telephone as soon as possible but not later than 24 hours after the onset or discovery.

a. Notification shall be made by contacting the appropriate FO. After-hours notification may be made by calling the Department of Natural Resources emergency response hotline at 515.725.8694.

b. Notification shall include information on as many items listed in 63.6(3) “d”(1) through 63.6(3) “d”(6) as available information will allow.

c. Upon notification, the department shall determine if a PN for an unanticipated bypass is necessary. If the department determines that a PN is necessary, the owner or operator of the treatment facility or the collection system shall prepare a PN.

d. A written submission describing the bypass shall also be provided to the appropriate FO within five days of the time the permittee becomes aware of the bypass. The written submission shall contain the following:

- (1) The reason for the bypass, including the amount and duration of any rainfall event that may have contributed to the bypass;
- (2) The date and time of onset or discovery of the bypass;
- (3) The duration of the bypass;

(4) An estimate of the amount of untreated or partially treated sewage or wastewater that was discharged;

(5) The location of the bypass; and

(6) The name of any body of surface water that was affected by the bypass.

63.6(4) *Monitoring, disinfection, and cleanup.* The owner or operator of the treatment facility or collection system shall perform any additional monitoring, sampling, or analysis of the bypass or upset requested by the FO and shall comply with department instructions intended to minimize the effect of a bypass or upset on the receiving water of the state. In addition, the department may require the following:

a. Temporary disinfection, depending on the volume and duration of the bypass, the classification of the stream affected by the bypass, and the time of year during which the bypass occurs;

b. Cleanup of any debris and waste materials deposited in the area affected by the bypass; or

c. Lime application to the ground surface or disinfection of the affected area with chlorine solution.

63.6(5) *Reporting of subsequent findings and additional information requested by the department.* All subsequent findings and laboratory results concerning a bypass shall be submitted in writing to the appropriate FO as soon as they become available. Any additional information requested by the department concerning the steps taken to minimize the effects of a bypass shall be submitted within 30 days of the request.

63.6(6) *Upset.* 40 CFR §122.41(n) is adopted by reference.

567—63.7(455B) Submission of operation records.

63.7(1) *Electronic reporting.*

a. Except as provided in this rule and 63.3(4) and 63.5(2), operation records required by NPDES permits shall be submitted electronically to the department within 15 days following the close of the reporting period specified in 63.7(5) and in accordance with monitoring requirements derived from this chapter and incorporated in the NPDES permit.

b. Operation records required by operation permits shall be submitted to the department within 15 days following the close of the reporting period specified in 63.7(5) and in accordance with monitoring requirements derived from this chapter and incorporated in the operation permit.

63.7(2) *Temporary or permanent paper submittal of operation records.* Upon satisfaction of the following criteria and written approval from the department, temporary or permanent paper submittal of operation records may be allowed in lieu of electronic reporting.

a. *Written request for paper submittal.*

(1) To obtain an approval for temporary or permanent paper submittal of operation records, a permittee must submit a paper copy of a written request to the department's NPDES section.

The written request for paper submittal must include all of the following:

1. The facility name;
2. The individual NPDES permit number or GP authorization number;
3. The facility address;
4. The owner's name and contact information;
5. The name and contact information of the person submitting operation records (if different than the owner); and
6. The reason for the request, including a justification of why electronic submission is not feasible at this time.

(2) Requests for paper submittal that do not contain all of the above information will not be considered. Electronic (email) requests for paper submittal will not be considered.

b. Temporary paper submittal.

(1) The department will approve or deny a request for temporary paper submittal of operation records within 60 days of receipt. Paper submittal requests shall be approved or denied at the director's discretion.

(2) All approvals for temporary paper submittal will expire five years from department approval. After an approval for temporary paper submittal expires, the permittee must submit all operation records electronically, unless another approval is obtained.

(3) Approved temporary paper submittals are nontransferable.

c. Permanent paper submittal.

(1) The department will approve or deny a request for permanent paper submittal of operation records within 60 days of receipt. Permanent paper submittal approvals shall only be granted to facilities and entities owned or operated by members of religious communities that choose not to use certain modern technologies (e.g., computers, electricity). Permanent approvals for paper submittal shall not be granted to any other facilities or entities.

(2) Approved permanent paper submittals are nontransferable.

d. Paper copies of operation records. All permittees who have received temporary or permanent paper submittal approvals must submit paper copies of all operation records to the department within 15 days following the close of the reporting period specified in 63.7(5) and in accordance with monitoring requirements derived from this chapter and incorporated in the NPDES permit.

63.7(3) *Electronic reporting pursuant to NPDES general permits (GPs).* Both electronic and paper reporting options are available to permittees covered under GP No. 5. Paper operation records are accepted under GP No. 4.

63.7(4) *Episodic paper submittal of operation records.* In accordance with this subrule, episodic paper submittal of operation records may be allowed in lieu of electronic reporting.

The department shall provide notice, individually or through means of mass communication, regarding when episodic paper submittal is allowed, the facilities and entities that qualify for episodic paper submittal, and the likely duration of episodic paper submittal. The department shall determine if and when episodic paper submittal is warranted.

a. Episodic paper submittal is only allowed under the following circumstances:

(1) Large-scale emergencies involving catastrophic circumstances beyond permittee control, such as forces of nature (e.g., hurricanes, floods, fires, earthquakes) or other national disasters.

(2) Prolonged electronic reporting system outages (i.e., outages longer than 96 hours).

b. Permittees are not required to request episodic paper submittal. If the department determines that episodic paper submittal is warranted, a permittee shall submit paper copies of all operation records to the department within 15 days following the close of the reporting period specified in 63.7(5) and in accordance with monitoring requirements derived from this chapter and incorporated in the NPDES permit.

c. Episodic paper submittal is not transferable and cannot last more than 60 days.

63.7(5) *Submission frequency.* Except as provided in 63.3(4) and 63.5(2), or as specified in an NPDES GP issued in accordance with 567—subrule 60.4(2), operation records required by these rules shall be submitted at monthly intervals. The department may vary the submission frequency in certain cases for only non-NPDES permits. Variation from the monthly interval shall be made only under such conditions as the department may prescribe in writing to the permittee.

567—63.8(455B) Operation records; content, forms, certification, and signature.

63.8(1) *Content.* Operation records shall include the results of all monitoring specified in or authorized by this chapter or incorporated in the operation permit. The results of any additional monitoring for parameters included in the operation permit performed at the

compliance monitoring point and analyzed according to 40 CFR Part 136 shall be included in the calculation and reporting of any data submitted in accordance with this chapter and the operation permit.

63.8(2) *Forms.* Operation record forms shall be those provided by the department unless a permittee has obtained department approval to use an alternative reporting form. Properly completed reporting forms and all attachments shall be submitted in accordance with department instructions.

63.8(3) *Certification and signatory requirements.* All operation records required by these rules shall include certification that attests that all information contained therein is representative and accurate. Each operation record, including those for operation permits, shall be signed in accordance with 40 CFR §122.22. For electronic submissions of operation records, a signed paper copy of the record that was submitted electronically must be maintained at the facility for a minimum of three years.

567—63.9(455B) Other reporting and notice.

63.9(1) *Twenty-four-hour reporting.* Pursuant to 40 CFR §122.41(l)(6), all permittees shall report any permit noncompliance that may endanger human health or the environment. Information shall be provided orally to the appropriate FO within 24 hours from the time the permittee becomes aware of the circumstances. In addition, a written submission containing the information required in 40 CFR §122.41(l)(6)(i) must be provided to the appropriate FO within five days of the occurrence.

63.9(2) *Planned changes.* Pursuant to 40 CFR §122.41(l)(1), a permittee shall give notice to the appropriate FO 30 days prior to any planned physical alterations or additions to the permitted facility.

63.9(3) *Anticipated noncompliance.* Pursuant to 40 CFR §122.41(l)(2), a permittee shall give advance notice to the appropriate FO of any activity which may result in noncompliance with permit requirements.

63.9(4) *Other noncompliance.* Pursuant to 40 CFR §122.41(l)(7), a permittee shall provide a written description of all instances of noncompliance not reported under 63.9(1) or 567—subrule 60.7(4) at the time operation records are submitted. The written description shall contain the information required in 40 CFR §122.41(l)(6)(i).

63.9(5) *Notice exemption.* Notice under this subrule is only required when previous notice has not been given to any other section of the department.

63.9(6) *Other information.* Pursuant to 40 CFR §122.41(l)(8), if a permittee becomes aware that it failed to submit any relevant facts in any report to the director, the permittee shall promptly submit such facts or information.

63.9(7) *Applicability.* The other reporting and notice requirements in this rule apply to all NPDES permits and apply as specified in operation permits.

567—63.10(455B) Sampling procedures for monitoring wells. The following steps shall be taken prior to monitoring well sampling.

63.10(1) Measure depth from top of well head casing to water table.

63.10(2) Calculate quantity of water to be flushed from well using the formula:

Gallons to be pumped = $0.221 d^2 h$, where:

d = well diameter in inches

h = depth in feet of standing water in well prior to pumping

63.10(3) Pump well.

63.10(4) Measure depth from well head casing to water table after pumping.

63.10(5) Wait for well to recharge to or near static water level prior to sampling.

**Table I — Minimum Self-Monitoring in Permits for Organic Waste Dischargers
Controlled Discharge Wastewater Treatment Plants**

Wastewater Parameter	Sampling ⁵ Location	Sample Type ⁴	Frequency by PE ^{1,5,6}			
			<100	101-500	501-1,000	>1,001
Flow ²	Raw	24-Hr Total	1/Week	Daily	Daily	Daily
	Final	Instantaneous	2/Week During Drawdown	Daily During Drawdown		
BOD ₅	Raw	24-Hr Composite	--	--	--	1/3 Months
CBOD ₅	Cell Contents	Grab	At least two weeks prior to drawdown ³			
	Final	Grab	1/Drawdown ⁷	Twice during drawdown		
Total Suspended Solids (TSS)	Cell Contents	Grab	At least two weeks prior to drawdown ³			
	Raw	24-Hr Composite	--	--	--	1/3 Months
	Final	Grab	1/Drawdown ⁷	Twice during drawdown		
Ammonia Nitrogen (NH3-N)	Final	Grab	1/Drawdown	Twice during drawdown		
<i>E. coli</i>	Final	Grab	Twice During Drawdown			
pH ⁸	Raw	Grab	--	--	--	1/3 Months
	Final	Grab	1/Drawdown	1/Drawdown	Twice During Drawdown	1/Week During Drawdown
Cell Depth ⁹	Each Cell	Measurement	1/Week	1/Week	1/Week	2/Week
Total Residual Chlorine (TRC) ¹⁰	Final	Grab	1/Drawdown	1/Drawdown	Twice during drawdown	

- 1 - The PE (population equivalent) shall be computed on the basis of the original engineering design criteria for the facility and any modifications thereof. Where such design criteria are not available, the PE shall be computed using 0.167 pounds of BOD₅ per capita per day.
- 2 - Facilities serving a PE less than 100 are not required to provide continuous flow measurement but are required to provide manual flow measurement at the specified frequency. Facilities serving a PE greater than 100 must provide continuous flow measurement of the raw waste but need only provide manual flow measurement of the final effluent. Acceptable flow measurement and recording techniques shall be those described in the Iowa Wastewater Facilities Design Standards, effective June 18, 2025.
- 3 - The sampling that is required at least two weeks prior to lagoon drawdown (pre-discharge sampling) shall be collected at a point near the outlet structure and analyzed at least two weeks prior to an anticipated discharge to demonstrate that the wastewater is of such quality to meet the effluent limitations in the permit. The CBOD₅ and TSS results must be compared with the 30-day average effluent limits. If the results are less than the 30-day average limits, the permittee may isolate the final cell and draw down the lagoon cell. If the pre-discharge sample results exceed the 30-day average effluent limits for either CBOD₅ or TSS, the permittee must contact the appropriate FO for guidance before beginning to discharge.
- 4 - Sample types are defined as follows:
 "Grab Sample" means a representative, discrete portion of sewage, industrial waste, other waste, surface water or groundwater taken without regard to flow rate.
 "24-Hour Composite" means:
 - a. A sample made by collecting a minimum of six grab samples taken four hours apart and combined in proportion to the flow rate at the time each grab sample was collected, unless otherwise noted in b. Generally, grab samples should be collected at 8 a.m., 12 p.m. (noon), 4 p.m., 8 p.m., 12 a.m. (midnight), and 4 a.m. on weekdays (Monday through Friday) unless local conditions indicate another more appropriate time for sample collection.
 - b. For a POTW with an SIU, a sample made by collecting a minimum of 12 grab samples taken two hours apart and combined in proportion to the flow rate at the time each grab sample was collected. Generally, grab samples should be collected at 8 a.m., 10 a.m., 12 p.m. (noon), 2 p.m., 4 p.m., 6 p.m., 8 p.m., 10 p.m., 12 a.m. (midnight), 2 a.m., 4 a.m., and 6 a.m. on weekdays (Monday through Friday) unless local conditions indicate another more appropriate time for sample collection.
 - c. An automatic composite sampling device may also be used for collection of flow-proportioned or time-proportioned composite samples.
- 5 - Raw wastewater samples shall be taken continuously (year-round) at the specified frequency. Final effluent wastewater samples shall be taken only during the drawdown period. The first final effluent sample shall be taken the third day after the drawdown begins, and subsequent samples shall be taken at the specified frequencies. For final effluent samples that are required to be taken twice during drawdown, the first sample shall be taken the third day after the drawdown begins, and the second sample shall be taken between three and five days before the drawdown ends.
- 6 - If a facility has a PE greater than 3,000 or an SIU, additional monitoring may be required.
- 7 - One-cell controlled discharge lagoon facilities with a PE less than 100 must perform final effluent sampling for CBOD₅ and TSS twice during drawdown in accordance with superscript #5.
- 8 - pH can be monitored using electrometric measurement or an automated electrode, pursuant to 40 CFR Part 136.

- 9 - Cell Depth monitoring must be conducted year-round (not exclusively during drawdown periods). It may be applied to lagoon cells at continuous discharge wastewater treatment facilities on a case-by-case basis.
- 10 - TRC monitoring is only required for facilities with TRC effluent limitations.

**Table II — Minimum Self-Monitoring in Permits for Organic Waste Dischargers
Continuous Discharge Wastewater Treatment Plants**

Wastewater Parameter	Sampling Location	Sample Type ^{3,11}	Frequency by PE ^{1,6}					
			≤ 100	101-500	501-1,000	1,001-3,000	3,001-15,000	>15,001
Flow ²	Raw or Final	24-Hr Total	1/week	Daily	Daily	Daily	Daily	Daily
BOD ₅	Raw	24-Hr Comp.	1/6 Months	1/3 Months	1/Week	1/Week	2/Week	2-5/Week ⁵
CBOD ₅	Final	24-Hr Comp.	1/3 Months	1/Month	1/Week	1/Week	2/Week	2-5/Week ⁵
Total Suspended Solids (TSS)	Raw	24-Hr Comp.	1/6 Months	1/3 Months	1/Month	1/2 Weeks	1/Week	2-5/Week ⁵
	Final	24-Hr Comp.	1/3 Months	1/3 Months	1/Month	1/2 Weeks	1/Week	2-5/Week ⁵
Ammonia Nitrogen (NH ₃ -N) ¹⁰	Final	24-Hr Comp.	1/Month	1/Month	1/Week	1/Week	2/Week	2-5/Week ⁵
TKN ⁸	Raw	24-Hr Comp.	—	—	—	—	1/Month	1/Month
Total Nitrogen ⁹	Final	24-Hr Comp.	—	—	—	—	1/3 Months	1/2 Months
Total Phosphorus ⁹	Final	24-Hr Comp.	—	—	—	—	1/3 Months	1/2 Months
pH ¹²	Raw	Grab	—	—	1/Week	1/Week	2/Week	2-5/Week ⁵
	Final	Grab	1/3 Months	1/Month	1/Week	1/Week	2/Week	5/Week
<i>E. coli</i> ^{4,7}	Final	Grab	5 samples, 1/3 Months	5 samples, 1/3 Months	5 samples, 1/3 Months	5 samples, 1/3 Months	5 samples, 1/3 Months	5 samples, 1/3 Months
Temperature	Raw	Grab	—	—	1/Week	1/Week	2/Week	2-5/Week ⁵
	Final	Grab	1/3 Months	1/Month	1/Week	1/Week	2/Week	2-5/Week ⁵
Total Residual Chlorine (TRC) ¹³	Final	Grab	1/Week	1/Week	2/Week	2/Week	3/Week	5/Week

- 1 - See Superscript #1, Table I.
- 2 - See Superscript #2, Table I. Both raw and final flow monitoring may be required if the raw and final wastewater flows may be different for any reason.
- 3 - See Superscript #4, Table I.
- 4 - Analysis is required only when the facility discharges directly to a stream designated as Class A1, A2, or A3 in 567—Chapter 61 or there is a reasonable potential for the discharge to affect a stream designated as Class A1, A2, or A3.
- 5 - The frequency of sample collection and analysis shall be increased by 1/week according to the following: 15,001 to 30,000 – 2/week; 30,001 to 45,000 – 3/week; 45,001 to 75,000 – 4/week; > 75,001 – 5/week.
- 6 - The requirements for SIUs shall be those specified in the permit for final effluent monitoring.
- 7 - Bacteria Monitoring. All facilities must collect and analyze a minimum of five *E. coli* samples in one calendar month during each three-month period (quarter) during the appropriate recreation season associated with the receiving stream designation as specified in 567—subrule 61.3(3). For sampling required during the recreational season, March 15 to November 15, the three-month periods are March through May, June through August, and September through November. For year-round sampling, the three-month periods are January through March, April through June, July through September, and October through December. For each three-month period, the operator must take five samples during one calendar month, resulting in 15 samples in one year for sampling required during the recreation season and 20 samples per year for sampling required year-round.
The following requirements apply to the individual samples collected in one calendar month:
 - a. Samples must be spaced over one calendar month.
 - b. No more than one sample can be collected on any one day.
 - c. There must be a minimum of 48 hours between each sample.
 - d. No more than two samples may be collected in a period of seven consecutive days.
 The geometric mean must be calculated using all valid sample results collected during a month. The geometric mean formula is as follows: Geometric Mean = (Sample one × Sample two × Sample three × Sample four × Sample five...Sample N)^(1/N), which is the Nth root of the result of the multiplication of all of the sample results where N = the number of samples. If a sample result is a less than value, the value reported by the lab without the less than sign shall be used in the geometric mean calculation.
- 8 - Additional TKN monitoring may be required if the facility has one or more significant industrial users or has effluent ammonia violations.
- 9 - Total nitrogen (as N) is defined as TKN (as N) plus nitrate (as N) plus nitrite (as N). Nitrate + nitrite can be analyzed together or separately. Total phosphorus shall be reported as P. Analyses must be performed by a laboratory certified in Iowa.

- 10 - NH₃-N monitoring is only required for facilities with NH₃-N effluent limitations.
- 11 - For aerated lagoons, 24-hour composite samples are not required on the final effluent; grab samples are acceptable.
- 12 - See Superscript #8, Table I.
- 13 - See Superscript #10, Table I.

These rules are intended to implement Iowa Code section 455B.173.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item (**indicates proposed consent item*)

***25. Chapter 67, “Standards for the Land Application of Sewage Sludge” – Final Rule**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 67. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: Chapter 67 establishes the requirements for the land application of sludge generated as a byproduct of the treatment of domestic wastewater. This chapter was reviewed and edited consistent with Executive Order 10. Changes include the removal of obsolete and duplicative language and revisions to adopt federal regulations and definitions by reference.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 11, 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8638C. Two public hearings were held on January 28, 2025 and January 29, 2025.

Changes from NOIA: Twenty-nine people attended the first public hearing, and nineteen people attended the second public hearing. No public comments pertinent to this rulemaking were provided at the hearings. One comment letter was received during the public comment period. This Final rule is identical to the NOIA.

Effective Date of Final Rule: June 18, 2025

Courtney Cswercko, Environmental Specialist Senior
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 67 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 67, “Standards for the Land Application of Sewage Sludge,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3) and 455B.173(3).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code chapters 174 and 183 and sections 455B.173 and 455B.304, 40 CFR §503 and 40 CFR §127.

Purpose and Summary

Chapter 67 establishes the requirements for the land application of sewage sludge generated as a byproduct of the treatment of domestic wastewater. The chapter was reviewed and edited consistent with Executive Order 10. The chapter was streamlined to remove obsolete and duplicative language, including revisions to adopt federal regulations and definitions by reference.

Public Comment and Changes to Rulemaking

Notice of Intended Action (NOIA) for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8638C**.

Two public hearings were held. The first public hearing was held on January 28, 2025 from 1:00 AM to 2:00 PM virtually via Google meet. The second public hearing was held on January 29, 2025 from 1:00 AM to 2:00 PM virtually via Google meet.

Twenty-nine people attended the first public hearing, and nineteen people attended the second public hearing. No public comments pertinent to this rulemaking were provided at the hearings. One comment letter was received during the public comment period.

This final rule is identical to the NOIA.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 67 and adopt the following **new** chapter in lieu thereof:

CHAPTER 67

STANDARDS FOR THE LAND APPLICATION OF SEWAGE SLUDGE

567—67.1(455B) Purpose and scope.

67.1(1) This chapter establishes standards for the land application of sewage sludge generated during the treatment of domestic sewage in a treatment works. This chapter applies to any generator, applicator, or both, and to sewage sludge applied to the land.

a. In areas that are not specifically addressed in this chapter or in 567—Chapter 68, but which are addressed in federal regulations for sewage sludge applied to land at 40 CFR Part 503, the federal regulations shall apply under this rule and are hereby adopted by reference under this chapter.

b. On a case-by-case basis, the department may impose requirements for the land application of sewage sludge in addition to or more stringent than the requirements in this chapter when necessary to protect public health and the environment from any adverse effect of a pollutant in the sewage sludge.

67.1(2) Sewage sludge generators shall ensure that the applicable requirements in this chapter are met when sewage sludge is land applied. If a sewage sludge generator determines that a person being supplied sewage sludge for land application is not complying with applicable requirements of the land application program, the generator shall work with the applicator to obtain compliance with the requirements. If subsequent compliance cannot be achieved, the generator shall not supply additional sewage sludge to the applicator.

67.1(3) *Exclusions.* In accordance with 40 CFR §503.6, this chapter does not establish requirements for the land application of sludge generated at an industrial facility, hazardous sewage sludge, sewage sludge with a polychlorinated biphenyl (PCB) concentration of 50 mg/kg or higher, incinerator ash, grit and screenings, or drinking water treatment sludge.

567—67.2(455B) Sampling and analysis.

67.2(1) Any sewage sludge generator who intends to land apply sewage sludge shall:

- a.* Sample and analyze the waste to determine whether it meets the criteria for sewage sludge for Class I, II, or III; and
- b.* Analyze the waste to determine if any sources exist which may contribute significant quantities of potentially hazardous chemicals or other toxic substances. If any are found, the generator shall inform the department of their presence and shall analyze the waste for chemicals or substances in accordance with department guidelines.

67.2(2) Unless rules for specific programs under EPA or department authority provide otherwise, or unless other methods are approved by the department for a specific situation, samples taken and analyses made to document contamination under this chapter shall be conducted in accordance with the methods described in 567—67.9(455B).

567—67.3(455B) Land application plan. All sewage sludge generators wishing to land apply sewage sludge shall establish and maintain in writing a long-range plan for land application of sewage sludge. A copy of this plan shall be available at the facility for department inspection.

67.3(1) The long-range plan shall be:

- a.* Developed for a minimum period of five years;
- b.* Updated annually; and
- c.* Designed to ensure that land application can be conducted in accordance with the requirements of this chapter.

67.3(2) At a minimum, the long-term plan shall contain the following information in detail for the next calendar year and in general terms for the following four years:

- a.* An outline of the sewage sludge sampling schedule and procedures that will be followed;

b. A determination of the amount of land required for proper land application of the sewage sludge;

c. Identification of the land areas and appropriate land application methods that will be used;

d. For each land application area, the names of the landowners and the applicators, an identification of any legal arrangements related to the use of an area, and an outline of any restrictions or special conditions that exist regarding the use of an area for the land application of sewage sludge;

e. An overall land application schedule, including the areas being used, the time of year that land application will occur on each area, and the estimated application rate for each area; and

f. A determination of all of the following:

(1) The types and capacities of the required application equipment, including an outline of how the equipment will be made available and who will be responsible for conducting land application operations;

(2) The types and capacities of necessary sludge storage and handling structures;

(3) Whether any additional sludge storage or handling facilities are needed; and

(4) A timeline to construct or obtain any required additional sludge storage, handling, or application facilities or equipment.

567—67.4(455B) Special definitions.

67.4(1) *Definitions in the Iowa Code.* “Sewage sludge” is defined in Iowa Code section 455B.171(34). For the purposes of this chapter, the term includes materials derived from sewage sludge.

67.4(2) *Definitions in the CFR.* The following terms applicable to this chapter are defined in the referenced locations:

a. 40 CFR §503.9: “dry weight basis,” “food crops,” and “person who prepares sewage sludge.”

b. 40 CFR §503.11: “agronomic rate,” “annual whole sludge application rate,” “bulk sewage sludge,” and “cumulative pollutant loading rate.”

c. 40 CFR §503.31: “land with a high potential for public exposure” and “land with a low potential for public exposure.”

67.4(3) The following definitions apply to this chapter:

“Applicator” or *“sewage sludge applicator”* means any person who applies sewage sludge to the land.

“Class I sewage sludge” means sewage sludge that meets the criteria under 67.6(1).

“Class II sewage sludge” means sewage sludge that meets the criteria under 67.7(1).

“Class III sewage sludge” means any sewage sludge that cannot meet either Class I sewage sludge criteria or Class II sewage sludge criteria.

“Generator” or *“sewage sludge generator”* means any person who generates sewage sludge, who derives a material from sewage sludge, or both.

567—67.5(455B) Permit requirements. Prior to any land application of sewage sludge, a permit must be obtained by the sewage sludge generator in accordance with the following requirements:

67.5(1) The permit for the land application of sewage sludge produced by a wastewater treatment facility that has been issued a construction permit from the department will be issued concurrently and as part of an operation permit or NPDES permit. The issuance process and permit terms will be the same as those specified for NPDES permits in 567—Chapter 60.

67.5(2) The department will review, on a case-by-case basis, requests for a permit to land apply sewage sludge or any material derived from sewage sludge if the sewage sludge is

produced outside of the state of Iowa or produced by a wastewater treatment plant that has not been issued a construction permit from the department.

567—67.6(455B) Land application requirements for Class I sewage sludge.

67.6(1) *Class I criteria.* Class I sewage sludge is sewage sludge that meets the pollutant concentrations in 67.6(1) “a,” the Class A pathogen reduction requirements in 67.6(1) “b,” and the vector attraction reduction (VAR) requirements in 67.6(1) “c.”

a. Class I pollutant concentrations. The concentration of each pollutant in the sewage sludge shall not exceed the concentration for the pollutant in Table 1.

TABLE 1—POLLUTANT CONCENTRATIONS

Pollutant	Monthly average concentration in mg per kg, dry weight basis
Arsenic	41
Cadmium	39
Copper	1500
Lead	300
Mercury	17
Nickel	420
Selenium	100
Zinc	2800

b. Class I pathogen requirements (Class A). The sewage sludge shall comply with 67.6(1) “b”(1) and (2).

(1) The sewage sludge shall comply with one of the following monitoring processes. Compliance with pathogen density shall not be based on an average value. Each individual sample result shall meet the numerical pathogen standards.

1. The fecal coliform density in the sewage sludge shall be less than 1,000 Most Probable Number (MPN) per gram of total solids (dry weight basis), or

2. The *Salmonella* sp. bacteria density in the sewage sludge shall be less than three MPN per four grams of total solids (dry weight basis).

(2) The sewage sludge shall comply with one of the following analytical and treatment processes:

1. The sewage sludge temperature shall be maintained at a specific value for a period of time using one of the procedures detailed below.

- When the percent solids of the sewage sludge is 7 percent or higher, the sewage sludge temperature shall be 50 degrees Celsius (°C) or higher; the time period shall be 20 minutes or longer; and the temperature and time period shall be determined using Equation 1, except when small particles of sewage sludge are heated by either warmed gases or an immiscible liquid.

- When the percent solids of the sewage sludge is 7 percent or higher and small particles of sewage sludge are heated by either warmed gases or an immiscible liquid, the sewage sludge temperature shall be 50°C or higher; the time period shall be 15 seconds or longer; and the temperature and time period shall be determined using Equation 1.

- When the percent solids of the sewage sludge is less than 7 percent and the time period is at least 15 seconds, but less than 30 minutes, the temperature and time period shall be determined using Equation 1.

Equation 1: $D = 131,700,000/10^{0.1400t}$

Where D = time in days; t = temperature in °C

- When the percent solids of the sewage sludge is less than 7 percent, the sewage sludge temperature is 50°C or higher, and the time period is 30 minutes or longer, the temperature and time period shall be determined using Equation 2.

Equation 2: $D = 50,070,000/10^{0.1400t}$

Where D = time in days; t = temperature in °C

2. The sewage sludge shall meet all of the following requirements:

- The sludge pH shall be raised to above 12 and shall remain above 12 for 72 hours;
- The sludge temperature shall be above 52°C for 12 hours or longer during the period that the sludge pH is above 12; and

- At the end of the 72-hour period during which the sludge pH is above 12, the sludge shall be air dried to achieve a percent solids in the sludge greater than 50 percent.

3. Sewage sludge treated in other known processes shall be analyzed prior to pathogen treatment to determine whether it contains enteric viruses and viable helminth ova. After pathogen treatment, the density of enteric viruses in the sewage sludge shall be less than one plaque-forming unit per four grams of total solids (dry weight basis), and the density of viable helminth ova shall be less than one per four grams of total solids (dry weight basis). Once the process has been demonstrated to achieve the required pathogen reduction, the process must be operated under the same conditions that were used during the demonstration.

4. Sewage sludge treated by unknown processes or by processes operating at conditions less stringent than the operating conditions at which the sewage sludge could qualify as Class I under other alternatives shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains enteric viruses and viable helminth ova. The density of enteric viruses in the sewage sludge shall be less than one plaque-forming unit per four grams of total solids (dry weight basis), and the density of viable helminth ova shall be less than one per four grams of total solids (dry weight basis).

5. Sewage sludge shall be treated in one of the Processes to Further Reduce Pathogens (PFRP) described in 67.10(2).

6. Sewage sludge shall be treated in a process that is equivalent to a PFRP, as determined by the department.

c. Class I VAR requirements. The sewage sludge shall meet one of the following VAR requirements.

(1) The mass of volatile solids in the sewage sludge shall be reduced by a minimum of 38 percent.

(2) A portion of the previously anaerobically digested sewage sludge shall be digested anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30°C and 37°C. If, at the end of the 40 days, the volatile solids in the sludge at the beginning of that period are reduced by less than 17 percent, VAR is achieved.

(3) A portion of the previously aerobically digested sewage sludge that has 2 percent solids or less shall be digested aerobically in the laboratory in a bench-scale unit for 30 additional days at 20°C. If, at the end of the 30 days, the volatile solids in the sludge at the beginning of that period is reduced by less than 15 percent, VAR is achieved.

(4) The specific oxygen uptake rate (SOUR) for sewage sludge treated in an aerobic process shall be equal to or less than 1.5 milligrams (mg) of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20°C.

(5) Sewage sludge shall be treated in an aerobic process for 14 days or longer. During that time, the sewage sludge temperature shall be higher than 40°C and the average sewage sludge temperature shall be higher than 45°C.

(6) The sewage sludge pH shall be raised to 12 or higher, measured at 25°C, by alkali addition and, without the addition of more alkali, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.

(7) The percent solids of sewage sludge that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials.

(8) The percent solids of sewage sludge that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.

(9) Sewage sludge shall be injected below the land surface, and no significant amount of the sludge shall be present on the land surface within one hour after injection.

(10) Sewage sludge applied to the land surface or placed on a surface disposal site shall be incorporated into the soil within six hours after application to or placement on the land.

67.6(2) *Class I management practices.* Class I sewage sludge may be land applied in conformance with the following rules:

a. Class I sewage sludge may be applied to a lawn or a home garden.

b. Class I sewage sludge shall be applied to the land at an annual whole sludge application rate that is equal to or less than the agronomic nitrogen uptake rate, unless otherwise specified by the department.

c. An information sheet shall be provided to a person who receives Class I sewage sludge that is sold or given away in a container for land application. The information sheet shall contain:

- (1) The name and address of the sewage sludge generator;
- (2) A statement that land application of the sewage sludge is prohibited except in accordance with the instructions on the information sheet; and
- (3) The annual application rate for the sewage sludge.

67.6(3) *Class I monitoring frequency.*

a. The pollutants listed in Table 1, the pathogen density requirements, and the VAR requirements shall be monitored at the frequency stated in Table 2.

TABLE 2—MONITORING FREQUENCY

Amount of sewage sludge per 365-day period, dry weight basis	Monitoring Frequency
Greater than 0 but less than 290 metric tons (mt) (or 320 English tons)	once per year
Equal to or greater than 290 but less than 1,500 mt (320 to 1,653 English tons)	once per quarter (4 times per year)
Equal to or greater than 1,500 but less than 15,000 mt (1,653 to 16,535 English tons)	once per 60 days (6 times per year)
Equal to or greater than 15,000 mt (or 16,535 English tons)	once per month (12 times per year)

b. After the sewage sludge has been monitored for two years, the department may reduce the monitoring frequency, but in no case shall the monitoring frequency be less than once per year when sewage sludge is land applied.

67.6(4) *Class I recordkeeping.*

a. Both the generator and bulk sludge applicator of Class I sewage sludge shall develop the following information and retain it for five years:

(1) The concentration of each pollutant listed in Table 1 in the sewage sludge.

(2) The following certification statement: “I certify, under penalty of law, that the Class I sewage sludge requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

(3) Descriptions of how the PFRP are met, how one of the VAR requirements is met, and how the management practices are met for each site.

b. Treatment works with a design flow rate of 1 million gallons per day (mgd) or greater and treatment works that serve 10,000 people or more shall submit the above information to EPA, using EPA’s NPDES eReporting Tool (NeT), by February 19 of each year for the previous calendar year.

567—67.7(455B) Land application requirements for Class II sewage sludge.

67.7(1) *Class II criteria.* Class II sewage sludge is sewage sludge that meets the pollutant concentrations in 67.7(1)“a,” the pathogen reduction requirements in 67.7(1)“b,” and the VAR requirements in 67.7(1)“c.”

a. *Class II pollutant concentrations.* The concentration of any pollutant in Class II sewage sludge shall not exceed the ceiling concentration for the pollutant in Table 3.

TABLE 3—CEILING CONCENTRATIONS

Pollutant	Ceiling concentration in mg per kg, dry weight basis
Arsenic	75
Cadmium	85

Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100
Zinc	7500

b. Class II pathogen reduction requirements. Class II sewage sludge shall meet one of the following three alternatives:

(1) Seven samples of the sewage sludge shall be collected at the time of disposal, and the geometric mean of the fecal coliform density shall be less than 2,000,000 MPN per gram of total solids (dry weight basis);

(2) Sewage sludge shall be treated in a PSRP described in 67.10(1); or

(3) Sewage sludge shall be treated in a process that is equivalent to a PSRP, as determined by the department.

c. Class II VAR requirements. The Class II VAR requirements are the same as those for Class I sewage sludge in 67.6(1) “c.”

67.7(2) *Class II management practices.* Class II sewage sludge may be land applied in conformance with the following:

a. Class II sewage sludge shall not be land applied:

(1) To a lawn or a home garden; or

(2) If it is likely to adversely affect a threatened or endangered species listed under section 4 of the Endangered Species Act, 16 U.S.C. 1533, effective December 27, 2022, or the species’ designated critical habitat.

b. Land application sites accepting Class II sewage sludge not meeting pollutant concentrations listed in Table 1 in 67.6(1) are subject to the cumulative pollutant loading rates listed in Table 4.

TABLE 4—CUMULATIVE POLLUTANT LOADING RATES

Pollutant	Cumulative Pollutant Loading Rate
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	kg per hectare	pounds per acre
Arsenic	41	36
Cadmium	39	34
Copper	1500	1335
Lead	300	267
Mercury	17	15
Nickel	420	373
Selenium	100	89
Zinc	2800	2490

c. Class II sewage sludge shall be land applied:

(1) At an annual whole sludge application rate that is equal to or less than the agronomic nitrogen uptake rate, unless otherwise specified by the department; and

(2) Only to soils classified as acceptable throughout the top five feet of soil profile. Sewage sludge shall not be applied to soils classified as sand, loamy sand, or silt. The acceptability of a soil shall be determined using the USDA soil classifications.

d. Land application sites shall have soil pH maintained above 6.0, unless

(1) Crops prefer soils with lower pH conditions;

(2) The sludge meets the pollution concentrations contained in Table 1; or

(3) The site does not exceed calcium carbonate equivalent levels according to sound farm management practices.

If the soil pH is below 6.0, agricultural lime can be used to increase the pH to an acceptable level.

e. If sewage sludge is applied to land on which the soil loss exceeds the soil loss limits established by the county soil conservation district, the sludge shall be injected on the contour or shall be applied to the surface and mechanically incorporated into soil within 48 hours of application. Sewage sludge shall not be applied to ground having greater than 9 percent slope unless approved by the department.

f. Sewage sludge application on frozen or snow-covered ground should be avoided unless special precautions are taken, such as proven farm management practices to avoid runoff. If

application on frozen or snow-covered ground is necessary, it shall be limited to land areas of less than 5 percent slope unless otherwise approved by the department.

g. In accordance with Table I in 567—paragraph 60.2(2) “c,” sewage sludge shall not be applied to land that is 35 feet or less from an open waterway. If sewage sludge is applied within 200 feet upgradient of a stream, lake, sinkhole, or tile line surface intake, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application unless otherwise approved by the department.

h. If sewage sludge is applied to land subject to flooding more frequently than once in ten years, the sludge shall be injected or shall be applied to the surface and mechanically incorporated into the soil within 48 hours. Information on which land is subject to flooding more frequently than once in ten years is available from the department.

i. Sewage sludge shall not be applied within 200 feet of an occupied residence or any well. Distances may be reduced to a minimum of 35 feet with the written agreement of both the well or residence owner and, in the case of residences, the occupant, and an approved farm management plan that addresses soil erodibility, harvest residuals, buffer strips, and other sound farm management practices. The farm management plan shall be approved by the local soil conservation district in accordance with rules implementing Iowa Code sections 161A.42 through 161A.51.

j. After the land application of sewage sludge, all of the following restrictions shall apply:

(1) Food crops with harvested parts that touch the sewage sludge/soil mixture and that are totally above the land surface shall not be harvested for 14 months;

(2) Food crops, feed crops, and fiber crops shall not be harvested for 30 days;

(3) Animals shall not be allowed to graze on the land for 30 days;

(4) Turf grown on land where sewage sludge is applied shall not be harvested for one year after application when the harvested turf is placed on either land with a high potential for public exposure or a lawn, unless otherwise specified by the department;

(5) Public access to land with a high potential for public exposure shall be restricted for one year; and

(6) Public access to land with a low potential for public exposure shall be restricted for 30 days.

k. When required by the director, groundwater monitoring wells and surface monitoring points shall be installed and a monitoring program implemented. Samples must be analyzed by a laboratory that is equipped and competent to perform the required tests. The results shall be forwarded to the department on a stipulated schedule.

l. The sewage sludge generator shall provide information necessary to comply with the requirements of this chapter to the sewage sludge applicator and landowner.

m. The sewage sludge applicator shall provide written notice to the department prior to the initial application of sewage sludge. The notice shall include:

(1) The location, by legal description, of the land application site, and

(2) The name, address, telephone number, and NPDES permit number (if appropriate) of the landowner, sewage sludge generator, and applicator.

67.7(3) *Class II monitoring frequency.*

a. The pollutants listed in Table 3, the pathogen density requirements, and the VAR requirements shall be monitored at the frequency stated in Table 2.

b. After the Class II sewage sludge has been monitored for two years, the department may reduce the monitoring frequency, but in no case shall the monitoring frequency be less than once per year when sewage sludge is land applied.

67.7(4) *Class II recordkeeping.*

a. Both the generator and applicator of Class II sewage sludge shall develop all of the following information and retain it for five years:

- (1) The concentration of each pollutant listed in Table 3 in the sewage sludge.
- (2) The following certification statement: “I certify, under penalty of law, that the Class II sewage sludge requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”
- (3) A description of how the PSRP and VAR requirements are met.
- (4) A description of how the management practices for Class II sewage sludge are met for each site.
- (5) The location and surface area of each site.
- (6) The date and time of sewage sludge application at each site.
- (7) If subjected to cumulative loading limits, the amount and cumulative amount of each pollutant listed in Table 4 of 67.7(2) “*b*” in the sewage sludge applied to each site.
- (8) The amount of sewage sludge (i.e., metric tons) applied to each site.

b. Treatment works with a design flow rate of 1 mgd or greater and treatment works that serve 10,000 people or more shall submit the above information to EPA, using EPA’s NPDES eReporting Tool (NeT), by February 19 of each year for the previous calendar year. In addition, a supplemental sewage sludge report that includes the land application information listed in 67.7(4) “*a*” (6) to (9) shall be submitted to the department by the same due date.

567—67.8(455B) Class III sewage sludge.

67.8(1) Class III sewage sludge is any sewage sludge that cannot meet either Class I or Class II sewage sludge criteria.

67.8(2) Class III sewage sludge shall not be utilized for beneficial use for land application as specified in the chapter.

67.8(3) Class III sewage sludge shall be disposed according to 40 CFR Part 503, Subpart C, “Surface Disposal,” or according to 40 CFR Part 503, Subpart E, “Incineration.”

567—67.9(455B) Sampling and analytical methods.

67.9(1) *General.* Representative samples of sewage sludge that are applied to the land shall be collected and analyzed. The methods and calculation procedures listed below shall be used to analyze samples and to calculate the percent of volatile solids reduction.

67.9(2) *Enteric viruses.* 40 CFR §503.8(b)(1) is adopted by reference.

67.9(3) *Fecal coliform.*

a. 40 CFR §503.8(b)(2) is adopted by reference.

b. EPA Method 1680: Fecal Coliforms in Sewage Sludge (Biosolids) by Multiple-Tube Fermentation using Lauryl Tryptose Broth (LBT) and EC Medium, EPA-821-R-14-009, September 2014.

c. EPA Method 1681: Fecal Coliforms in Sewage Sludge (Biosolids) by Multiple-Tube Fermentation using A-1 medium, EPA-821-R-06-013, July 2006.

67.9(4) *Helminth ova.* 40 CFR §503.8(b)(3) is adopted by reference.

67.9(5) *Inorganic pollutants.*

a. Metals. 40 CFR §503.8(b)(4) is adopted by reference.

b. Nonmetals. For nonmetals not identified elsewhere in this chapter, methods listed in 567—paragraph 83.5(1) “c.”

67.9(6) *Salmonella sp. bacteria.*

a. 40 CFR §503.8(b)(5) is adopted by reference.

b. EPA Method 1682: *Salmonella* in Sewage Sludge (Biosolids) by Modified Semisolid Rappaport-Vassiliadis (MSRV) Medium, EPA-821-R-06-14, July 2006.

67.9(7) *Specific oxygen uptake rate.* 40 CFR §503.8(b)(6) is adopted by reference.

67.9(8) *Total, fixed, and volatile solids.* 40 CFR §503.8(b)(7) is adopted by reference.

67.9(9) *Percent volatile solids reduction calculation.* “Environmental Regulations and Technology - Control of Pathogens and Vectors in Sewage Sludge,” EPA-625/R-92/013, July 2003.

567—67.10(455B) Pathogen treatment processes.

67.10(1) 40 CFR Part 503, Appendix B, section A, Processes to Significantly Reduce Pathogens (PSRP), is adopted by reference.

67.10(2) 40 CFR Part 503, Appendix B, section B, Processes to Further Reduce Pathogens (PFRP), is adopted by reference.

These rules are intended to implement Iowa Code section 455B.174.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item (**indicates proposed consent item*)

***26. Chapter 68, “Commercial Septic Tank Cleaners” – Final Rule**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 68. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 68 contains the standards for the commercial cleaning of and the disposal of waste from private sewage disposal systems and on-farm food processing operations. It also contains licensing requirements and procedures. The chapter is designed to prevent the spread of diseases and pathogens, safeguarding public health and the environment. This chapter was reviewed and edited consistent with Executive Order 10. The changes remove outdated requirements and shorten, simplify, and clarify regulations and terminology.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 11, 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8632C. Two public hearings were held on January 28, 2025 and January 29, 2025.

Changes from NOIA: Twenty-nine people attended the first public hearing, and nineteen people attended the second public hearing. No public comments pertinent to this rulemaking were received. This Final rule is identical to the NOIA.

Effective Date of Final Rule: June 18, 2025

Courtney Cswercko, Environmental Specialist Senior
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapter 68 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 68, “Commercial Septic Tank Cleaners,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3) and 455B.173(3).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.172 and 455B.172A.

Purpose and Summary

Chapter 68 contains standards for the commercial cleaning of and the disposal of waste from private sewage disposal systems and on-farm food processing operations. It also contains licensing requirements and procedures. The chapter is designed to prevent the spread of diseases and pathogens, safeguarding public health and the environment. The chapter allows on-farm food processors to land-apply wastes without a permit, which provides a less expensive method of waste disposal. Without this exemption, on-farm food processors would be required to obtain construction and operation permits from the Department of Natural Resources.

This chapter was reviewed and edited consistent with Executive Order 10. The changes remove outdated requirements and shorten, simplify and clarify regulations and terminology.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8632C**.

Two public hearings were held. The first public hearing was held on January 28, 2025 from 1:00 AM to 2:00 PM virtually via Google meet. The second public hearing was held on January 29, 2025 from 1:00 AM to 2:00 PM virtually via Google meet.

Twenty-nine people attended the first public hearing, and nineteen people attended the second public hearing. No public comments pertinent to this rulemaking were received.

This final rule is identical the NOIA.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 68 and adopt the following **new** chapter in lieu thereof:

CHAPTER 68

COMMERCIAL SEPTIC TANK CLEANERS

567—68.1(455B) Purpose, applicability, and definitions.

68.1(1) The purpose of this chapter is to implement Iowa Code sections 455B.172(5), 455B.172(6), and 455B.172A by providing standards for the commercial cleaning and disposal of waste from private sewage disposal systems (PSDSs) and toilet units and wastewater from on-farm food processing operations and by providing licensing requirements and procedures.

68.1(2) Definitions. For purposes of this chapter, the following definitions apply:

“*Cleaning*” means removal of waste from PSDSs and other actions incidental to that removal.

“*Commercial septic tank cleaner*” means a person or firm engaged in the business of cleaning and disposing of waste from PSDSs, including a person or firm that owns and rents or leases portable toilets.

“*Food commodity*” is defined in Iowa Code section 455B.171(8).

“*Holding tank for waste*” is defined in 567—subrule 69.1(2).

“*On-farm processing operation*” is defined in Iowa Code section 455B.171(18). “On-farm processing operation” does not include food commodities processed by a person exclusively for use by the person and members of the person’s household or the person’s nonpaying guests and employees.

“*Tank*” means any container that is placed on a vehicle to transport waste removed from a private waste facility.

“*Toilet unit*” is defined in Iowa Code section 455B.171(37).

“*Vehicle*” means a device used to transport a tank, including a trailer.

“*Waste*” means human or animal excreta, water, scum, sludge, septage, and grease solids from PSDSs or toilet units.

567—68.2(455B) Commercial septic tank and toilet unit cleaner licensing requirements and procedures.

68.2(1) *General.* Commercial septic tank and toilet unit cleaners must annually apply for and obtain a license from the department before engaging in the commercial cleaning of and disposal of septage from any PSDS or the commercial cleaning and disposal of wastes from any toilet unit in the state of Iowa. The license period will run from July 1 to June 30 of the following year. Owners of a septic tank may clean their own tank without being licensed if all other requirements of this chapter are met.

68.2(2) *Application for license.* A commercial septic tank or toilet unit cleaner must apply for a license by completing a department form and submitting it to the department with an annual septage disposal management plan (SDMP) and license fee. In the case of a commercial septic tank cleaner that is a corporation, partnership, association, or any other business entity, the entity itself must apply as provided in this rule. The entity shall designate a person with requisite authority to act as its representative when applying for a license. Individuals employed by a commercial septic tank or toilet unit cleaner business are not required to be licensed, but each cleaning unit (vehicle or tank) must display the business license number (except for the year).

68.2(3) *Septage disposal management plan (SDMP).* An applicant must submit an SDMP with a license application using a department form. Applicants must also submit the SDMP to the county board of health in each county where septage is to be land applied.

a. An SDMP shall include:

- (1) A list of vehicles to be registered for use by the licensee.
- (2) The volume of septage expected to be collected from PSDSs or toilet units.
- (3) For disposal to another system, including a publicly owned treatment works (POTW), a different permitted wastewater disposal system (DS), a permitted septage lagoon or septage drying bed, or a permitted sanitary landfill:

1. The volume of septage or waste to be taken to each system; and
2. A letter of acceptance from the owner of each system where septage or waste is proposed to be disposed.

(4) For septage disposal by land application:

1. The location and area of all sites where septage is to be land applied;
2. The anticipated volume of septage applied to each site;
3. The type of crop to be planted on each site and the date when planting will occur; and
4. The type of land application to be used at each site.

b. Allowance may be made in an SDMP for septage application on the property of the owner of the tank being pumped as long as the disposal standards of this chapter are met.

c. A license will be issued only after department approval of the SDMP. If the SDMP is not approved by the department, it must be modified and resubmitted.

68.2(4) *SDMP alteration.* An amended SDMP must be submitted to the department and the county before septage is land applied to any new property not listed in the existing SDMP, or septage is taken to a system not listed in the SDMP.

68.2(5) *License fees.*

a. Renewal fees. The renewal application fee is \$150 per year for the first registered vehicle and \$50 for each additional vehicle. If an applicant intends to land apply any septage during the year, there will be an additional application fee of \$7 per 1,000 gallons of septage to be land applied per year. Land application fees shall be based on the previous year's records.

b. New license fees. New license applicants will be charged the following fees:

(1) Applicants who propose to land apply shall pay a prorated \$300 annual fee until the next June 30.

(2) Applicants will be charged fees of \$150 for the first registered vehicle and \$50 for each additional vehicle.

68.2(6) *License renewal.* In order to remain valid, a license must be renewed by June 30 of each year. Renewal applications must meet the requirements of this rule and be received by the department at least 30 days prior to the expiration date.

68.2(7) *Ownership change.* Within 30 days of a change in ownership of any commercial septic tank or toilet unit cleaner, the new owner shall furnish the department with the following information:

- a.* Business name and license number;
- b.* Name, address, email address, and telephone number of the new owner;
- c.* Date of the ownership change; and
- d.* Any change in the SDMP.

The license will transfer with the ownership with no additional fee.

68.2(8) *Address change.* Within 30 days of any change in the address or location of a commercial septic tank or toilet unit cleaning business, information regarding such change must be reported to the department.

567—68.3(455B) License suspension, revocation and denial.

68.3(1) *Basis for suspension, revocation, and denial.* The department may suspend, revoke, or deny a commercial septic tank or toilet unit cleaner license for any of the following reasons:

- a.* A material misstatement of facts in a license application.
- b.* Failure to provide the license fee.
- c.* Failure to provide and adhere to an approved SDMP.
- d.* Failure to satisfy the requirements of this chapter.
- e.* Failure to pay any fines assessed under 68.3(2).

68.3(2) *Civil penalties.* The department may assess civil penalties pursuant to Iowa Code section 455B.172.

68.3(3) *Appeal.* A commercial septic tank or toilet unit cleaner may appeal the suspension, revocation, or denial of a license under the provisions of 567—Chapter 7.

68.3(4) *Reinstatement.* In the case of a denial, revocation, or suspension pursuant to 68.3(1) “*b*” or “*e*,” the department may immediately reinstate or issue a license after receipt of the requisite fee or fine and confirmation that the commercial septic tank or toilet unit cleaner is fulfilling the requirements of 567—68.4(455B) and 567—68.6(455B). In case of a denial, revocation or suspension pursuant to 68.3(1) “*a*,” “*c*,” or “*d*,” the department may reinstate or issue a license no sooner than 60 days after the action if the department is satisfied that the commercial septic tank or toilet unit cleaner has corrected the deficiency and will comply with department rules in the future.

567—68.4(455B) Licensee and county obligations.

68.4(1) *Licensee obligations.* A licensee shall:

- a.* Supervise the removal and disposal of septage from PSDSs or waste from toilet units;
- b.* Meet the standards established in this chapter for the cleaning of and disposal of septage from PSDSs or waste from toilet units; and

c. Record the location of all cleaned PSDSs or toilet units, the method of septage or waste disposal, and the volume of septage or waste disposed of for each trip. Such records shall be maintained for five years and shall be made readily available upon request by an administrative authority.

68.4(2) *County obligations.* The county boards of health shall enforce the standards and licensing requirements in this chapter and other referenced rules.

567—68.5(455B) Application sites and equipment inspections. All land application sites specified on an SDMP shall be inspected annually by a department-approved agent to ensure that the sites meet the requirements for septage disposal and are properly managed. All vehicles, tanks, and related storage and handling facilities for septage shall be inspected annually to ensure compliance with these rules. The department may contract with other entities, such as the county boards of health, to carry out inspections. However, the department shall retain concurrent authority to determine inspection requirements.

567—68.6(455B) Standards for commercial cleaning of PSDSs and toilet units.

68.6(1) *Vehicles, tanks, and equipment.* For all vehicles, tanks, and equipment used in the commercial cleaning of PSDSs and toilet units, the licensee shall:

- a. Prevent the dripping, falling, spilling, leaking, or discharging of septage or waste onto roads, rights-of-way, or other public properties;
- b. Provide the necessary equipment to properly clean PSDSs or toilet units and to sufficiently agitate and disperse solids, sludge, and scum into the liquid for cleaning;
- c. Install pumps and associated piping with watertight connections to prevent leakage;
- d. Ensure that equipment can easily be cleaned and is maintained in an essentially rust-free and sanitary condition;
- e. If septage is to be land applied, provide a mechanism for properly mixing lime with the septage or a means to incorporate or inject the septage; and

f. Prominently display the license number and name of the commercial septic tank or toilet unit cleaner on the side of all vehicles or tanks in letters and numbers at least three inches high.

68.6(2) *Miscellaneous.*

a. Any tanks or equipment used for hauling septage or waste shall not be:

- (1) Used to haul hazardous or toxic wastes as defined in 567—Chapter 131;
- (2) Used to haul wastes detrimental to land application or wastewater treatment plants;
- (3) Used in a manner that would contaminate a potable water supply; or
- (4) Used in a manner that would endanger the food chain or public health.

b. A direct connection shall not be made between a potable water source and a tank or equipment on a vehicle.

567—68.7(455B) Standards for septage and waste disposal. Septage from PSDSs and on-farm processing operations and waste from toilet units and holding tanks shall be disposed of in accordance with this rule.

68.7(1) Waste from toilet units and holding tanks shall be disposed of by discharge, with owner approval, to a POTW or other department-permitted wastewater disposal system. Land application of wastes from toilet units or holding tanks is prohibited.

68.7(2) Septage from septic tanks or other types of PSDSs that normally discharge effluent for further treatment shall be disposed of by one or more of the following methods:

a. Septage may be discharged, with system owner approval, to any of the following systems:

- (1) To a POTW or other department-permitted wastewater disposal system.
- (2) To permitted septage lagoons or septage drying beds.
- (3) To a permitted sanitary landfill in accordance with 567—Chapters 102 and 103 and the following requirements:

1. Septage shall be stabilized by adding and thoroughly mixing sufficient lime to produce a mixture with a pH of 12.

2. A minimum of 30 minutes of contact time shall be provided after mixing the lime with the septage prior to discharging to the landfill.

- b.* Septage from PSDSs and on-farm processing operations may be land applied when such applications are conducted in accordance with the following requirements:

- (1) Land application rate. The maximum application rate is 30,000 gallons of septage per acre of cropland per 365-day period. The nitrogen application rate shall be no more than is utilized by the crop. A crop capable of using the nitrogen applied must be grown and harvested from the site after application of the maximum annual allocation or, at a minimum, every third year.

- (2) Land application site restrictions.

1. Sites shall have soil pH maintained above 6.0 unless crops prefer soils with lower pH conditions. If the soil pH is below 6.0, agricultural lime may be used to increase the pH to an acceptable level. Soil pH shall be measured and reported in the annual SDMP.

2. If application on frozen or snow-covered ground is necessary, it shall be limited to land areas of less than 5 percent slope and application rates of less than 2,500 gallons per acre per day.

3. If septage is land applied to land in a floodplain with a ten-year magnitude, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours. Information on which land is in a floodplain with a ten-year magnitude is available from the department.

4. Septage shall be land applied in accordance with the separation distances in Table I in 567—paragraph 60.2(2) “c.” If septage is land applied within 200 feet upgradient of a stream,

lake, sinkhole, or tile line surface intake, it shall be injected or applied to the surface and mechanically incorporated into the soil within 48 hours of application.

5. Septage shall not be applied to any of the following:

- To a lawn or a home garden;
- To ground that has a slope greater than 9 percent; or
- To land where there is a bedrock layer or seasonal high water table within three feet of

the soil surface, as noted in the county USDA soil surveys.

(3) Land application crop harvesting restrictions. After a septage application:

1. Food crops with harvested parts that touch the septage/soil mixture and are totally above ground shall not be harvested for 14 months.

2. Food crops with harvested parts below the land surface shall not be harvested for 38 months.

3. Animal feed, fiber, and those food crops with harvested parts that do not touch the soil surface shall not be harvested for 30 days.

4. Animals shall not be allowed to graze on the land for 30 days.

(4) Land application vector attraction reduction (VAR). One of the following VAR requirements shall be met when septage is land applied:

1. Septage may be injected below the surface of the land. No significant amount of septage shall be present on the land surface within one hour of septage injection.

2. Septage may be incorporated into the soil within six hours after application to or placement on the land.

3. Septage may be stabilized by adding and thoroughly mixing sufficient alkaline material (such as hydrated or quick lime) to produce a mixture with a pH of 12. A minimum of 30 minutes of contact time shall be provided after mixing the alkaline material with the septage prior to land application. Each container of treated septage shall be monitored for compliance

by testing two representative samples taken a minimum of 30 minutes apart to verify that the pH remains at 12 or greater for the minimum 30-minute time period.

4. Other stabilization methods may be acceptable if shown to be equivalent to one or more of the methods described in this subparagraph.

(5) Land application records. Persons who land apply septage shall document the following information and retain the records at their residence or business for five years:

1. The location, by either street address or latitude and longitude, of each septage application site;
2. The number of acres and precise application area in each septage application site;
3. The gallons of septage applied to each site for each application;
4. The rate, in gallons per acre, of septage application at each site;
5. The total gallons of septage applied at each site to date for the year;
6. The date and time of septage application at each site; and
7. A description of how the VAR requirements are met (injection, incorporation, or stabilization).

The following certification statement shall be provided with the records when the records are submitted to or requested by the department:

“I certify, under penalty of law, that the pathogen requirements and the vector attraction reduction requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.”

567—68.8(455B) Standards for disposal of wastewater from on-farm food processing operations. On-farm food processing wastewater shall be disposed of pursuant to Iowa Code section 455B.172A. On-farm food processing operations that meet the requirements for land application in Iowa Code section 455B.172A and 567—68.7(455B) shall not be required to obtain an operation permit as prescribed in 567—60.3(455B).

These rules are intended to implement Iowa Code sections 455B.172 and 455B.172A.

**Iowa Department of Natural Resources
Environmental Protection Commission**

Decision Item

27. Chapter 70, “Scope of Title-Definitions-Forms-Rules of Practice” – Final rule

The Commission is requested to approve this Adopted and Filed rule to rescind and replace Chapter 70. This rulemaking is the result of Land Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 70 regulates floodplains and floodways in the state. These rules will protect life and property from floods and promote the orderly development and wise use of the floodplains of the state. Chapter 70 contains applicable definitions, application requirements, and procedures for reviewing and awarding applications. The chapter has been reviewed and edited consistent with Executive Order 10. Outdated provisions have been removed, and language has otherwise been streamlined and simplified.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025, as ARC 8639C. Public hearings were held via virtual online meetings on January 28, 2025 from 10-11am and on January 29, 2025 from 1-2pm.

Changes from NOIA: One interested party attended the meeting and provided written comments. The comment was focused on the definition of “floodplain” and the procedure applicable to the establishment of floodways. The final rule has been updated in response to these comments to ensure clarity and to ensure proper implementation of the Iowa Code.

Effective Date of Final Rule: June 18, 2025

Jonathan Garton, Floodplain and Dam Safety Section Supervisor
Land Quality Bureau
Environmental Services Division
Meeting: April 15, 2025

Attached: Chapter 70 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 70, “Scope of Title—Definitions—Forms—Rules of Practice,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.263(8) and 455B.276(1).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.105(11), 459.102, 459.301 and 481A.15, and chapter 455B, subchapter III, part 4.

Purpose and Summary

New Chapter 70 regulates floodplains and floodways in the state. These rules will protect life and property from floods and promote the orderly development and wise use of the floodplains of the state. Chapter 70 contains applicable definitions, application requirements, and procedures for reviewing and awarding applications. This chapter has been reviewed and edited consistent with Executive Order 10. Outdated provisions have been removed, and language has otherwise been streamlined and simplified.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as ARC 8639C.

Public hearings were held via virtual online meetings on January 28, 2025 from 10-11am and on January 29, 2025 from 1-2pm.

One interested party attended the meeting and provided written comments. The comment focused on the definition of “floodplain” and the procedure applicable to the establishment of

floodways. The final rule has been updated in response to these comments to ensure clarity and to ensure proper implementation of the Iowa Code.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2024.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 70 and adopt the following **new** chapter in lieu thereof:

TITLE V

FLOODPLAIN DEVELOPMENT

CHAPTER 70

SCOPE OF TITLE—DEFINITIONS—FORMS—RULES OF PRACTICE

567—70.1(455B,481A) Scope of title.

70.1(1) The department has jurisdiction over all floodplains and floodways in the state for the purpose of establishing and implementing a program to promote the protection of life and property from floods and to promote the orderly development and wise use of the floodplains of the state. Any person who desires to construct or maintain a structure, dam, obstruction, deposit or excavation, or allow the same in any floodplain or floodway has a responsibility to contact the department to determine whether approval is required from the department or a local government authorized to act for the department.

70.1(2) Minimum statewide criteria for most types of floodplain development are listed in 567—Chapter 72. Special requirements for dams are listed in 567—Chapter 73.

567—70.2(455B,481A) Definitions. Definitions used in this title are listed in alphabetical order as follows:

“Agricultural levees or dikes” means levees or dikes constructed to provide limited flood protection to land used primarily for agricultural purposes.

“Animal feeding operation” means the same as defined in 567—65.1(459,459B).

“Animal feeding operation structure” means the same as defined in 567—65.1(459,459B).

“Backwater” means the increase in water surface level immediately upstream from any structure, dam, obstruction or deposit, erected, used, or maintained in the floodway or on the floodplains caused by the resulting reduction in conveyance area.

“Bankfull stage” is the elevation above which a rise in water surface elevation will cause the river or stream to overflow the lowest natural bank that is not an unusually low place or a break in the natural bank through which water inundates a small area.

“Base flood elevation” means the elevation that floodwaters would reach at a particular site during the occurrence of a flood having a 1 percent chance of being equaled or exceeded in any given year (also commonly referred to as the “100-year flood”).

“Building” means all residential housing including mobile homes as defined herein, cabins, factories, warehouses, storage sheds, and other walled, roofed structures constructed for occupation by people or animals or for storage of materials.

“Channel” means a natural or artificial flow path of a stream with definite bed and banks to collect and conduct the normal flow of water.

“Channel change” means either (a) the alteration of the location of a channel of a stream or (b) a substantial modification of the size, slope, or flow characteristics of a channel of a stream. (NOTE: Diversions of water subject to the permit requirements of Iowa Code sections 455B.268 and 455B.269 usually are not channel changes.) Increasing the cross-sectional area of a channel by less than 10 percent is not considered a substantial modification of the size, slope, or flow characteristics of a channel of a stream.

“Confinement feeding operation” means the same as defined in 567—65.1(459,459B).

“Confinement feeding operation building” or *“confinement building”* means the same as defined in 567—65.1(459,459B).

“Confinement feeding operation structure” means the same as defined in 567—65.1(459,459B).

“Dam” means the same as defined in rule 567—73.2(455B).

“Development” means a structure, dam, obstruction, deposit, excavation or flood control work in a floodway or floodplain.

“Drainage district ditch” means a channel located within the boundaries of a drainage district and excavated to establish a design channel-bottom profile for efficient conveyance of drainage from agricultural tile systems and open drains.

“Elevating” means raising buildings by fill or other means to or above a minimum level of flood protection.

“Emergency action plan” means the plan to adequately protect persons or materials in a floodplain during a flood event. An emergency action plan shall include action triggers such as stream levels or flood warnings, responsible parties, and a detailed plan of action.

“Flood control works” means physical works such as dams, levees, floodwalls, and channel improvements or relocations undertaken to provide moderate to high degree of flood protection to existing or proposed structures or land uses.

“Floodplain” means the area adjoining a river or stream which has been or may be covered by flood water.

“Flood proofing” means a combination of structural provisions, changes, or adjustments in construction to buildings, structures, or properties subject to flooding primarily for the reduction or elimination of flood damages.

“Floodway” means the channel of a river or stream and the adjacent land areas that must be reserved in order to discharge the waters of a 1 percent annual recurrence chance flood without cumulatively increasing the water surface elevation more than one foot. Floodway establishment procedures can be found in 567—70.4(455B).

“Floodway fringe” means those portions of the floodplains located outside of the floodway.

“High damage potential” means the flood damage potential associated with the following:

1. Habitable residential buildings and building complexes, which include seasonal residential buildings; or
2. Industrial, commercial, agricultural, recreational and other similar buildings or building complexes, that, if inundated by flooding, would result in high public damages as determined by the department or that contain high-value equipment or contents that are not easily removed; or

3. Public buildings or building complexes, that, if inundated by flooding, would result in high public damages as determined by the department.

“Low damage potential” means all buildings, building complexes or floodplain uses not defined as maximum or high damage potential where such structures are designed in a manner that inundation by flood waters results in minimal damage to the structure and its contents. Such structures include but are not limited to the following: detached residential garages, sheds, park shelters, buildings used for storage of equipment or crops that can be easily removed before a flood event, and buildings used as temporary shelter for livestock.

“Major water source” means the same as defined in 567—65.1(459,459B).

“Manure storage structure” means the same as defined in 567—65.1(459,459B).

“Maximum damage potential” means the flood damage potential associated with hospitals and like institutions; buildings or building complexes containing documents, data, or instruments of great public value; buildings or building complexes containing materials dangerous to the public or fuel storage facilities; emergency response facilities, power installations needed in emergency or buildings or building complexes similar in nature or use to those listed above.

“Minimum level of flood protection” means the elevation corresponding to the water surface profile of the regulatory flood associated with a damage potential classification listed in these rules plus any freeboard specified in these rules.

“Mobile home” means a structure, transportable in one or more sections, that is built on a permanent chassis and designed to be used with or without a permanent foundation when connected to the required utilities. It does not include recreational vehicles or travel trailers.

“Nominated stream” means the stream or water source named in the petition described in 567—Chapter 72 that seeks designation of a stream as a protected stream.

“Protected stream” means a stream designated by the department as a “protected stream” in 567—Chapter 72.

“Public damages” means costs resulting from damage to roads and streets, sewers, water mains, other public utilities and public buildings; expenditures for emergency flood protection, evacuation and relief, rehabilitation and cleanup; losses due to interruption of utilities and transportation routes, and interruption of commerce and employment.

“Q500,” “Q100,” “Q50,” “Q25,” “Q15,” “Q10,” etc., means a flood having a 0.2, 1, 2, 4, 7, 10, etc., percent chance of being equaled or exceeded in any one year as determined by the department.

“Repair and maintenance of a drainage district ditch” means the restoration of the original grade line, cross-sectional area, or other design specifications of a drainage district ditch lawfully established as part of a drainage district formed and operating under the provisions of Iowa Code chapter 468.

“Road projects” means the construction and maintenance of any bridges, culverts, road embankments, and temporary stream crossings.

“Rural areas” means any area not defined or designated as an urban area.

“Seasonal homes” means residential buildings or building complexes that are not used for permanent or year-round human habitation.

“Stream” means a water source that either drains an area of at least two square miles or has been designated as a protected stream in 567—Chapter 72.

“Urban areas” means those lands enclosed by the incorporated limits of municipalities.

“Water source” means the same as defined in 567—65.1(459,459B).

567—70.3(17A,455B,481A) Review and approval of floodplain development.

70.3(1) *Development needing approval.* Any development in a floodway or floodplain that exceeds the thresholds in 567—71.1(455B), that is not exempt pursuant to 567—71.4(455B), and that is not regulated by a locally adopted ordinance, requires approval by the department.

70.3(2) *Permit application submittal requirements.* Applications shall be submitted on either forms or an application system provided by the department with required supporting materials as determined by the department describing the work and impacts of the proposed development. Applications shall include a project description and detailed drawings of proposed development. Certified engineering plans, specifications, hydrologic and hydraulic analysis, and other information as specified by the department that is needed for the department to conduct a technical review are also required for complex projects such as bridges, culverts, levees, channel changes and other public infrastructure where the department determines that such materials are necessary to determine impacts of the project and the design's ability to meet criteria for approval. The engineering plans and other engineering information shall be certified by a licensed professional engineer or, if applicable, a licensed land surveyor, as required by Iowa Code chapter 542B.

70.3(3) *Application fee.* No fee is charged at this time.

567—70.4(455B) Establishment of a floodway. Criteria for approval in Chapter 72 often references the floodway. When available, floodways calculated and published by FEMA on community adopted flood insurance rate maps may be used by the department. When unavailable, or in discretion of the department based on best available information, the department will delineate the encroachment limits defining the outer limits of the floodway, conforming to the following criteria insofar as possible:

70.4(1) *Increase in water surface elevation.* The increase in the water surface elevation of Q100 (100-year discharge) that would result from confining flood flows to the floodway must not exceed one foot.

70.4(2) *Equal and opposite conveyance.* Floodway boundaries shall be located such that the floodway areas on each side of a stream convey a share of the flood flows proportionate to the total conveyance available on each respective side of the stream.

70.4(3) *Protection of existing development.* To the extent feasible, floodway boundaries shall be located as follows:

a. To avoid the need to seek removal of a lawful existing structure in order to safely convey Q100;

b. To minimize any increase in the level of Q100 in an area where such increase would adversely affect an existing lawful structure; and

c. To avoid the need to place an existing lawful structure in a delineated floodway if the placement would result in additional restrictions on improvements or reconstruction or replacement of the structure.

70.4(4) *When acquisition of property interest is required.* Where protection of an existing structure necessitates prohibition of development in an area that could otherwise be developed under the criteria in 70.4(1) and 70.4(2), the department or local governmental designee may require that the owners of land benefited by the application of criteria in this subrule acquire property interests as needed to provide an adequate alternative floodway.

567—70.5(17A,455B,481A) Procedures for review of applications.

70.5(1) *Initial screening of applications.* Each application upon receipt shall be promptly evaluated by the department to determine whether adequate information is available to review the project. The department shall advise the applicant of any additional information required to review the project. If the requested information is not submitted within 60 days of the date the request is made, the department may consider the application withdrawn.

70.5(2) *Order of processing.* In general, complete applications including sufficient plans and specifications shall be reviewed in the order that complete information is received. However, when there is a large number of pending applications, which preclude the department from promptly processing all applications, the department may expedite review of a particular

application out of order if the completed application and supporting documents were submitted at the earliest practicable time and any of the following conditions exist:

- a.* Relatively little staff review time (generally less than four hours) is required and delay will cause the applicant hardship;
- b.* The applicant can demonstrate that a delay in the permit will result in a substantial cost increase of a large project;
- c.* Prompt review of the permit would result in earlier completion of a project that conveys a significant public benefit;
- d.* The need for a permit is the result of an unforeseen emergency or catastrophic event; or
- e.* A permit is needed to complete a project that will abate or prevent an imminent threat to the public health and welfare.

70.5(3) *Project investigation.* The department shall make an investigation of a project for which an application is submitted. The following are standard procedures for an investigation of an application:

- a. Inspection.* Agency personnel may make one or more field inspections of the project site when necessary to obtain information about the project. Submission of the application is deemed to constitute consent by the applicant for the agency staff and its agents to enter upon the land on which the proposed activity or project will be located for the sole purpose of collecting the data necessary to process the application, unless the applicant indicates to the contrary on the application.
- b. Technical review.* The department staff shall conduct a technical review using appropriate analytical techniques such as application of hydrologic and hydraulic models to determine the effects and impacts of a proposed project.
- c. Solicitation of expert comments on environmental effects.* For channel changes or other developments that may cause significant adverse effects on the wise use and protection of water

resources, water quality, fish, wildlife and recreational facilities or uses, the department shall request comments from the fish and wildlife division of the department or other knowledgeable sources.

d. Summary report of project review. The department staff may, if indicated, prepare a project summary report that summarizes the results of the review with respect to relevant criteria, the analytical methods used in the review and other project information. Typical indications of when project summary reports will be prepared are for those projects for which negative comments have been received from potentially affected landowners, those projects that are not approvable, and those projects that are complex in nature. Project summary reports will not normally be prepared for routine, noncontroversial projects.

e. Notice to landowners who might be affected. The department shall require the applicant to provide the names of the owners and occupants of land located immediately upstream, downstream, and across from the project site, and owners of any other land that the agency staff determines may be adversely affected by the project. For those landowners that the department determines may be adversely impacted by the project, the department shall then notify the landowners that the project is under consideration and provide a reasonable opportunity for submission of comments.

f. Notice to the applicant that project does not conform to criteria. If the project review discloses that the project violates one or more criteria and that the project should be disapproved, or approved only subject to special conditions to which the applicant has not agreed, the department shall notify the applicant and, when practical, suggest appropriate project modifications. The department shall offer the applicant an opportunity to submit comments before an initial decision is made.

70.5(4) *Decision by the department.* The decision by the department on an application for a floodplain development permit shall be either approval or disapproval. The decision shall include

a determination whether the project satisfied all relevant criteria and may incorporate by reference and attachment the summary report described in 70.5(3) “d.”

a. Approval. Issuance of a floodplain development permit shall constitute approval of a project. The permit shall include applicable general conditions listed in 567—Chapter 72 and may include one or more special conditions when reasonably necessary to implement relevant criteria.

b. Disapproval. A letter to the applicant denying the application shall constitute disapproval of a project.

c. Notice of decision. Copies of the decision shall be mailed to the applicant, any person who commented pursuant to 70.5(3) “e,” and any other person who has requested a copy of the decision. The decision may be sent by ordinary mail, first class, and shall be accompanied by a certification of the date of mailing. A decision becomes the final decision of the department unless a timely notice of appeal is filed in accordance with 567—70.6(17A,455B,481A). The final decision may be filed with the appropriate county recorder to give constructive notice to future landowners of any conditions or requirements imposed by the final decision.

567—70.6(17A,455B,481A) Appeal of decision.

70.6(1) Any person aggrieved by a decision issued under 567—70.5(17A,455B,481A) of these rules may file a notice of appeal with the director. The notice of appeal must be filed within 30 days following the certified date of mailing of the decision unless the appellant shows good cause for failure to receive actual notice and file within the allowed time. The form of the notice of appeal and appeal procedures are governed by 567—Chapter 7.

70.6(2) The department shall mail a copy of the notice of appeal to each person who was sent a copy of the initial decision. The department shall attach an explanation of the opportunity to seek intervention in the contested case.

These rules are intended to implement Iowa Code chapter 455B, subchapter III, part 4, and sections 455B.105(11), 459.102, 459.301 and 481A.15.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item

28. Chapter 71, “Floodplain or Floodway Development – When Approval is Required”; Chapter 75, “Management of Specific Flood Plain Areas”; and Chapter 76, “Federal Water Resources Projects” – Final Rules

The Commission is requested to approve the Adopted and Filed rules to rescind and replace Chapter 71 and to rescind and reserve Chapters 75 and 76. This rulemaking is the result of the Land Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 71 regulates floodplains and floodways in the state. The rules help protect life and property from floods and promote the orderly development and wise use of the floodplains of the state. New Chapter 71 makes clear when approval is required for floodplain development and outlines the process of local governments issuing floodplain permits on behalf of the state. The chapter has been reviewed and edited consistent with Executive Order 10. Redundant and outdated language has been removed, and language has otherwise been simplified.

Likewise, Chapters 75 and 76 were reviewed consistent with Executive Order 10. Accordingly, both are rescinded for being redundant, unnecessary, or outdated. However, two parts of Chapter 75 are still relevant and have been moved into new Chapters 70 and 71.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025, as ARC 8633C. Public hearings were held via virtual online meetings on January 28, 2025 from 10-11am and on January 29, 2025 from 1-2pm.

Changes from NOIA: One interested party attended the meeting and provided written comments. The comment was focused on variances to local ordinances, exempted activities such as soil and water conservation infrastructure, and small projects such as fences. The final rule has been updated in response to these comments to ensure clarity and ensure proper implementation of the Iowa Code. The comments and resulting minor updates provided additional clarity and ensures that the proposed rules are not more restrictive than existing rules.

Effective Date of Final Rule: June 18, 2025

Jonathan Garton, Floodplain and Dam Safety Section Supervisor
Land Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapters 71, 75, and 76 – Final rules

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 71, “Floodplain or Floodway Development—When Approval is Required,” and adopts a new chapter with the same title; and rescinds and reserves Chapter 75, “Management of Specific Flood Plain Areas,” and Chapter 76, “Federal Water Resource Projects,” Iowa Administrative Code.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.263(8) and 455B.276(1).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code chapter 455B, subchapter III, part 4, and sections 459.102, 459.301 and 481A.15.

Purpose and Summary

New Chapter 71 regulates floodplains and floodways in the state. The rules will help protect life and property from floods and promote the orderly development and wise use of the floodplains of the state. Chapter 71 makes clear when approval is required for floodplain development and outlines the process of local governments issuing floodplain permits on behalf of the state. This chapter has been reviewed and edited consistent with Executive Order 10. Redundant and outdated language has been removed, and language has otherwise been simplified.

Likewise, Chapters 75 and 76 were reviewed consistent with Executive Order 10. Accordingly, both are rescinded for being redundant, unnecessary, or outdated. However, two parts of Chapter 75 are still relevant and have been moved into new Chapters 70 and 71.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8633C**.

A public hearing was held via virtual online meetings on January 28, 2025 from 10-11am and on January 29, 2025 from 1-2pm.

One interested party attended the meeting and provided written comments. The comment focused on variances to local ordinances, exempted activities such as soil and water conservation infrastructure, and small projects such as fences. The final rule has been updated in response to these comments to ensure clarity and ensure proper implementation of the Iowa Code.

The comments and resulting minor updates provide additional clarity and ensure that the final rules are not more restrictive than the previous ones.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2024.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 71 and adopt the following **new** chapter in lieu thereof:

CHAPTER 71

FLOODPLAIN OR FLOODWAY DEVELOPMENT—WHEN APPROVAL IS REQUIRED

567—71.1(455B) State floodplain permits. In the following instances, approval is required by the department for any development including construction, maintenance, and use of a structure, dam, obstruction, deposit, excavation or flood control work on a regulated floodplain or floodway unless the project is otherwise approved by a delegated community's local floodplain ordinances adopted pursuant to 567—71.2(455B) or is exempt under 567—71.4(455B).

71.1(1) *Rural areas.* In rural areas, projects in or on the floodplain of any stream draining ten or more square miles at the downstream end of the project site.

71.1(2) *Urban areas.* In urban areas, projects in or on the floodplain of any river or stream draining two or more square miles at the downstream end of the project site.

71.1(3) *Protected streams.* On protected streams, channel changes at any location on any river or stream designated as a protected stream pursuant to Division III of 567—Chapter 72.

71.1(4) *Buildings and other structures adjacent to or downstream from impoundments.* For new construction, additions, lowering, or reconstruction of buildings, water and waste water treatment facilities, sanitary landfills, animal feeding operation structures, or other miscellaneous structures and associated fill, without regard to the size of the drainage area, if:

a. The project is adjacent to an impoundment and the lowest floor level, including any basement, is lower than the top of the adjacent dam; or

b. There is an upstream dam and flooding can be reasonably anticipated from principal or emergency spillway discharges; or

c. There is an upstream dam that does not substantially comply with high hazard criteria in these rules and where flooding can be reasonably anticipated from overtopping and failure of the dam.

71.1(5) *Dams.* For construction, repair, or modification of any dam that exceeds the thresholds under 567—73.3(455B).

567—71.2(455B) Delegated state floodplain permitting by local communities. Upon submission to the department for review and approval, a local unit of government may establish encroachment limits, floodplain regulations, and zoning ordinances, subject to the following:

71.2(1) Written approval from the department must be obtained before effective adoption or amendment of a local regulation that would control development in a floodplain or floodway for purposes related to flood protection. A local government may appeal the refusal of the department to approve a proposed regulation by notifying the department and requesting that the proposed local regulation be considered at the next meeting of the commission.

71.2(2) Prior to receiving approval, a community shall demonstrate capacity to properly review applications and issue floodplain permits.

71.2(3) Approved communities shall provide evidence to the department of this capacity at least every five years. Additionally, the department may, from time to time, take action to ascertain the effectiveness of department-approved, locally adopted floodplain management regulations. Upon a finding that the local government has been negligent in administering the approved regulations, the department may revoke approval of same. Floodplain works found to be in violation of department-approved, locally adopted floodplain management regulations may be handled under the provisions of the department's rules for investigation of unauthorized projects.

71.2(4) Where it is unclear whether the works are adequately covered by such local regulations, the department shall make the determination.

567—71.3(455B) Review and approval of variances from local regulations. A variance from an approved local floodplain regulation shall not be effective until it has been reviewed and approved by the department in accordance with the following procedures.

71.3(1) *Duty of local government to notify department of each variance request.* After receipt of each request for variance from a local floodplain regulation approved by the department, the local government shall notify the department of the variance request on a form obtained from the department. The notice must be received by the department at least 15 days before any hearing that the local government schedules on the variance request.

71.3(2) *Written comment from the department.* After receipt of notice of a variance request, the department shall mail or deliver a written comment on the variance request. The comment shall be issued within 15 days after receipt of the notice or in time for consideration at any hearing held after expiration of the 15-day period. The comment shall be either a statement of objection or “no objection” as follows:

a. Objection to variance request. The department may issue an objection to the variance request if the requested variance would violate applicable statewide criteria. The objection may be based on a statement that the applicant for the variance has provided insufficient information for the department to determine whether the requested variance would violate applicable minimum statewide criteria. An objection based on a statement of insufficiency of information shall identify the information needed to determine whether the request would violate applicable criteria.

b. No objection to variance requests. The comment issued by the department may state that the department has no objection to the variance request. The comment shall briefly explain why

granting of the requested variance would not violate the purposes of minimum statewide criteria. A statement of “no objection” shall constitute approval to grant the requested variance.

71.3(3) *Basis for variance.* A variance from an applicable local permitting requirement should only be granted if the applicant can show that denial of the variance would cause unnecessary hardship and that granting of the variance would not be contrary to the public interest or the underlying purposes of the requirement in question.

71.3(4) *Review or appeal of local ruling on variance request.* The appropriate forum and procedures for review or appeal of the decision of a local government on a request for variance from a regulation approved by the department depend on the relationship between the local decision and the comment submitted by the department as follows.

a. When local government grants variance after objection by department. If the local government grants a variance request after issuance of an objection by the department, the local government shall give written notice of the local action and the supporting reasons to the department. The variance shall not be effective until approved by the commission. The applicant for the variance shall have the right to a contested case proceeding before the commission or its designee if required to resolve a material issue of fact or law.

b. When local government denies variance after objection by department. If the local government denies a variance request on the basis of an objection by the department, the applicant may file a notice of appeal with the department within 20 days following the local action. The applicant for the variance shall have the right to a contested case proceeding before the commission or its designee if required to resolve a material issue of fact or law.

c. When local government grants or denies a variance request after a “no objection” comment by the department. When a local government grants or denies a variance request after receiving a “no objection” comment from the department, any appeal normally should be taken in the

manner provided for appeal of other local actions. An appeal should be filed with the department only if the purpose of the appeal is to challenge the basis of the “no objection” comment.

d. Duty of local government to notify department of appeal. The local government shall promptly notify the department of the filing of any petition for judicial review of local action on a variance request so the department may determine whether participation in the judicial review would be in the interest of the state.

567—71.4(455B) Exempted activities. Notwithstanding 567—70.3(17A,455B,481A) and 567—71.1(455B), the following activities do not require approval pursuant to this title by the department to construct in a floodplain:

71.4(1) *Rural bridges/culverts/road embankments and associated work.* Construction, maintenance, or use of bridges, culverts, temporary stream crossings, or road embankments in a rural area floodplain with a drainage area less than 100 square miles including associated channel changes not on protected streams with up to 500 feet in length and maximum of 25 percent reduction in length, and associated excavations within 500 feet of the project.

71.4(2) *Federally regulated railroad crossing.* Construction, maintenance, or use of federally regulated railroad crossings having a drainage area of any size.

71.4(3) *Buildings.*

a. Building additions that, when considered in aggregate with all additions constructed after July 4, 1965, increase the original floor area of a building by less than 25 percent.

b. Reconstruction of any portion of a building if the cost of reconstruction, including equivalent professional labor and material costs for proposed or actual volunteer labor and donated materials, and as would be determined by a qualified contractor, does not exceed 50 percent of the market value of the existing building or if reconstruction will not increase the market value by more than 50 percent.

71.4(4) *Pipeline and underground linear utility crossings.* The construction, operation and maintenance of buried pipeline, conduit and linear utility crossings if the natural contours of the channel and floodplain are maintained and no bank stabilization is required.

71.4(5) *Excavations.*

a. Excavations where the channel cross section is increased by 10 percent or less, as determined based on current survey, original engineering plans if being performed by a drainage district, if available.

b. Excavations for the repair and maintenance of a drainage district ditch with less than 100 square mile drainage area.

c. Excavations outside the channel and not impacting streambanks on any floodplain of any river or stream draining more than ten square miles where excess spoil is removed from the floodplain, the project does not reduce capacity of the floodplain, and surface waters are not diverted into a sinkhole or quarry excavated in carbonate rock.

71.4(6) *Boat docks.* Construction, maintenance, or use of floating boat docks on lakes, and those recreational nonfloating style boat docks located on the Mississippi and Missouri rivers, located on reservoirs within state parks, and the conservation pools of the Coralville, Rathbun, Red Rock, and Saylorville reservoirs.

71.4(7) *Small projects.* For developments in rural areas for any low damage potential project where such works obstruct less than 3 percent of the cross-sectional area of the stream channel at bankfull stage or where such works obstruct less than 15 percent of the cross-sectional area of that side of the stream's floodplain at any stage.

These rules are intended to implement Iowa Code chapter 455B, subchapter III, part 4, and sections 459.102, 459.301 and 481A.15.

ITEM 2. Rescind and reserve **567—Chapter 75**.

ITEM 3. Rescind and reserve **567—Chapter 76**.

**Iowa Department of Natural Resources
Environmental Protection Commission**

Decision Item (**indicates proposed consent item*)

***29. Chapter 72, “Criteria for Approval” – Final rule**

The Commission is requested to approve this Adopted and Filed rule to rescind and replace Chapter 72. This rulemaking is the result of Land Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 72 regulates floodplains and floodways in the state. These rules will protect life and property from floods and promote the orderly development and wise use of the floodplains of the state. New Chapter 72 contains the criteria that must be satisfied for the issuance of floodplain permits. The chapter was reviewed and edited consistent with Executive Order 10. Outdated provisions were removed and language has generally been streamlined and simplified.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025, as ARC 8634C. A public hearing was held via virtual online meetings on January 28, 2025 from 10-11am and on January 29, 2025 from 1-2pm.

Changes from NOIA: One interested party attended the meeting. No comments on these rules were received. No changes from the NOIA have been made.

Effective Date of Final Rule: June 18, 2025

Jonathan Garton, Floodplain and Dam Safety Section Supervisor
Land Quality Bureau
Environmental Services Division
Meeting: April 15, 2025

Attached: Chapter 72 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 72, “Criteria for Approval,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.263(8) and 455B.276(1).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code chapter 455B, subchapter III, part 4, and sections 459.102 and 459.301.

Purpose and Summary

Chapter 72 regulates floodplains and floodways in the state. These rules will protect life and property floods and promote the orderly development and wise use of the floodplains of the state. Proposed Chapter 72 contains the criteria that must be satisfied for the issuance of floodplain permits. This chapter has been reviewed and edited consistent with Executive Order 10. Outdated provisions have been removed and language has otherwise been streamlined and simplified.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8634C**.

Public hearings were held via virtual online meetings on January 28, 2025 from 10-11am and on January 29, 2025 from 1-2pm.

One interested party attended the meeting. No comments on these rules were received. No changes from the NOIA have been made.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2024.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 72 and adopt the following **new** chapter in lieu thereof:

CHAPTER 72

CRITERIA FOR APPROVAL

DIVISION I

SPECIAL CRITERIA FOR VARIOUS TYPES OF FLOODPLAIN DEVELOPMENT

567—72.1(455B) Bridges, culverts, and road embankments. The following criteria shall apply to the construction, operation, and maintenance of bridges, culverts, and road embankments:

72.1(1) *Bridges and road embankments affecting low damage potential areas.* For bridges and road embankments affecting floodway or floodplain areas having a low flood damage potential, the following criteria will apply:

- a. Backwater Q100.* The maximum allowable backwater for Q100 is 1.5 feet.
- b. Freeboard.* The minimum freeboard for low superstructure horizontal bridge members above Q50 is 3 feet unless a licensed engineer provides documents on the certified plans that the bridge is designed to withstand the applicable effects of ice and the horizontal stream loads and uplift forces associated with the Q100.

72.1(2) *Bridges and road embankments affecting high or maximum damage potential development.* For bridges and road embankments affecting floodway or floodplain areas occupied by buildings or building complexes having a high or maximum flood damage potential, the following criteria will apply:

- a. Backwater Q100.*
 - (1) The maximum allowable Q100 backwater for bridges and road embankments is 1 foot.
 - (2) For a bridge and road embankment located within a stream reach for which the Federal Emergency Management Agency has published a detailed Flood Insurance Study which includes a floodway, the backwater for Q100 shall not exceed the surcharge associated with the delineation for the floodway at that location.
 - (3) In no case shall the Q100 backwater effects of a bridge or road embankment reduce the existing level of protection provided by certain flood control works, unless equivalent remedial measures are provided.
- b. Freeboard.* The minimum freeboard for low superstructure horizontal bridge members above Q50 is 3 feet unless a licensed engineer provides certification that the bridge is designed to withstand the applicable effects of ice and the horizontal stream loads and uplift forces associated with the Q100.

72.1(3) *Bridge and channel change.* For bridges and culverts involving channel changes on the floodway of any stream draining at the location of the channel change between 10 and 100 square miles whereby either (i) more than a 500-foot length of the existing channel is being altered or (ii) the length of existing channel being altered is reduced by more than 25 percent, the maximum allowable backwater shall correspond to the limits permitted in 72.1(1), 72.1(2) or 72.1(4) depending upon the associated damage potential.

72.1(4) *Culverts.* The maximum allowable backwater at culvert inlets shall correspond to the limits permitted in 72.1(1) or 72.1(2) depending upon the damage potential associated with the affected area. In the case of replacement culverts, the backwater shall not exceed that created by the culvert or waterway crossing being replaced or that specified in 72.1(1) or 72.1(2) depending upon the associated damage potential, whichever is greater.

72.1(5) *Road embankments.* The criteria listed in 567—72.11(455B) for miscellaneous floodplain construction projects shall apply to road embankments located on the floodplain but not crossing any stream or river channel.

72.1(6) *Temporary channel obstructions.* Temporary stream crossings and other temporary obstructions usually constructed, operated, and maintained during the construction phase of another floodplain construction project shall meet the following criteria:

a. Low flow. Said structures will provide for the passage of the prevailing flow in the stream or river.

b. Flood flow. Said structure shall be designed to fail, be removed quickly, or otherwise operate in the event of flooding so as to prevent premature overbank flow, or meet the backwater criteria indicated in 72.1(1) or 72.1(2).

72.1(7) *Emergency.* Repairs or temporary construction required to maintain the operation of a bridge, road grade or culverts in time of emergency need not be submitted for prior department

approval. Plans of such emergency or temporary construction shall be submitted to the department for review after the event causing the emergency has passed.

567—72.2(455B) Channel changes. The following criteria shall apply to channel changes:

72.2(1) *Percent reduction in length.*

a. Streams draining over 100 square miles. For streams (other than protected streams) draining more than 100 square miles, no more than a 10 percent reduction in the original length of the existing channel through any contiguous parcel(s) of the applicant's(s') property will be allowed.

b. Rural streams draining 10 to 100 square miles. For streams (other than protected streams) draining between 10 and 100 square miles in rural areas, no more than a 25 percent reduction in the original length of the existing channel through any contiguous parcel(s) of the applicant's(s') property will be allowed.

c. Urban streams draining 2 to 100 square miles. For streams (other than protected streams) draining between 2 and 100 square miles in urban areas, no more than a 25 percent reduction in the original length of the existing channel through any contiguous parcel(s) of the applicant's(s') property will be allowed.

d. Protected streams. For protected streams no channel changes will be allowed, because of actual or potential significant adverse effects on fisheries, water quality, flood control, floodplain management, wildlife habitat, soil erosion, public recreation, the public health, welfare and safety, compatibility with the state water plan, rights of other landowners, and other factors relevant to the control, development, protection, allocation, and utilization of the stream. Protected stream status does not prohibit bank stabilization measures; tree maintenance or removal; maintenance or installation of tile outlets; machinery crossings, including concrete drive-throughs and bridges; boat or canoe ramps; or other structures permitted by the department; nor restrict riparian access to the protected stream for such uses as livestock watering or grazing.

Protected stream status does not affect current cropping practices or require the establishment or maintenance of buffer strips, filter strips or fences along protected streams.

72.2(2) *Capacity.* In the project reach, excavated channels shall have a discharge capacity equal to or greater than the existing channel. Excessive channel excavation will not be permitted.

72.2(3) *Alignments.* The alignments and dimensions of the excavated channel shall be such as to provide a smooth transition between the existing and the excavated channel.

72.2(4) *Velocities.* Velocities in the excavated channel shall not cause excessive erosion of the channel or banks, with the acceptable velocities being determined by the department. Energy dissipation structures, channel and bank protection, or other engineering measures may be required to eliminate excessive erosion of the channel or banks.

72.2(5) *Spoil disposition.* Disposition of spoil material from channel excavation of the floodplain shall be reviewed under miscellaneous floodplain construction.

72.2(6) *Increase in flood peak.* No significant increase in peak flood discharge will be permitted by the department. Floodwater retardance structures may be required to minimize any increase in peak flood discharges.

72.2(7) *Fish and wildlife habitat and public rights.* The channel change shall not have a significant adverse effect on fish and wildlife habitat or public rights to use of the stream. Conservation easements and other conditions may be required to mitigate potential damages to the quality of water, fish and wildlife habitat, recreational facilities, and other public rights.

72.2(8) *Soil erosion.* The tillage of land along the reach of a straightened stream shall be prohibited or modified when necessary to hold soil erosion to reasonable limits. Zones of land in which tillage shall be prohibited along the straightened reach shall be set on a case-by-case basis with consideration given to topography, soil characteristics, current use, and other factors affecting propensity for soil erosion. The tillage prohibition shall be recorded by the department

in the office of the appropriate county recorder and shall run with the land against the applicant and all successors in interest to the land subject to the prohibition.

72.2(9) *Encroachment on a confinement feeding operation structure.* A major water source, as identified in Appendix B, Tables 1 and 2 of 567—Chapter 65, or a water source other than a major water source shall not be constructed, expanded or diverted if the water source or major water source as constructed, expanded or diverted is closer than the following distances from a confinement feeding operation. Measurement shall be from the closest point of the confinement feeding operation structure to the top of the bank of a stream channel or the ordinary high water mark of a lake, pond, impoundment or reservoir. Farm ponds, privately owned lakes, and confinement feeding operations constructed with a secondary containment barrier pursuant to 567—subrule 65.15(17) are exempt from the separation distance requirements. The provisions of this subrule shall not be construed to allow construction of a confinement feeding operation structure on land that would be inundated by Q100 and is adjacent to a major water source.

a. Minimum separation between a water source other than a major water source and a confinement feeding operation structure is 500 feet.

b. Minimum separation between a major water source and a confinement feeding operation structure is 1,000 feet.

567—72.3Reserved.

567—72.4(455B) Levees, floodwalls, and dikes. The following criteria shall apply to levees, floodwalls, and dikes:

72.4(1) *Agricultural levees or dikes.*

a. Level of protection. The permanent height of agricultural levees or dikes normally shall be limited so that overtopping will occur due to discharges from Q10 to Q25 with the more comprehensive levee system being permitted the greater degree of protection.

b. Additional protection. Where it can clearly be shown that loss of valley storage caused by construction of the levee will not increase peak flood stages and discharges, the level of protection provided by the agricultural levee or dike may be increased beyond the Q10 to Q25 range.

c. Alignment. The location and alignment of agricultural levees or dikes shall be compatible with existing encroachment limits so that minimum flood protection levels will not be increased, and said levee or dike shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

d. Maximum effect. The maximum increase in the flood profile resulting from the construction, operation, and maintenance of an agricultural levee or dike shall be 1 foot. Equal and opposite conveyance as defined in 567—Chapter 70 shall be used in determining the maximum increase in flood profile resulting from such levees or dikes.

e. Interior drainage. All agricultural levees or dikes shall be provided with adequate interior drainage facilities.

f. Offset. A minimum offset equal to 100 feet or twice the width of a river or stream measured from top of bank to top of bank, whichever distance is less, shall be required for all agricultural levees unless a greater offset is dictated by 72.4(1) “c” or “d.”

72.4(2) *Flood control levees, floodwalls, or dikes.*

a. Design level. The minimum design flood protection level for flood control levees or dikes shall correspond to the flood profile for Q100.

b. Freeboard. The levee or dike height shall provide for at least 3 feet of freeboard above the design flood profile.

c. Alignment. The alignment of a flood control levee or dike shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

d. Interior drainage. Flood control levees or dikes shall provide for adequate interior drainage and ponding.

e. Design and specifications. The structural design and construction of flood control levees or dikes must be undertaken in accordance with accepted engineering and construction procedures and practices.

567—72.5(455B) Buildings. The following criteria apply to buildings:

72.5(1) Minimum protection levels. The minimum level of flood protection for a building depends on the damage potential of the building and contents. “Maximum” and “high” damage potential classifications are defined in 567—Chapter 70. Criteria for determining minimum levels of protection are as follows:

a. Buildings with maximum damage potential shall have the lowest floor (including basement) elevated a minimum of 1 foot above the Q500, or together with attendant utility and sanitary systems, be flood proofed to such a level.

b. Buildings with high damage potential shall have the lowest floor (including basement) elevated a minimum of 1 foot above the Q100, or together with attendant utility and sanitary systems, be flood proofed to such a level.

c. Buildings adjacent to an impoundment shall be protected to the elevation of the top of the dam unless the dam has adequate spillway capacity to discharge the flood corresponding to the damage potential of the building at an elevation below the top of the dam.

d. Buildings downstream from a dam shall be protected to a level established by the department after due consideration of the hazards posed by the dam for buildings downstream.

72.5(2) Flood protection methods. The following flood protection methods are required for buildings to which a minimum flood protection level applies.

a. Structural design and flood proofing. Basement walls and floors below the applicable minimum flood protection level shall be structurally designed and constructed to be flood proof

and able to withstand hydrostatic pressure and buoyant forces associated with a water table elevation equivalent to the minimum flood protection level. However, attached garages and storage space may be constructed below the applicable minimum protection level without flood proofing if all electrical circuit boxes, furnaces, and hot-water heaters are located above the applicable minimum protection level and adequate flood vents are provided to equalize hydrostatic forces.

b. Sanitary sewer drains. Sanitary sewer drains below the applicable minimum flood protection level shall be provided with automatic closure valves to prevent backflow.

72.5(3) *Location.* The criteria for location of a building include consideration of the potential for obstructing flood flows and the potential hazards which may arise when the building is surrounded by floodwater. Criteria for location of buildings in floodways and floodplains are as follows:

a. Obstruction. Buildings shall not be located in the floodway of a stream so as to result, individually or collectively, in any increase in the elevation of Q100 as confined to the floodway. The floodway boundary applicable to an individual application shall be determined as necessary by the department in accordance with the criteria in 567—70.4(455B). Analysis of the effect that a building in the floodway would have on flood levels shall be based on the assumption that all similarly situated landowners would be allowed an equal degree of development in the floodway.

b. Public damages. Buildings shall be located to minimize public damages associated with isolation due to flooding of surrounding ground. In identifying the potential for public damages, the department shall determine whether there is a need for access passable by wheeled vehicles during Q100, based on the department's evaluation of flood warning and response time in the area.

c. Existing buildings—replacement and improvements. In applying the criteria in 72.5(3) “a” and “b” to projects that improve or replace existing lawful buildings, the department should

prohibit the improvements or replacement only where extension of the useful life of the structure by improvement or replacement would contribute to perpetuation of an individual or collective obstruction that causes a significant increase in the level of Q100, perpetuation of a significant hazard to health or safety during floods, or perpetuation of the potential for significant flood damages to property and associated public costs.

567—72.6(455B) Water supply and wastewater treatment facilities. The following criteria shall apply to water supply and wastewater treatment facilities:

72.6(1) Location. Water supply and wastewater treatment facilities shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

72.6(2) Flood protection. Flood protection for water supply and wastewater treatment facilities shall be provided to the level necessary for high damage potential buildings or building complexes unless evidence is submitted indicating the facility is of a lesser damage potential.

567—72.7(455B) Sanitary landfills. The following criteria shall apply to sanitary landfills:

72.7(1) Location. Sanitary landfills shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

72.7(2) Flood protection. Flood protection for the active working portion of the sanitary landfill shall be provided to the level necessary for high damage potential buildings or building complexes.

567—72.8(455B) Campgrounds. The following criteria shall apply to campgrounds located in the floodplain:

72.8(1) Location. Any permanent structures, obstructions, or deposits shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

72.8(2) *Flood protection.* Any permanent structures, obstructions, or deposits shall be provided with the minimum level of flood protection associated with the designated damage potential as indicated in 72.5(1) governing buildings and building complexes.

72.8(3) *Recreational vehicles.*

- a.* Recreational vehicles shall be located on the site for less than 180 consecutive days, and
- b.* Recreational vehicles must be fully licensed and ready for highway use. A recreational vehicle is ready for highway use if it is on its wheels or jacking system and is attached to the site only by quick-disconnect-type utilities and security devices and has no permanently attached additions.

72.8(4) *Emergency action plan.* Any campground with overnight lodging in the floodplain shall have an evacuation plan that includes the following:

- a.* Responsible parties for carrying out the evacuation plan.
- b.* Action stages that are based on stream levels, gage data, or weather forecasts, as appropriate.
- c.* A detailed list of actions that need to be taken to ensure all vehicles and campers are evacuated, including how notifications are to be delivered.

567—72.9(455B) Stream protective devices. The following criteria shall apply to stream protective devices:

72.9(1) *Overflow.* Stream protective devices shall be constructed in a manner which will not cause premature overbank flow.

72.9(2) *Velocity.* Increased velocities resulting from the construction, operation, and maintenance of stream protective devices shall be limited so as not to cause excessive scour in the channel as determined by the department.

72.9(3) *Stability.* Stream protective devices shall be anchored securely to the bank or constructed in a stable manner so as not to become dislodged and result in the scattering of debris in adjacent and downstream reaches.

72.9(4) *Water quality and aesthetics.* Stream protective devices shall not adversely affect the water quality, fish and wildlife habitat or aesthetics of the stream.

567—72.10(455B) Pipeline river or stream crossings. The following criteria shall apply to pipeline river and stream crossings:

72.10(1) *Protection.* Pipeline river or stream crossings shall be sufficiently buried in the stream bed and banks or otherwise sufficiently protected to prevent rupture.

72.10(2) *Overflow and velocities.* Pipeline river or stream crossings shall be constructed, operated, and maintained so as not to create premature overbank flow or excessive scour to the channel or banks.

72.10(3) *Spoil.* Spoil material resulting from the construction of a pipeline crossing shall be disposed of in a manner which will not obstruct low flow or flood flows.

567—72.11(455B) Miscellaneous construction. The following criteria shall apply to miscellaneous construction:

72.11(1) *Structures, obstructions, or deposits.*

a. Location. Miscellaneous structures, obstructions, or deposits shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

b. Protection. Miscellaneous structures, obstructions, or deposits shall be provided with the minimum level of flood protection associated with the designated damage potential as indicated in 72.5(1) governing buildings and building complexes.

72.11(2) *Excavation.*

a. Spoil. Spoil material resulting from an excavation shall be disposed of in a manner consistent with 72.11(1)“a” pertaining to miscellaneous structures, obstructions, or deposits.

b. Levees. Levees protecting excavations shall meet the requirements of 72.11(1)“a” pertaining to miscellaneous structures, obstructions, or deposits.

c. Control of surface runoff into rock quarries. When the department investigates an application for approval of excavation of a quarry in carbonate rock on a floodplain or floodway, the department shall consider the potential for pollution of an underground watercourse or basin from drainage of surface water into the quarry. If available information including topographic and geological information support a finding that drainage of surface water into the quarry would constitute a violation of the permit requirement in Iowa Code section 455B.268(3) and might cause pollution of an underground watercourse or basin if not controlled, then the department shall require that the applicant either request a permit under Iowa Code section 455B.268(3) and 567—51.5(455B) to authorize drainage of surface water into the quarry, or construct and maintain a means of controlling drainage of surface water which would otherwise drain into the quarry.

72.11(3) *Structures or materials across a channel.* The following criteria shall apply to structures or materials such as riprap that span the channel of a stream or river and do not meet the thresholds of 567—73.3(455B):

a. The location and design of the structure shall not adversely affect the fisheries or recreational use of the stream.

b. The pool created by the structure shall not adversely affect drainage on lands not owned or under easements by the applicant.

c. The structure shall be hydraulically designed to submerge before bankfull stage is reached in the stream channel in order that increased or premature overbank flooding does not occur. Where this cannot be reasonably accomplished in order for the structure to fulfill its intended

purpose, the applicant shall demonstrate that any increased flooding will affect only lands owned or controlled by the applicant.

d. For projects that include significant appurtenant structures or works outside the stream channel, the combined effect of the total project shall not create more than one foot of backwater during floods which exceed the flow capacity of the channel, unless the proper lands, easements, or rights-of-way are obtained.

e. The structure shall be capable of withstanding the effects of normal and flood flows across its crest and against the abutments with erosion protection added as required to prevent failure of the structure during flood events.

567—72.12Reserved.

567—72.13(455B) Animal feeding operation structures. The following criteria shall apply to animal feeding operation structures:

72.13(1) *Confinement feeding operation structures located on the floodplain of a major water source.* As required by 567—Chapter 65, confinement feeding operation structures shall not be constructed on land that would be inundated by Q100 and is adjacent to a major water source. Placing fill material on floodplain land to elevate the land above the Q100 level will not be considered as removing the land from the one hundred year floodplain for the purpose of this subrule.

72.13(2) *Other animal feeding operation structures.* The following criteria shall apply to animal feeding operation structures located on the floodplain of any water source and confinement feeding operation structures located on the floodplain of a water source other than a major water source:

a. Location. Such structures shall be located outside of the floodway or demonstrate that the construction shall not result in a rise in upstream water surface elevations.

b. Flood protection. Flood protection for such structures shall be provided to the level necessary for high damage potential buildings or building complexes, pursuant to 567—72.5(455B).

These rules are intended to implement Iowa Code sections 455B.262, 455B.264, 455B.270, 455B.275, 455B.277, 459.102 and 459.301.

567—72.14 to 72.29Reserved.

DIVISION II

GENERAL CRITERIA

567—72.30(455B) General conditions. Department orders approving an activity or project shall be subject to the following conditions:

72.30(1) Maintenance. The applicant and any successor in interest to the real estate on which the project or activity is located shall be responsible for proper maintenance.

72.30(2) Responsibility. No legal or financial responsibility arising from the construction or maintenance of the approved works shall attach to the state of Iowa or the agency due to the issuance of an order or administrative waiver.

72.30(3) Lands. The applicant shall be responsible for obtaining such government licenses, permits, and approvals, and lands, easements, and rights-of-way which are required for the construction, operation, and maintenance of the authorized works.

72.30(4) Change in plans. No material change from the plans and specifications approved by the department shall be made unless authorized by the department.

72.30(5) Revocation of order. A department order may be revoked if construction is not completed within the period of time specified in the department order.

72.30(6) Performance bond. A performance bond may be required when necessary to secure the construction, operation, and maintenance of approved projects and activities in a manner that

does not create a hazard to the public's health, welfare, and safety. The amount and conditions of such bond shall be specified as special conditions in the department order.

567—72.31(455B) Waiver. A request for a waiver to this chapter shall be submitted in writing pursuant to 561—Chapter 10. The contents of a petition for waiver shall include information pursuant to 561—10.9(17A,455A).

567—72.32(455B) Protected stream information. The following describes the waiver procedure and the relation of hydrologically connected streams to protected streams:

72.32(1) *Protected streams variance procedure.* The variance shall be requested as part of the permit application and review process provided for in 567—70.3(17A,455B,481A) to 567—70.5(17A,455B,481A) and decisions on the variance request may be appealed in accordance with 567—70.6(17A,455B,481A). If the applicant is denied a permit to channelize a protected stream, the applicant may appeal to the environmental protection commission. The appeal will normally be heard by an administrative law judge but the applicant may request that the commission hear the appeal directly. If a proposed decision of an administrative law judge would affirm the denial of the permit, the applicant may appeal the administrative law judge's decision to the commission. If, on appeal, the commission affirms the denial of the permit, the applicant may appeal to the district court.

72.32(2) *Hydrologically connected streams.* Streams or waters that are hydrologically connected to protected streams are not protected streams unless specifically listed as protected streams in 72.50(2). The environmental protection commission considers the streams and waters that are hydrologically connected to streams proposed to become protected streams as one of the factors in the decision-making process to add streams to the list of protected streams in a rule-making procedure. 72.51(7) lists the other factors that affect the decision.

72.32(3) *Protected stream activities.* Protected stream status does not prohibit bank stabilization measures; tree maintenance or removal; maintenance or installation of tile outlets; machinery crossings, including concrete drive-throughs and bridges; boat or canoe ramps; or other structures permitted by the department; nor restrict riparian access to the protected stream for such uses as livestock watering or grazing. Protected stream status does not affect current cropping practices or require the establishment or maintenance of buffer strips, filter strips, or fences along protected streams except as may be required to mitigate environmental damage associated with a channel change on a protected stream.

These rules are intended to implement Iowa Code sections 455B.262, 455B.264, 455B.270, 455B.275, 455B.277, 459.102 and 459.301.

567—72.33 to 72.49Reserved.

DIVISION III

PROTECTED STREAM DESIGNATION PROCEDURE

567—72.50(455B) Protected streams.

72.50(1) *Protected streams defined.* Protected streams shall include streams designated as protected streams pursuant to the procedures of 567—72.51(455B), which upon designation will be listed in 72.50(2). Streams hydrologically connected to protected streams are not protected streams unless specifically listed as protected streams in 72.50(2).

72.50(2) *List of protected streams.* Streams designated as protected streams are the following:

ADAIR COUNTY

Middle River, east county line to confluence with unnamed creek (NE 1/4, S36, T76N, R30W, Adair Co.);

ALLAMAKEE COUNTY

Bear Creek, mouth (S1, T99N, R6W, Allamakee Co.) to west county line;

Clear Creek, mouth (S35, T100N, R5W, Allamakee Co.) to north line of S15, T100N, R5W;

Clear Creek, mouth (S29, T99N, R3W, Allamakee Co.) to west line of S25, T99N, R4W;

Cota Creek, mouth to west line of S10, T97N, R3W;

Dousman Creek, mouth (S33, T96N, R3W, Allamakee Co.) to south county line;

French Creek, mouth to east line of S23, T99N, R5W;

Hickory Creek, mouth to south line of S28, T96N, R5W;

Irish Hollow Creek, mouth to north line of S17, T100N, R4W;

Little Paint Creek, mouth to north line of S30, T97N, R3W;

Norfolk Creek, mouth to confluence with Teeple Creek (S24, T97N, R6W);

Paint Creek (a.k.a. Pine Creek), mouth (S9, T99N, R6W, Allamakee Co.) to west county line;

Paint Creek, mouth (S15, T96N, R3W, Allamakee Co.) to road crossing S18, T97N, R4W;

Patterson Creek, mouth to east line of S3, T98N, R6W;

Silver Creek, mouth (S4, T99N, R5W, Allamakee Co.) to south line of S31, T99N, R5W;

Suttle Creek, mouth (S17, T96N, R4W, Allamakee Co.) to south county line;

Teeple Creek, mouth (S24, T97N, R6W, Allamakee Co.) to spring source in S11, T97N, R6W;

Trout Run, mouth in S16, T98N, R4W through one mile reach;

Unnamed tributary to Village Creek (a.k.a. Erickson Spring Branch), mouth to west line of S23, T98N, R4W;

Unnamed tributary to the Yellow River (a.k.a. Bear Creek), mouth to north line of S12, T96N, R5W;

Upper Iowa River, from Lane's Bridge at river mile 6 to west county line;

Village Creek, mouth to west line of S19, T98N, R4W;

Waterloo Creek, mouth (S35, T100N, R6W) to north county line;

Wexford Creek, mouth to west line of S25, T98N, R3W;

Yellow River, mouth to west county line;

APPANOOSE COUNTY

Chariton River, Highway 2 (S27, T69N, R17W, Appanoose Co.) to Rathbun Lake Dam (S35, T70N, R18W, Appanoose Co.);

BENTON COUNTY

Bear Creek, east county line to confluence with Opossum Creek (S 5/8, T84N, R9W, Benton Co.);

Bear Creek, mouth (S21, T86N, R10W, Benton Co.) to confluence with unnamed creek (NE1/4, NE 1/4, S2, T86N, R10W, Benton Co.);

Cedar River, east county line to north county line;

Iowa River, south county line to west county line;

Lime Creek, mouth (S4, T86N, R10W, Benton Co.) to north county line;

Prairie Creek, mouth (S10, T85N, R10W, Benton Co.) to confluence with unnamed creek (S36, T86N, R10W, Benton Co.);

Salt Creek, mouth (S31, T82N, R12W, Benton Co.) to west county line;

Wild Cat Creek, mouth (S8, T84N, R9W, Benton Co.) to confluence with unnamed creek (W1/2, S33, T84N, R10W, Benton Co.);

Wolf Creek, north county line to west county line;

BLACK HAWK COUNTY

Black Hawk Creek, mouth (S22, T89N, R13W, Black Hawk Co.) to west county line;

Cedar River, east county line to north county line;

Crane Creek, mouth (S26, T90N, R11W, Black Hawk Co.) to confluence with unnamed creek (S3, T90N, R12W, Black Hawk Co.);

Shell Rock River, mouth (S4, T90N, R14W, Black Hawk Co.) to north county line;

Wapsipinicon River, east county line to north county line;

West Fork Cedar River, mouth (S10, T90N, R14W, Black Hawk Co.) to west county line;

Wolf Creek, mouth (S19, T87N, R11W, Black Hawk Co.) to south county line;

BOONE COUNTY

Big Creek, south county line to confluence with unnamed creek (NW 1/4, S34, T82N, R25W, Boone Co.);

Bluff Creek, mouth (S22, T84N, R27W, Boone Co.) to Don Williams Lake Outlet (S5, T84N, R27W, Boone Co.);

Des Moines River, south county line to north county line;

BREMER COUNTY

Cedar River, south county line to north county line;

Shell Rock River, south county line to west county line;

Wapsipinicon River, south county line to north county line;

BUCHANAN COUNTY

Cedar River, south county line to west county line;

Lime Creek, south county line to confluence with unnamed creek (S1, T87N, R10W, Buchanan Co.);

South Fork Maquoketa River, east county line to confluence with major unnamed creek (S4, T90N, R7W, Buchanan Co.);

Wapsipinicon River, south county line to west county line;

BUENA VISTA COUNTY

Little Sioux River, north county line to north county line (entire length in county);

North Raccoon River, south county line to the north line of the NW 1/4, SE 1/4, S12, T90N, R36W, Buena Vista Co.;

BUTLER COUNTY

Shell Rock River, east county line to north county line;

West Fork Cedar River, east county line to west county line;

CALHOUN COUNTY

Camp Creek, mouth (S7, T86N, R34W, Calhoun Co.) to confluence with unnamed creek (NE1/4, NE 1/4, S33, T87N, R34W, Calhoun Co.);

Cedar Creek, south county line to confluence with unnamed creek (S 1/2, S34, T86N, R32W, Calhoun Co.);

Lake Creek, mouth (S23, T86N, R34W, Calhoun Co.) to confluence with D.D. 13 (S33, T88N, R32W, Calhoun Co.);

North Raccoon River, south county line to west county line;

CARROLL COUNTY

Middle Raccoon River, south county line to confluence with unnamed creek (SE 1/4, S15, T84N, R35W, Carroll Co.);

North Raccoon River, east county line to north county line;

CEDAR COUNTY

Cedar River, south county line to west county line;

Rock Creek, mouth (S2, T79N, R3W, Cedar Co.) to confluence with West Rock Creek (S11, T81N, R3W, Cedar Co.);

Sugar Creek, south county line to confluence with unnamed creek (S35, T80N, R2W, Cedar Co.);

Wapsipinicon River, east county line to north county line;

CERRO GORDO COUNTY

Beaverdam Creek, south county line to confluence with unnamed creek (S12, T95N, R22W, Cerro Gordo Co.);

Shell Rock River, east county line to north county line;

Spring Creek, mouth (S28, T97N, R20W, Cerro Gordo Co.) to confluence with Blair Creek (S9, T97N, R20W, Cerro Gordo Co.);

Willow Creek, mouth (S3, T96N, R20W, Cerro Gordo Co.) to confluence with Clear Creek (S16, T96N, R21W, Cerro Gordo Co.);

Winnebago River, east county line to west county line (entire length in county);

CHEROKEE COUNTY

Little Sioux River, south county line to north county line;

Maple River, south county line to confluence with unnamed creek (N 1/2, S29, T91N, R39W, Cherokee Co.);

Mill Creek, confluence with Willow Creek (S1, T93N, R41W, Cherokee Co.) to north county line;

CHICKASAW COUNTY

Cedar River, south county line to west county line;

Crane Creek, east county line to confluence with unnamed creek (NE 1/4, S25, T95N, R11W, Chickasaw Co.);

Little Cedar River, mouth (S20, T94N, R14W, Chickasaw Co.) to west county line;

Wapsipinicon River, south county line to north county line;

CLAY COUNTY

Little Sioux River, west county line to north county line (entire length in county);

Lost Island Outlet, mouth (S35, T96N, R36W, Clay Co.) to County Road M 54 (S24, T96N, R36W, Clay Co.);

Muddy Creek, mouth (S15, T96N, R36W, Clay Co.) to County Road B 17 (north line, S23, T97N, R36W, Clay Co.);

Ocheyedan River, mouth (S13, T96N, R37W, Clay Co.) to confluence with Stoney Creek (S7, T96N, R37W, Clay Co.);

Prairie Creek, mouth (S26, T96N, R36W, Clay Co.) to confluence with unnamed creek (SE1/4, S35, T96N, R37W, Clay Co.);

Stoney Creek, mouth (S7, T96N, R37W, Clay Co.) to Highway 18 (S31, T96N, R37W, Clay Co.);

CLAYTON COUNTY

Bear Creek, mouth (S34, T92N, R4W, Clayton Co.) to west line of S23 T91N, R5W, Clayton Co.;

Bloody Run, mouth (S15, T95N, R3W) to source at Spook Cave;

Bloody Run Creek (a.k.a. Grimes Hollow), mouth (S36, T91N, R3W) to south county line;

Brownfield Creek, mouth to spring source (S31, T91N, R3W);

Buck Creek, mouth (S29, T93N, R2W, Clayton Co.) to west line of S9, T93N, R3W;

Cox Creek, mouth (S21, T92N, R5W, Clayton Co.) to south line S12, T91N, R6W, Clayton Co.;

Dry Mill Creek, mouth to west line of S9, T93N, R4W;

Elk Creek, mouth (S36, T92N, R4W, Clayton Co.) to south county line;

Ensign Creek, mouth (S28, T92N, R6W, Clayton Co.) to spring source (S29, T92N, R6W, Clayton Co.);

Hewett Creek, mouth to south line of S29, T92N, R6W;

Kleinlein Creek (a.k.a. Spring Creek), mouth to spring source (S10, T91N, R6W);

Maquoketa River, south county line to west county line;

Miners Creek, mouth to west line of S1, T92N, R3W;

Mink Creek, mouth (S30, T93N, R6W) to west county line;

Mossey Glen Creek, mouth (S3, T91N, R5W) to south line of S10, T91N, R5W, Clayton Co.;

North Cedar Creek, mouth (S8, T94N, R3W) to source;

Pecks Creek, mouth to south line of S15, T91N, R3W;

Pine Creek, mouth (S26, T91N, R4W) to confluence with Brownfield Creek (S25, T91N, R4W);

Point Hollow Creek (a.k.a. White Pine Creek), mouth (S31, T91N, R2W) to south county line;

Roberts Creek, mouth (SE 1/4, S25, T93N, R5W, Clayton Co.) to confluence with an unnamed creek (SE 1/4, S15, T95N, R6W, Clayton Co.);

Sny Magill Creek (a.k.a. Magill Creek), mouth to source;

South Cedar Creek (a.k.a. Cedar Creek), mouth (S33, T92N, R3W, Clayton Co.) to north line of S30, T93N, R3W, Clayton Co.;

Steeles Branch, mouth (S26, T91N, R4W) to south line S32, T91N, R4W, Clayton Co.

(entire length in county);

Turkey River, confluence with Volga River to west county line;

Unnamed tributary to Sny Magill Creek (a.k.a. West Fork Sny Magill Creek), mouth (S7, T94N, R3W) to west line of S7, T94N, R3W;

Volga River, mouth (S26, T92N, R4W, Clayton Co.) to west county line;

CLINTON COUNTY

Elk River, mouth (S20, T83N, R7E, Clinton Co.) to confluence with North Branch Elk River (S10, T83N, R6E, Clinton Co.);

Wapsipinicon River, mouth (S13, T80N, R5E, Clinton Co.) to west county line (entire length in county);

CRAWFORD COUNTY

Boyer River, south county line to north county line;

DALLAS COUNTY

Des Moines River, east county line to north county line (entire length in county);

Middle Raccoon River, mouth (S9, T78N, R29W, Dallas Co.) to west county line (entire length in county);

North Raccoon River, mouth (S21, T78N, R27W, Dallas Co.) to north county line (S5, T81N, R29W, Dallas Co.) (entire length in county);

Raccoon River, east county line to confluence with North Raccoon River (S21, T78N, R27W, Dallas Co.);

DAVIS COUNTY

Des Moines River, east county line to north county line (entire length in county);

DECATUR COUNTY

Thompson River, Highway 69 (S35, T68N, R26W, Decatur Co.) to west county line;

DELAWARE COUNTY

Bloody Run Creek (a.k.a. Grimes Hollow), north county line to spring source (S3, T90N, R3W);

Coffins Creek, mouth (S19, T89N, R5W, Delaware Co.) to confluence with Prairie Creek (S29, T89N, R6W, Delaware Co.);

Elk Creek, north county line to confluence with unnamed creek (center, S13, T90N, R4W, Delaware Co.);

Fenchel Creek, mouth (S5, T90N, R6W) to Richmond Springs (center of S4, T90N, R6W);

Fountain Spring Creek (a.k.a. Odell Branch), mouth (SE 1/4, S10, T90N, R4W) to confluence with South Branch Fountain Spring Creek (SE 1/4, S16, T90N, R4W);

Little Turkey River, north county line to south line of S11, T90N, R3W;

Maquoketa River, south county line to north county line;

Sand Creek, mouth (S9, T88N, R5W, Delaware Co.) to confluence with major unnamed creek (SW 1/4, S11, T88N, R6W, Delaware Co.);

Schechtman Branch, mouth to south line of S14, T90N, R4W;

South Branch Fountain Spring Creek, mouth (S16, T90N, R4W) to spring source (S16, T90N, R4W);

South Fork Maquoketa River, mouth (S16, T90N, R6W, Delaware Co.) to west county line;

Spring Branch, mouth (S10, T88N, R5W) to major spring source, north of Highway 20 (S35, T89N, R5W, Delaware Co.);

Steeles Branch, north county line to west line of S5, T90N, R4W, Delaware Co.

(entire length in county between S4, T90N, R4W and west line of S5, T90N, R4W);

Twin Springs Creek, mouth (S2, T90N, R4W) to spring source (S12, T90N, R4W);

DES MOINES COUNTY

Cedar Creek, mouth (S1, T69N, R5W, Des Moines Co.) to Geode Lake Dam;

Cedar Creek, west county line to confluence with unnamed creek (S18, T70N, R4W, Des Moines Co.);

Flint Creek, mouth (S28, T70N, R2W, Des Moines Co.) to confluence with unnamed creek (NW 1/4, S21, T71N, R4W, Des Moines Co.);

Skunk River, mouth (S8, T68N, R2W, Des Moines Co.) to east county line (entire length in county);

DICKINSON COUNTY

Little Sioux River, south county line to confluence with West Fork Little Sioux River (S7, T99N, R37W, Dickinson Co.);

DUBUQUE COUNTY

Bloody Run, mouth (S34, T90N, R2E) to west line of S21, T90N, R2E;

Catfish Creek, mouth (S5, T88N, R3E, Dubuque Co.) to source;

Cloie Branch, mouth (S5, T89N, R2E) to west line of S5, T89N, R2E;

Hogans Branch, mouth (S35, T89N, R1W) to west line of S9, T88N, R1W;

Little Maquoketa River, mouth (S26, T90N, R2E, Dubuque Co.) to north line of NE 1/4, S5, T88N, R1W, Dubuque Co.;

Middle Fork Little Maquoketa River, west line of S31, T90N, R1E to north line of S33, T90N, R1W;

Point Hollow Creek (a.k.a. White Pine Creek), north county line to spring source (S8, T90N, R2W);

Tete des Morts Creek (a.k.a. Tete des Morts River), mouth (S34, T88N, R4E, Dubuque Co.) to south county line (S34, T88N, R4E, Dubuque Co.);

EMMET COUNTY

Brown Creek, mouth (S24, T99N, R34W, Emmet Co.) to Highway 9 (S13, T99N, R34W, Emmet Co.);

Des Moines River, south county line to north county line;

East Fork Des Moines River, east county line to Tuttle Lake Outlet (S13, T100N, R32W, Emmet Co.);

FAYETTE COUNTY

Bass Creek, mouth (S3, T95N, R9W) to west line of S3, T95N, R9W;

Bear Creek, mouth (S8, T92N, R7W, Fayette Co.) to west line of S6, T92N, R7W;

Bell Creek, mouth (S10, T94N, R7W) to west line of S8, T94N, R7W;

Brush Creek, mouth (S26, T93N, R7W, Fayette Co.) to east line of S17, T92N, R7W, Fayette Co.;

Crane Creek, mouth (S31, T95N, R9W, Fayette Co.) to west county line;

Grannis Creek, mouth (S30, T93N, R7W), to west line of S36, T93N, R8W, Fayette Co.;

Little Turkey River, mouth (S18, T95N, R8W, Fayette Co.) to north county line;

Maquoketa River, east county line to north line of S24, T91N, R7W;

Mink Creek, east county line to west line of S15, T93N, R7W;

North Branch Volga River, mouth (S33, T93N, R9W, Fayette Co.) to confluence with unnamed creek (S8, T93N, R9W, Fayette Co.);

Otter Creek, mouth to confluence with unnamed tributary (a.k.a. Glovers Creek) in S22, T94N, R8W;

Turkey River, east county line to north county line;

Unnamed tributary to Otter Creek (a.k.a. Glovers Creek), mouth (S22, T94N, R8W) to west line of S15, T94N, R8W;

Volga River, east county line to confluence with an unnamed creek (NW 1/4, NE 1/4, SE 1/4, S24, T93N, R10W, Fayette Co.);

FLOYD COUNTY

Cedar River, east county line to north county line;

Little Cedar River, east county line to north county line;

Rock Creek, mouth (S24, T97N, R17W, Floyd Co.) to north county line (entire length in county);

Shell Rock River, south county line to west county line;

Winnebago River, mouth (S14, T95N, R18W, Floyd Co.) to west county line;

FRANKLIN COUNTY

Beaver Creek, east county line to road crossing (S28, T90N, R19W, Franklin Co.);

Beaverdam Creek, mouth (S19, T93N, R19W, Franklin Co.) to north county line;

Iowa River, south county line to west county line (entire length in county);

Maynes Creek, confluence with unnamed creek (S12, T91N, R19W, Franklin Co.) to confluence with unnamed creek (S30, T91N, R20W, Franklin Co.);

Otter Creek, mouth (S28, T92N, R19W, Franklin Co.) to County Road C 23 (north line of S31, T93N, R20W, Franklin Co.);

West Fork Cedar River, east county line to confluence with Beaverdam & Bailey Creeks (S19, T93N, R19W, Franklin Co.);

GREENE COUNTY

Cedar Creek, mouth (S33, T85N, R32W, Greene Co.) to north county line;

North Raccoon River, south county line to west county line (entire length in county);

GRUNDY COUNTY

Black Hawk Creek, east county line to confluence with Minnehaha Creek (S7, T87N, R16W, Grundy Co.);

Wolf Creek, east county line to confluence with unnamed creek (S32, T86N, R17W, Grundy Co.);

GUTHRIE COUNTY

Middle Raccoon River, Lake Panorama (S15, T80N, R31W, Guthrie Co.) to north county line;

Middle Raccoon River, east county line to Lake Panorama Outlet (S31, T80N, R30W, Guthrie Co.);

HAMILTON COUNTY

Boone River, west county line to north county line;

Des Moines River, west county line to west county line (entire length in county);

Eagle Creek, mouth (S6, T89N, R25W, Hamilton Co.) to north county line;

White Fox Creek, mouth (S33, T89N, R25W, Hamilton Co.) to north county line;

HANCOCK COUNTY

East Fork Iowa River, south county line to confluence with Galls Creek (S12, T95N, R24W, Hancock Co.);

West Fork Iowa River, south county line to County Road B 55 (north line of S31, T95N, R24W, Hancock Co.);

Winnebago River, east county line to north county line (entire length in county);

HARDIN COUNTY

Iowa River, south county line to north county line;

School Creek, mouth (S28, T89N, R20W, Hardin Co.) to confluence with unnamed creek (S16, T89N, R20W, Hardin Co.);

South Fork Iowa River, mouth (S4, T86N, R19W, Hardin Co.) to Highway 359 (S11, T88N, R22W, Hardin Co.);

HENRY COUNTY

Cedar Creek, mouth (S9, T71N, R7W, Henry Co.) to west county line (entire length in county);

Cedar Creek, upper extent of Geode Lake (S25, T70N, R5W, Henry Co.) to east county line;

Crooked Creek, west county line to north county line;

Skunk River, south county line to west county line (NW 1/4, S30, T73N, R7W, Henry Co.)(entire length in Henry Co.);

HOWARD COUNTY

Beaver Creek, mouth (S19, T100N, R12W, Howard Co.) to south line of S29, T100N, R13W;

Bohemian Creek, east county line to west line of S2, T97N, R11W;

Chialk Creek, mouth (S1, T98N, R11W, Howard Co.) to north line S36, T99N, R11W, Howard Co.;

Nichols Creek (a.k.a. Bigalks Creek), east county line to west line of S23, T100N, R11W;

Staff Creek, mouth to west line of S27, T100N, R14W;

Turkey River, east county line to confluence with South Branch Turkey River (S2, T98N, R12W, Howard Co.);

Upper Iowa River, all of the river located in Howard County;

Wapsipinicon River, south county line to west county line;

HUMBOLDT COUNTY

Des Moines River, south county line to north line S7, T92N, R30W, Humboldt Co.;

East Fork Des Moines River, mouth (S19, T91N, R28W, Humboldt Co.) to north county line;

IDA COUNTY

Little Sioux River, west county line to north county line;

Maple River, west county line to north county line;

IOWA COUNTY

Iowa River, east county line to north county line;

JACKSON COUNTY

Brush Creek, north line of S23, T85N, R3E to north line of S1, T85N, R3E;

Cedar Creek, mouth (S30, T85N, R3E) to east line of S29, T85N, R3E;

Little Mill Creek, mouth to west line of S29, T86N, R4E;

Maquoketa River, mouth (S7, T85N, R6E, Jackson Co.) to west county line (entire length in county);

Mill Creek, mouth (S18, T86N, R5E, Jackson Co.) to confluence with unnamed creek (S1, T86N, R3E, Jackson Co.);

Mineral Creek, mouth (S32, T85N, R1E, Jackson Co.) to west county line;

Ozark Spring Run, mouth (S32, T86N, R1E) to spring source in center of S32, T86N, R1E;

Pleasant Creek (a.k.a. Springbrook), confluence with unnamed creek (E 1/2, S11, T85N, R4E, Jackson Co.) to west line S15, T85N, R4E, Jackson Co.;

South Fork Big Mill Creek, mouth (S8, T86N, R4E, Jackson Co.) to west line S17, T86N, R4E, Jackson Co.;

Storybook Hollow, mouth (S7, T86N, R4E, Jackson Co.) to south line of S12, T86N, R3E, Jackson Co.;

Tete des Morts Creek (a.k.a. Tete des Morts River), north county line (S3, T87N, R4E, Jackson Co.) to confluence with unnamed creek (NW 1/4, S4, T87N, R3E, Jackson Co.);

Unnamed creek, mouth (S1, T86N, R3E, Jackson Co.) to west line S1, T86N, R3E, Jackson Co.;

Unnamed tributary to Lytle Creek, mouth (S7, T86N, R2E) to west line of S11, T86N, R1E;

JEFFERSON COUNTY

Crooked Creek, mouth (S1, T73N, R8W, Jefferson Co.) to east county line;

Skunk River, east county line (east line, S13, T72N, R8W, Jefferson Co.) to north county line (north line, S1, T73N, R8W, Jefferson Co.) (entire length in Jefferson Co.);

JOHNSON COUNTY

Cedar River, east county line to north county line;

Clear Creek, Interstate 380 (S34, T80N, R7W, Johnson Co.) to confluence with unnamed creek (S29, T80N, R8W, Johnson Co.);

Iowa River, south county line (south line, S32, T77N, R5W, Johnson Co.) to Coralville Dam (S22, T80N, R6W, Johnson Co.);

North Branch Old Mans Creek, mouth (S31, T79N, R7W, Johnson Co.) to north line S23, T79N, R8W, Johnson Co.;

JONES COUNTY

Buffalo Creek, mouth (S10, T84N, R4W, Jones Co.) to west county line;

Maquoketa River, east county line to north county line (entire length in county);

Mineral Creek, east county line to west line S29, T85N, R1W, Jones Co.;

Wapsipinicon River, south county line to west county line;

KEOKUK COUNTY

North Skunk River, mouth (S5, T74N, R10W, Keokuk Co.) to west county line;

Skunk River, east county line to confluence with North & South Skunk Rivers (S5, T74N, R10W, Keokuk Co.);

South English River, east county line to confluence with unnamed creek (S6, T77N, R13W, Keokuk Co.);

South Skunk River, mouth (S5, T74N, R10W, Keokuk Co.) to confluence with Olive Branch Creek (S30, T75N, R13W, Keokuk Co.);

KOSSUTH COUNTY

Buffalo Creek, mouth (S20, T97N, R28W, Kossuth Co.) to confluence with North Buffalo Creek (S4, T97N, R27W, Kossuth Co.);

East Fork Des Moines River, south county line to west county line;

LEE COUNTY

Des Moines River, mouth (S34, T65N, R5W, Lee Co.) to west county line (entire length in county);

Skunk River, mouth (S8, T68N, R2W, Lee Co.) to north county line (entire length in county);

LINN COUNTY

Bear Creek, mouth (S21, T84N, R8W, Linn Co.) to west county line;

Buffalo Creek, east county line to Highway 13 (S10, T86N, R6W, Linn Co.);

Cedar River, south county line to west county line;

East Otter Creek, confluence with Otter Creek (S7, T84N, R7W, Linn Co.) to confluence with unnamed creek (S 1/2, S28, T85N, R7W, Linn Co.);

Wapsipinicon River, east county line to north county line;

LOUISA COUNTY

Cedar River, mouth (S20, T75N, R4W, Louisa Co.) to north county line;

Iowa River, mouth to north county line (NW 1/4, S6, T76N, R5W, Louisa Co.) (entire length in county);

Long Creek, mouth (S1, T74N, R4W, Louisa Co.) to west county line;

LUCAS COUNTY

Chariton River, Rathbun Lake (S34, T71N, R20W, Lucas Co.) to Highway 14 (S31, T72N, R21W, Lucas Co.);

White Breast Creek, north county line to confluence with unnamed creek (W 1/2, NW 1/4, S6, T71N, R23W, Lucas Co.);

Wolf Creek, mouth (S15, T71N, R21W, Lucas Co.) to confluence with unnamed creek (NE 1/4, S36, T71N, R22W, Lucas Co.);

LYON COUNTY

Big Sioux River, south county line to north county line;

Little Rock River, mouth (S35, T98N, R46W, Lyon Co.) to confluence with unnamed creek (S10, T98N, R44W, Lyon Co.);

Otter Creek, mouth (S21, T98N, R44W, Lyon Co.) to south county line;

Rock River, south county line to north county line;

MADISON COUNTY

Middle River, east county line to west county line;

Thompson River, south county line to confluence with unnamed creek (NW 1/4, S7, T74N, R29W, Madison Co.);

MAHASKA COUNTY

Des Moines River, south county line to west county line (entire length in county);

North Skunk River, east county line to north county line;

MARION COUNTY

Des Moines River, east county line to west county line (entire length in county);

White Breast Creek, mouth to west county line;

MARSHALL COUNTY

Iowa River, east county line to Marshalltown Center St.

Dam (S26, T84N, R18W, Marshall Co.);

Iowa River, confluence with Dowd Creek (S2, T85N, R19W, Marshall Co.) to north county line;

Minerva Creek, mouth (S2, T84N, R19W, Marshall Co.) to confluence with major unnamed creek (NW 1/4, S9, T85N, R20W, Marshall Co.);

Wolf Creek, north county line to north county line (S2, T85N, R17W, Marshall Co.) (entire length in county);

MITCHELL COUNTY

Beaver Creek, mouth to north line of S19, T99N, R15W;

Burr Oak Creek, mouth (S12, T98N, R16W, Mitchell Co.) to north line of S5, T98N, R16W, Mitchell Co.;

Cedar River, south county line to north county line;

Deer Creek, mouth (S23, T99N, R18W, Mitchell Co.) to west county line;

Little Cedar River, south county line to north county line;

Rock Creek, south county line (S14, T97N, R17W, Mitchell Co.) to north line of S26, T98N, R18W, Mitchell Co.

(entire length in county between south line of S14, T97N, R17W and north line of S26, T98N, R18W);

Spring Creek, mouth to north line of S8, T97N, R16W;

Turtle Creek, mouth to east line of S7, T99N, R17W;

Wapsipinicon River, east county line to north line of S20, T100N, R15W;

MONONA COUNTY

Maple River, south line (S34, T85N, R43W, Monona Co.) to north county line;

MONROE COUNTY

Des Moines River, east county line to north county line (entire length in county);

MUSCATINE COUNTY

Cedar River, south county line to north county line;

Pine Creek, mouth (S21, T77N, R1E, Muscatine Co.) to confluence with unnamed creek (S26, T78N, R1W, Muscatine Co.);

Sugar Creek, mouth (S17, T78N, R2W, Muscatine Co.) to north county line;

O'BRIEN COUNTY

Little Sioux River, south county line to east county line;

Mill Creek, south county line to confluence with unnamed creek (NE 1/4, S9, T95N, R41W, O'Brien Co.);

PLYMOUTH COUNTY

Big Sioux River, south county line to north county line;

POLK COUNTY

Big Creek, upper extent of Big Creek Lake (S9, T81N, R25W, Polk Co.) to north county line;

Des Moines River, east county line to west county line (entire length in county);

Raccoon River, mouth (S10, T78N, R24W, Polk Co.) to west county line;

RINGGOLD COUNTY

Thompson River, east county line to north county line;

SAC COUNTY

Boyer River, south county line to confluence with unnamed creek (S6, T89N, R37W, Sac Co.);

Indian Creek, mouth (S24, T87N, R36W, Sac Co.) to north line (S20, T87N, R36W, Sac Co.);

North Raccoon River, east county line to north county line;

SCOTT COUNTY

Lost Creek, mouth (S15, T80N, R5E, Scott Co.) to confluence with unnamed creek (NW 1/4, S7, T79N, R5E, Scott Co.);

Wapsipinicon River, mouth (S13, T80N, R5E, Scott Co.) to north county line (NE 1/4, S1, T80N, R1E, Scott Co.) (entire length in county);

SIOUX COUNTY

Big Sioux River, south county line to north county line;

Rock River, mouth (S1, T95N, R48W, Sioux Co.) to north county line;

STORY COUNTY

South Skunk River, confluence with Squaw Creek (S12, T83N, R24W, Story Co.) to north county line;

TAMA COUNTY

Iowa River, east county line to west county line;

Raven Creek, mouth (S25, T83N, R16W, Tama Co.) to confluence with unnamed creek (S6, T82N, R16W, Tama Co.);

Salt Creek, east county line to confluence with South Branch Salt Creek (S29, T84N, R13W, Tama Co.);

UNION COUNTY

Thompson River, south county line to north county line;

Twelve Mile Creek, mouth (S36, T71N, R28W, Union Co.) to Twelve Mile Lake Dam (S12, T72N, R30W, Union Co.);

VAN BUREN COUNTY

Cedar Creek, east county line (SE 1/4, S12, T70N, R8W) to east county line (NE 1/4, S12, T70N, R8W);

Des Moines River, south county line to west county line (entire length in county);

WAPELLO COUNTY

Des Moines River, south county line to west county line (entire length in county);

South Avery Creek, mouth (S31, T73N, R14W, Wapello Co.) to west county line;

WARREN COUNTY

Des Moines River, east county line to north county line (entire length in county);

Middle River, confluence with Clanton Creek (S28, T76N, R25W, Warren Co.) to west county line;

White Breast Creek, east county line to south county line;

WASHINGTON COUNTY

Crooked Creek, south county line to confluence with East and West Fork Crooked Creeks (S24, T74N, R7W, Washington Co.);

English River, mouth (S11, T77N, R6W, Washington Co.) to confluence with South English River (S6, T77N, R9W, Washington Co.);

Iowa River, east county line (east line, S36, T77N, R6W, Washington Co.) to north county line (north line, S2, T77N, R6W, Washington Co.) (entire length in Washington Co.);

Long Creek, east county line to confluence with South Fork Long Creek (S26, T75N, R6W, Washington Co.);

Skunk River, south county line (SE 1/4, S36, T74N, R8W, Washington Co.) to west county line (SW 1/4, S6, T74N, R9W, Washington Co.) (entire length in county);

South English River, mouth (S6, T77N, R9W, Washington Co.) to west county line;

WEBSTER COUNTY

Boone River, mouth (S36, T87N, R27W, Webster Co.) to east county line;

Brushy Creek, west line (S16, T88N, R27W, Webster Co.) to confluence with unnamed creek (S8, T88N, R27W, Webster Co.);

Brushy Creek, mouth (S15, T87N, R27W, Webster Co.) to south line S34, T88N, R27W, Webster Co.;

Deer Creek, mouth (S24, T90N, R29W, Webster Co.) to north line S16, T90N, R29W, Webster Co.;

Des Moines River, south county line to north county line (entire length in county);

Lizard Creek, mouth (S19, T89N, R28W, Webster Co.) to confluence with D.D. #3 (S35, T90N, R30W, Webster Co.);

South Branch Lizard Creek, mouth (S23, T89N, R29W, Webster Co.) to west line S32, T89N, R29W, Webster Co.;

WINNEBAGO COUNTY

Winnebago River, south county line to north county line;

WINNESHIEK COUNTY

Bear Creek (a.k.a. South Bear Creek), east county line to source (a.k.a. Mestad Springs, S29, T100N, R7W);

Bohemian Creek, mouth to west county line;

Canoe Creek, mouth (S25, T99N, R7W, Winneshiek Co.) to west line of S8, T99N, R8W, Winneshiek Co.;

Coon Creek, mouth to road crossing in NW 1/4, S13, T98N, R7W;

Dry Run, mouth to west line of S36, T98N, R9W;

East Pine Creek, mouth (S28, T100N, R9W) to north county line (S10, T100N, R9W);

Martha Creek, mouth to west line of S13, T99N, R10W;

Middle Bear Creek, mouth to north line of S16, T100N, R7W;

Nichols Creek (a.k.a. Bigalk Creek), mouth to west county line;

North Bear Creek, mouth to north county line;

North Canoe Creek, mouth to north line of S2, T99N, R8W;

Paint Creek (a.k.a. Pine Creek), east county line to confluence with unnamed creek (SE 1/4, S11, T99N, R7W, Winneshiek Co.);

Pine Creek, mouth (S10, T99N, R9W) to north county line;

Pine Creek, mouth (S26, T99N, R7W) to north line of S21, T99N, R7W;

Silver Creek, mouth to north line of S26, T100N, R9W;

Smith Creek (a.k.a. Trout River), mouth (S21, T98N, R7W) to south line of S33, T98N, R7W;

Ten Mile Creek, mouth to confluence with Walnut Creek (S18, T98N, R9W);

Trout Creek, mouth (S9, T98N, R7W) to confluence with Smith Creek (S21, T98N, R7W);

Trout Creek, mouth (S23, T98N, R8W) to confluence with unnamed tributary (a.k.a. Trout Run) in S27, T98N, R8W;

Turkey River, south county line to west county line;

Twin Springs creek, mouth (S17, T98N, R8W) through one half mile reach;

Unnamed creek, mouth (SE 1/4, S11, T99N, R7W, Winneshiek Co.) to north line S12, T99N, R7W, Winneshiek Co.;

Unnamed tributary to Trout Creek (a.k.a. Trout Run), mouth (S27, T98N, R8W, Winneshiek Co.)
to south line of S27, T98N, R8W;

Unnamed tributary to Upper Iowa River (a.k.a. Casey Springs Creek), mouth (S25, T99N, R9W)
to west line of S26, T99N, R9W;

Unnamed tributary to Upper Iowa River (a.k.a. Coldwater Creek), mouth (S32, T100N, R9W) to
north county line;

Upper Iowa River, east county line to west county line;

Yellow River, east county line to confluence with North Fork Yellow River (S13, T96N, R7W);

WOODBURY COUNTY

Little Sioux River, confluence with Parnell Creek (S25, T86N, R44W, Woodbury Co.) to east
county line;

Maple River, south county line to east county line;

WORTH COUNTY

Deer Creek, east county line to confluence with unnamed creek (east line, S28, T100N, R19W,
Worth Co.);

Elk Creek, mouth (S27, T99N, R20W, Worth Co.) to Highway 105 (S5, T99N, R22W, Worth
Co.);

Shell Rock River, south county line to north county line;

Winans Creek, mouth (S36, T98N, R22W, Worth Co.) to N/S road crossing (S 1/2, S25, T98N,
R22W, Worth Co.);

Winnebago River, south county line (S32, T98N, R21W, Worth Co.) to south county line (S34,
T98N, R22W, Worth Co.) (entire length in county);

WRIGHT COUNTY

Boone River, south county line to confluence with Middle Branch Boone River (S2, T93N,
R26W, Wright Co.);

Eagle Creek, south county line to confluence with Drainage Ditch No.

9 (S30, T91N, R25W, Wright Co.);

East Fork Iowa River, mouth (S19, T93N, R23W, Wright Co.) to north county line;

Iowa River, east county line (S13, T90N, R23W, Wright Co.) to confluence with East and West Fork Iowa Rivers (S19, T93N, R23W, Wright Co.) (entire length in county);

West Fork Iowa River, mouth (S19, T93N, R23W, Wright Co.) to north county line;

White Fox Creek, south county line to confluence with unnamed creek (E 1/2, SE 1/4, S36, T91N, R25W, Wright Co.).

567—72.51(455B) Protected stream designation procedure.

72.51(1) *Eligible petitioners.* Any state agency, governmental subdivision, association or interested person may petition the commission, according to the rules of this division, to designate a stream as a protected stream. However, if the stream had been the subject of a similar petition filed within the past two years, the commission shall not accept a petition except upon a majority vote.

72.51(2) *Content of petition.* The petition for protected stream designation shall contain the following: (1) names, addresses, and the telephone numbers of the petitioners; (2) location of the stream nominated for designation; (3) reasons why the stream is nominated, each reason being stated in a separate numbered paragraph; and (4) adequate evidence supporting the reasons for nomination. Eleven copies of the petition shall be filed with the department.

72.51(3) *Department review of petition.* Upon receipt of a petition for designation of a stream as a protected stream, the department shall make an initial determination as to whether the petition complies with 72.51(2) and whether the stream has a sufficient number of environmental amenities listed in 72.51(7) that further investigation is warranted. If the department finds the petition not in compliance with 72.51(7) or that further investigation is not warranted, agency proceedings to designate the nominated stream as protected shall cease and the petitioner shall

be notified of the reasons for refusing to accept and act upon the petition. A petitioner aggrieved by the department's decision may appeal the decision within 30 days to an executive committee of at least three commission members.

72.51(4) *Notice of initiation of protected stream designation proceedings.* Upon department acceptance of a petition nominating a stream for protected stream designation, the department shall do the following:

a. Notice of intended action. Publish a notice of intended action in the Iowa Administrative Bulletin, the content of which identifies the nominated stream and requests public input into the protected stream designation procedure.

b. Commission notification. Notify the commission at the next meeting of the filing of a petition for protected stream designation.

c. Interested agency notification. Notify regional planning commissions, county boards of supervisors, city councils, soil conservation districts through which the nominated stream runs, the fish and wildlife bureaus of the department, the soil conservation and water quality division of the department of agriculture and land stewardship, the department of agriculture and land stewardship and the Iowa geological survey.

d. Countywide notification. Publish notice of the filing of the petition in a newspaper of general circulation for two consecutive weeks in each county in which the nominated stream is located.

72.51(5) *Department investigation report.* Upon department acceptance of a petition nominating a stream for protected stream designation, the department shall do the following:

a. Investigation. Supervise a field staff investigation of the stream nominated for protected stream status for the purpose of assessing the effect that extending department floodplain regulation would have on the factors listed in 72.51(7);

b. Report. File a report with the commission at a monthly commission meeting held within one year after the notice of intended action was published; the report shall specifically state findings of fact or each reason alleged in the petition in support of a protected stream designation and convey a staff recommendation, including any minority recommendations and recommendations of other governmental bodies and interested persons on whether or not the stream should be regulated;

c. Interagency coordination. Invite the fish and wildlife bureaus of the department, the Iowa geological survey, and any other agency or governmental subdivision expressing an interest in the proceeding to participate in the field investigation and preparation of the report, and request their assessment of whether extension of department jurisdiction over the nominated stream would have either an adverse or beneficial impact on their agency's water resource programs.

72.51(6) *Commission determination.* After receipt of the director's report and the public has had an opportunity to submit written comments and make an oral presentation, the commission shall make a determination in writing whether or not to designate the stream identified in the petition as a protected stream, except that the commission may continue the proceeding as needed to collect or analyze additional data. The commission's determination shall be based on the factors listed in 72.51(7), as applied to the nominated stream and its floodplain, and to other relevant streams and floodplains located in the same watershed as the nominated stream, as well as any underground water system hydrologically connected to the nominated stream.

72.51(7) *Basis for protected stream designation.* Commission determination of whether or not to classify a stream as a protected stream shall be based on the balancing of the costs and benefits of possible floodplain development as it would affect the following factors: (1) maintenance of stream fishery capacity; (2) water quality preservation; (3) wildlife habitat preservation; (4) flood control; (5) floodplain management; (6) existing floodplain developments; (7) soil erosion control; (8) the needs of agriculture and industry; (9) the maintenance and

enhancement of public recreational opportunities; (10) the public's health, welfare and safety; (11) compatibility with the state water plan; (12) property and water rights of landowners; (13) other factors relevant to the control, development, protection, allocation, and utilization of the nominated stream and water hydrologically connected to it.

567—72.52(455B) Protected stream declassification procedure. The procedure for removing a stream from the list of protected streams in 72.50(2) shall be the same as the rules for designation of a stream as a protected stream, except that all notices, investigations and reports shall be addressed to the issue of declassification.

These rules are intended to implement Iowa Code sections 455B.262, 455B.264, 455B.270, 455B.275, 455B.277, 459.102 and 459.301.

**Iowa Department of Natural Resources
Environmental Protection Commission**

Decision Item (**indicates proposed consent item*)

***30. Chapter 73, “Approval, Construction, Use, Maintenance, Removal, Inspections, and Safety of Dams” – Final Rule**

The Commission is requested to approve this Adopted and Filed rule to rescind and replace Chapter 73. This rulemaking is the result of Land Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 73 regulates dams in the state, including construction, inspections, and owner responsibilities. A state dam safety program reduces the risks of dam failures that can lead to loss of life and property damage. Iowa’s dam safety rules closely follow the current best practices and national standards. The chapter was reviewed and edited consistent with Executive Order 10.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025, as ARC 8636C. A public hearing was held via virtual online meetings on January 28, 2025 from 10-11am and on January 29, 2025 from 1-2pm.

Changes from NOIA: One interested party attended the meeting. No comments on these rules were received. No changes from the NOIA have been made.

Effective Date of Final Rule: June 18, 2025

Jonathan Garton, Floodplain and Dam Safety Section Supervisor
Land Quality Bureau
Environmental Services Division
Meeting: April 15, 2025

Attached: Chapter 73 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and File

The Environmental Protection Commission (Commission) hereby rescinds Chapter 73, “Approval, Construction, Use, Maintenance, Removal, Inspections, and Safety of Dams,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.263(8) and 455B.276(1).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code chapter 455B, subchapter III, part 4.

Purpose and Summary

Chapter 73 regulates dams in the state, including construction, inspections, and owner responsibilities. A state dam safety program reduces the risks of dam failures that can lead to loss of life and property damage. Iowa’s dam safety rules closely follow the current best practices and national standards. This chapter was reviewed and edited consistent with Executive Order 10.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as ARC 8636C.

Public hearings were held via virtual online meetings on January 28, 2025 from 10-11am and on January 29, 2025 from 1-2pm.

One interested party attended the meeting. No comments on these rules were received. No changes from the NOIA have been made.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2024.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 73 and adopt the following **new** chapter in lieu thereof:

CHAPTER 73

APPROVAL, CONSTRUCTION, USE, MAINTENANCE, REMOVAL,

INSPECTIONS, AND SAFETY OF DAMS

DIVISION I

SCOPE AND DEFINITIONS

567—73.1(455B) Scope and applicability. The department regulates the storage of water and the construction and maintenance of dams. Any person who desires to construct, repair, modify, abandon, or remove a dam has a responsibility to determine whether approval is required from the department prior to undertaking any such work.

567—73.2(455B) Definitions. The following definitions apply to this chapter:

“Abandonment” means to render a dam nonimpounding by dewatering and filling the reservoir created by that dam with solid materials and by diverting the natural drainage around the site.

“Acre-foot” means a volume of water that would cover one acre of land one foot deep, equal to 43,560 cubic feet of water.

“Adverse consequences” means negative impacts that may occur upstream, downstream, or at locations remote from the dam. The primary concerns are loss of human life, economic loss including but not limited to property damage, public damages, disruption of public utilities, and environmental impact.

“Appurtenant structures” means structures such as spillways, either in the dam or separate therefrom; the reservoir and its rim; low-level outlet works; and water conduits such as tunnels, pipelines, or penstocks, occurring through either the dam or its abutments.

“Auxiliary spillway” means any secondary spillway that is designed to be operated infrequently.

“Dam owner” means any person who owns, controls, operates, maintains, or manages a dam.

“Hazard potential” means a classification based on the possible incremental adverse consequences that result from the release of water or stored contents due to a failure or misoperation of the dam or appurtenances. The hazard potential classification of a dam does not reflect in any way on the current condition of the dam and its appurtenant structures (e.g., safety, structural integrity, or flood routing capacity).

“Height of dam” means the vertical distance from the top of the dam to the natural bed of the stream or water source measured at the downstream toe of the dam or to the lowest elevation of the outside limit of the dam if it is not across a water source.

“Incremental consequence” means the difference, under the same conditions (e.g., flood, earthquake, or other event), between the consequences that are likely to occur from the failure or misoperation of the dam and appurtenances as compared to the consequences that are likely to occur without such failure or misoperation.

“Permanent storage” means the volume of water expressed in acre-feet that is stored upstream from a dam or in an impoundment up the level of the principal outlet works of the structure.

“Probable” means more likely than not to occur; reasonably expected; realistic.

“Probable maximum flood” means the flood that may be expected from the most severe combination of critical meteorological and hydrologic conditions that are reasonably possible in the region, and is derived from probable maximum precipitation, the theoretical greatest depth of precipitation for a given duration that is physically possible over a particular drainage area at a certain time of year. The probable maximum precipitation within designated zones in Iowa has been determined by the National Weather Service. The probable maximum flood for any location within Iowa is determined by the department.

“Temporary storage” means the volume of water expressed in acre-feet that may be stored upstream from a dam or in an impoundment above the level of the principal outlet works.

567—73.3(455B) Regulated dams.

73.3(1) Thresholds. Dams meeting any of the following thresholds shall be regulated by the department:

a. A dam with a height of at least 25 feet and a storage of 15 acre-feet or more at the top of the dam elevation; or

b. A dam with a storage of 50 acre-feet or more at the top of the dam elevation and a height of at least 6 feet; or

c. A dam that is assigned a hazard potential of high hazard.

73.3(2) *Exceptions.* Road embankments or driveways with culverts are exempt unless such structure serves, either primarily or secondarily, a purpose commonly associated with dams, such as the temporary storage of water for flood control.

73.3(3) *New construction.* Before construction begins, department approval is required for construction of any dam meeting the thresholds of a regulated dam. The proposed dam must meet the criteria outlined in this chapter.

73.3(4) *Existing dams.*

a. Department approval is required for:

(1) Modification, repair, alteration, breach, abandonment, or removal of any existing dam or appurtenant structure beyond the scope of ordinary maintenance if the height of the dam or storage of the dam exceeds the applicable thresholds in this rule.

(2) Any change in operating procedures if the height of the dam or storage of the dam exceeds the applicable thresholds in this rule.

b. Spillway reconstruction, changes in normal water level, and modification of the dam embankment or spillway are examples of modifications that require approval. The dam must meet the criteria outlined in this chapter. Dams found to be unsafe according to 567—73.33(455B) shall be repaired or removed.

73.3(5) *Required upgrades.* Improvements may be required for existing dams in order to reduce the risk of a dam failure.

a. Existing dams assigned a high hazard potential or significant hazard potential that have been inspected or analyzed and found not to meet the criteria in this chapter will be required to meet the requirements outlined in this chapter for the appropriate hazard potential.

b. Existing dams assigned a low hazard potential that have been inspected or analyzed and found to have a significant hazard potential or high hazard potential shall be required to be upgraded to meet the requirements outlined in this chapter for the appropriate hazard potential.

567—73.4(455B) Assignment of hazard potential. All existing and proposed dams reviewed by the department shall be assigned a hazard potential. Anticipated future land and impoundment use shall be considered in the determination of hazard potential. The hazard potential shall be determined using the following criteria:

73.4(1) *Low hazard.* A dam shall be classified as “low hazard” if failure of the dam would result in no probable loss of human life, low economic losses, and low public damages.

73.4(2) *Significant hazard.* A dam shall be classified as “significant hazard” if failure of the dam would result in no probable loss of human life but may damage residential structures or industrial, commercial, or public buildings; may negatively impact important public utilities or moderately traveled roads or railroads; or may result in significant economic losses or significant public damages.

73.4(3) *High hazard.* A dam shall be classified as “high hazard” if located in an area where failure would result in probable loss of human life.

73.4(4) *Consideration of changes affecting hazard potential.* In locating the site of a dam and in obtaining easements and rights-of-way, the applicant shall consider the impacts to the hazard potential of a dam from anticipated changes in land use downstream or adjacent to the impoundment, the operation of the dam, and the potential liability of the dam owner.

73.4(5) *Changes in hazard potential.* Any future changes in downstream land use, development, impoundment use, or critical hydraulic structures shall require a reevaluation of the hazard potential of the dam. If the hazard potential of the dam changes, the dam shall be required to meet all applicable criteria for that hazard potential. This may require additional increases in spillway capacity for the dam. The owner and any other persons responsible for the construction

and operation of the dam shall assume all risks for future costs to upgrade a dam in the event there is a change in hazard potential.

567—73.5 to 73.9Reserved.

DIVISION II

APPROVAL PROCESS

567—73.10(455B) Review and approval process for dam construction, modification, abandonment, or removal.

73.10(1) *Application process.* Application materials are provided by the department. The application shall be submitted by or on behalf of the person or persons who will be the future dam owner or owners. The application shall be signed by the applicant or a duly authorized agent. Completed applications along with supporting information shall be submitted to the department through an online application system or mailed to Iowa Department of Natural Resources, Attn: Joint Application, 502 East 9th Street, Des Moines, Iowa 50319. For dam repairs, abandonment, or removal, the department may waive the requirements of the application process outlined in this rule if the requirements are unnecessary for the application approval or if the dam has been designated as unsafe and immediate temporary emergency stabilization repairs are required to prevent failure of the dam. Permanent repairs or modifications will require review and approval.

73.10(2) *Preliminary application packet.* The preliminary application packet includes the joint application form and requires submittal of preliminary design data prepared by or under supervision of a professional engineer licensed in the state of Iowa or by an engineer working for the United States government. The preliminary design data packet shall contain a report summarizing the preliminary design, hydrologic data and reservoir routing, a hazard potential analysis, preliminary design drawings, the soils and geotechnical engineering analysis, and a list of the engineering references used as the basis for design and construction.

73.10(3) *Project review.* The department shall review a preliminary application packet and provide feedback or concurrence on the initial design and assumptions. After concurrence with the preliminary application packet and upon reception of the final submittal as required by 73.10(4), the department will review the final submittal and issue a decision based on whether the project meets criteria for approval outlined in this chapter.

73.10(4) *Final submittal.* After the department's review of and concurrence with the preliminary submittal, the engineering plans and other engineering information shall be certified by a professional engineer licensed in the state of Iowa, unless prepared by an engineer working for the United States government, and submitted with the following information:

- a.* One complete set of certified construction plans;
- b.* One complete set of construction specifications;
- c.* An operating plan, if required;
- d.* Easements, if required;
- e.* For high hazard dams, an emergency action plan; and
- f.* An engineering design report documenting all aspects of the design of the dam and how the design of the dam meets the criteria outlined in this chapter. The engineering design report shall include the following: hazard potential analysis; hydrology and hydraulic calculations; embankment design and foundation analysis; and structural calculations, where applicable.

73.10(5) *Public notice.* Public notice shall be issued by the department to inform persons who may experience adverse consequences by the permitted project. Adverse consequences may occur through maintenance of the dam and appurtenant structures, spillway discharges, temporary ponding of floodwater behind the dam, or failure of the dam. It is the applicant's responsibility to submit sufficient information with the preliminary application packet and on request to enable the department to accurately identify the owners, occupants, and addresses of affected lands.

73.10(6) *Project approval or disapproval.*

a. Approval. Issuance of a dam construction permit shall constitute approval of a project. The permit may include one or more special conditions when reasonably necessary to implement relevant criteria.

b. Disapproval. A letter to the applicant denying the application shall constitute disapproval of a project.

c. Notice of decision. Copies of the decision shall be mailed or electronically transmitted to the applicant and any person who commented.

73.10(7) *Appeal of decision.* Any person aggrieved by a decision issued under this chapter may file a notice of appeal as governed by 567—Chapter 7.

73.10(8) *General conditions.* Department approvals of a project shall be subject to the following conditions:

a. Change in ownership. The dam owner and any successor in interest to the real estate on which the project or activity is located shall be responsible for notifying the department of change in ownership.

b. Maintenance. The dam owner has a responsibility to maintain the dam and appurtenant structures in a safe condition. Maintenance shall include keeping earthen portions of the dam well vegetated, keeping trees and brush off the dam, preventing and repairing erosion, keeping the spillway free of obstructions, repairing deteriorated structural elements, and performing required maintenance on mechanical appurtenances such as gates.

c. Responsibility. No legal or financial responsibility arising from the construction or maintenance of the approved works shall attach to the state of Iowa or the department due to the issuance of an approval or administrative waiver.

d. Lands. The applicant shall be responsible for obtaining such government licenses, permits, and approvals, and lands, easements, and rights-of-way which are required for the construction, operation, and maintenance of the authorized work.

e. Change in plans. No material change from the plans and specifications approved by the department shall be made unless authorized in writing by the department.

f. Revocation of permit. A department permit may be revoked if construction is not completed within the period of time specified in the department permit.

g. Performance bond. A performance bond may be required when necessary to secure the construction, operation, and maintenance of approved projects and activities in a manner that does not create a hazard to the public's health, welfare, and safety. The amount and conditions of the bond shall be specified as special conditions in the department permit.

h. Construction inspection. For high hazard and significant hazard dams, construction shall be inspected by or under the supervision of a professional licensed engineer in the state of Iowa. The engineer shall prepare and certify as-built plans after completion and a report documenting that the dam was constructed in general conformance with the approved plans (or approved changes) and outlining unusual circumstances encountered during construction. The water storage permit shall not be issued until the department accepts the as-built plans and report.

i. Postconstruction department inspections. A department approval that authorizes construction or modification, operation, and maintenance of a dam for which ongoing inspections are required by these rules shall include a condition stating that the department shall have access to the dam site for such inspections at a reasonable time after notification of the dam owner.

j. Owner inspections. For high hazard and significant hazard dams, the owner is responsible for annual inspections and submission of written inspection reports to the department as required in subrule 73.30(4).

73.11(1) A water storage permit shall be required for all regulated dams in order to legally impound water. No water shall be impounded by a dam or reservoir prior to issuance of a water storage permit.

73.11(2) Application for a dam construction permit shall constitute application for a water storage permit if the appropriate fee (as stated in 567—subrule 50.4(2)) is received with the application.

73.11(3) A water storage permit shall be issued upon a finding by the department that the dam and reservoir are safe to impound water within the conditions prescribed in the dam construction permit and the project meets the following conditions:

a. The proposed storage is for a specified beneficial use such as human or livestock water supply, flood control, water quality, recreation, aesthetic value, erosion control, or low-flow augmentation.

b. The impounding structure can be operated in a manner that will not adversely affect any applicable protected flow in the impounded stream. Protected flows are listed in 567—Chapter 52.

c. For high hazard and significant hazard dams, the water storage permit will not be issued until as-built plans and a construction report have been submitted documenting that the dam has been constructed in general conformance with the approved plans and conditions of the dam construction permit and until the department has conducted an inspection of the dam.

73.11(4) A water storage permit may be modified, canceled, or suspended pursuant to Iowa Code section 455B.271. Conditions of cancellation or suspension of water storage permits shall include draining the lake with any available low-level drain and may include dewatering with other methods or breaching of the dam.

567—73.12 to 73.14Reserved.

DIVISION III

CRITERIA FOR APPROVAL

567—73.15(455B) General criteria.

73.15(1) *Required findings.* The department shall approve the construction, repair, modification, abandonment, or removal of a dam only after finding that the project is designed in accordance with accepted engineering practice and methods, and in a manner consistent with the applicable department criteria in this rule.

73.15(2) *Waiver.* A request for a waiver to this chapter shall be submitted in writing pursuant to 561—Chapter 10. The contents of a petition for waiver shall include information pursuant to 561—10.9(17A,455A).

567—73.16(455B) Lands, easements, and rights-of-way. An application for approval of a dam project shall include information showing the nature and extent of lands, easements, and rights-of-way that the applicant has acquired or proposes to acquire to satisfy the following criteria:

73.16(1) Ownership or perpetual easements shall be obtained for the area to be occupied by the dam embankment, spillways, and appurtenant structures, and the permanent or maximum normal pool.

73.16(2) Ownership or easements shall be obtained for temporary flooding of areas that would be inundated by the flood pool up to the top of dam elevation and for spillway discharge areas.

73.16(3) Easements covering areas affected by temporary flooding or spillway discharges shall include provisions prohibiting the erection and usage of structures for human habitation or commercial purposes without prior approval by the department.

73.16(4) As a condition of granting approval of a dam rated less than high hazard, the applicant may be required to acquire control over lands downstream from the dam as necessary to prevent downstream development that would affect the hazard classification of the dam.

567—73.17(455B) Emergency action plans for high hazard dams.

73.17(1) *Emergency action plan required.* All high hazard dams shall be required to have an approved emergency action plan on file with the department. The plan shall include the following:

- a.* A statement of purpose;
- b.* A project description;
- c.* An emergency response process;
- d.* An emergency notification plan with flowchart;
- e.* Responsibilities of all parties;
- f.* A list of emergency preparedness and plan maintenance activities; and
- g.* Inundation maps or another acceptable description of the inundated area.

73.17(2) *Emergency action plan maintenance.* The owner of the dam shall keep the emergency action plan up to date. Contact information shall be verified in the plan at least once a year, and an exercise shall be performed at least every five years. The owner of the dam shall keep an up-to-date copy of the emergency action plan on file with the department and with the local county emergency manager.

567—73.18(455B) Encroachment on a confinement feeding operation structure. A dam shall not be constructed or modified so that the ordinary high water of the lake, pond, or reservoir created by the dam is closer than the following distances from a confinement feeding operation structure unless a secondary containment barrier according to 567—subrule 65.15(17) is in place. Measurement shall be from the closest point of the confinement feeding operation structure to the water edge of the lake, pond, or reservoir for a pool level at the elevation of the crest of the auxiliary spillway or at the top of dam elevation if the dam does not have an auxiliary spillway.

73.18(1) The minimum separation between a water source other than a major water source and a confinement feeding operation structure is 500 feet.

73.18(2) The minimum separation between a major water source and a confinement feeding operation structure is 1,000 feet or such distance that the structure is not located on land that would be inundated by Q100, whichever is greater.

567—73.19(455B) Hydrologic and hydraulic criteria.

73.19(1) *Hydrology and hydraulic calculations.* Hydrology and hydraulic calculations shall be submitted in the design report documenting the methods and analysis followed in modeling software selection, inflow design hydrograph determination, and reservoir routing. The hydrology and hydraulics section of the design report shall include design references, inflow hydrograph, reservoir stage storage, and stage discharge curves and clearly identify peak inflows, peak discharges, and reservoir elevations for the design floods.

73.19(2) *Design floods.* The specified freeboard design floods in the table below shall be passed without overtopping of the dam or the dam shall be designed to withstand such overflow. The specified spillway design flood in the table below shall be passed by the principal spillway without need for operation of an auxiliary spillway unless the auxiliary spillway is designed such that erosion is not expected during operation.

Hazard Potential	Freeboard Design Flood	Spillway Design Flood
Low Hazard	Q100	Q10
Significant Hazard	Q1000	Q50
High Hazard	Probable Maximum Flood	Q100

73.19(3) *Precipitation amounts.* The National Oceanic and Atmospheric Administration's NOAA Atlas 14, Precipitation-Frequency Atlas of the United States, Volume 8, Version 2.0, dated 2013, shall be used for the Q10–Q1000 frequency storm events. NOAA Hydrometeorological Report No. 51, Probable Maximum Precipitation Estimates, United States, East of the 105th Meridian, dated 1978, shall be used for the probable maximum precipitation.

73.19(4) *Spatial and temporal rainfall distributions and storm durations.* The design report shall document the sources and methodologies for inflow hydrograph development. Distributions and durations that produce the highest impoundment water level shall be used for design.

73.19(5) *Spillway discharge capacity.* The spillway discharge capacity shall be sufficient to evacuate at least 80 percent of the volume of water temporarily stored during the principal spillway design flood within ten days. If this cannot be accomplished, the auxiliary spillway and freeboard design flood routings shall be made beginning with the impoundment level at the ten-day drawdown elevation.

73.19(6) *Incremental consequence analysis.* An inflow design flood based on an incremental consequence analysis may be developed and submitted to the department for review as an alternative to the design floods stated in 73.19(2). The design flood selected using incremental consequence analysis is the flood above which there is a negligible increase in downstream water surface elevation, velocity, and consequences due to failure of the dam when compared to the same flood without failure. If the department concurs with the analysis, the freeboard design storm may be reduced. The minimum design flood for a high hazard dam shall be Q500. The minimum design flood for low hazard and significant hazard dams shall be Q100.

567—73.20(455B) Spillway design requirements.

73.20(1) Spillways shall be designed to operate safely for the life of the structure and at the discharges and pressures that would be experienced under all flow conditions, including the freeboard design flood.

73.20(2) Spillways shall be provided with a means of piping and seepage control (e.g., drainage diaphragms), antivortex devices, trash racks, or other inlet debris control measures, and stable outlets capable of handling design exit flow velocities.

73.20(3) When a conduit is proposed to be used in a high hazard or significant hazard dam, detailed hydraulic, hydrologic, and structural computations supporting selection of the size and type of pipe to be used shall be provided by the applicant.

73.20(4) Detailed drawings and specifications relating to the installation of the pipe shall include, but not be limited to, construction measures that adequately address critical load bedding, backfill, compaction, joints, and seepage precautions related to installation of the pipe.

73.20(5) Structural computations and drawings shall be submitted for all proposed concrete structures. Drawing details, as necessary, shall be provided showing reinforcement, cutoffs, underdrains/filters, waterstops, construction joints, control joints, and any other details necessary to construct.

73.20(6) If an auxiliary spillway is proposed, it shall be analyzed, designed, and constructed adequately to establish and maintain stability during the passage of design flows without blockage or breaching. Open-channel auxiliary spillways shall have a minimum depth of 2 feet and minimum width of 10 feet and be designed with appropriate curvature and slopes to prevent excessive erosion.

73.20(7) A gated low-level outlet shall be provided for high hazard and significant hazard dams. The gated low-level outlet shall be capable of draining at least 50 percent of the permanent storage behind the dam within ten days. The pipe conduit shall be designed so that negative pressures will not occur at any point.

567—73.21(455B) Embankment design requirements.

73.21(1) The applicant shall document the engineering standards and design references used for dam embankment design. Drawing details, as necessary, shall be provided showing embankment slopes, required additional fill for anticipated settlement, top width, foundation preparation, core trench or cutoff wall, fill materials and methodology, internal seepage controls, and embankment erosion protection.

73.21(2) A geotechnical report shall be submitted for high hazard and significant hazard dams documenting the evaluation of slope stability requirements, anticipated vertical settlement and horizontal elongation, seepage and underseepage potential, whether cathodic protection is needed for metal pipes, and proper construction practices for the soil types and conditions encountered. A stability evaluation shall include end-of-construction, steady-state seepage and sudden-drawdown conditions.

567—73.22(455B) Operating plan. A written operating plan shall be prepared for any dam with gates or other movable structures that must operate or be operated during times of flood or to provide a minimum downstream release rate. Development of the operating plan is considered part of the design process. An operating plan shall include, at a minimum, the following items:

73.22(1) *Responsibility.* The operating plan shall outline and identify the necessary personnel who will be present to operate the equipment or, in the case of automatic equipment, to monitor it and ensure it is functioning properly.

73.22(2) *Operating circumstances.* The circumstances under which operation must occur shall be clearly defined, and a means shall be provided to ensure that operating personnel are present when necessary.

73.22(3) *Method of operation.* The means and methods by which operation is to be conducted shall be clearly defined and shall include, at a minimum, the following items: rates and sequences for opening or closure of gates, target water levels, and target flow rates.

73.22(4) *Flood capacity.* The operating plan shall allow for safe passage of all floods up to and including the freeboard design flood. Flood discharges through the dam greater than the design peak flood inflows into the impoundment shall not be permitted.

73.22(5) *Low flow.* The operating plan shall address low flow situations and shall specify a minimum release rate if required by the department and how the minimum release will be provided and maintained.

73.22(6) *Equipment.* Consideration shall be given to and allowance made for the possible failure of or malfunctioning of the equipment.

73.22(7) *Discharge measurement.* A means shall be provided to determine the discharge through the control structures, especially where operation is to maintain a minimum downstream flow. Stage discharge tables, streamflow gages or other means of obtaining discharge readings shall be provided. The settings of control structures shall be easily read.

567—73.23(455B) Removal and abandonment of dams. Removal is the draining of the impoundment and removal of all or a significant portion of the embankment. A dam may be abandoned by rendering a dam nonimpounding by dewatering and filling the reservoir with solid materials and by diverting the natural drainage around the site.

73.23(1) *Removal requirements.* A dam removal project shall meet all of the following requirements:

a. The dam removal plan shall clearly show removal limits and will demonstrate how the proposed construction will render the dam height and storage below thresholds in rule 567—73.3(455B);

b. An impoundment dewatering plan shall be submitted that documents how the water will be released in a controlled manner and not cause upstream erosion or pose a flooding risk downstream;

c. A dam breach plan shall be submitted that demonstrates how the breach process will not pose an increased risk compared to the existing structure; and

d. A sediment disposition plan shall be submitted that provides for stabilization, release, or removal of stored sediment and shall demonstrate no significant adverse consequences on fish and wildlife habitat downstream from the proposed construction.

73.23(2) *Abandonment requirements.* An abandonment plan shall be submitted documenting the final site stabilization, evidence that the structure will no longer impound water or waterborne

materials that would be released in the event of a dam failure, and evidence that the structure will not store water above the thresholds outlined in this chapter.

567—73.24 to 73.29Reserved.

DIVISION IV

DAM OWNERSHIP, INSPECTIONS, AND ENFORCEMENT

567—73.30(455B) Dam owner responsibilities.

73.30(1) *Operation and maintenance required.* The intent to permanently cease or cause to cease all acts of construction, operation, and maintenance of a dam is prohibited. If any person wishes to be relieved of the responsibilities inherent in the ownership or control of a dam structure, those responsibilities shall be undertaken by another person through sale, transfer, or other means or the dam shall be removed.

73.30(2) *Dam maintenance.* The dam owner shall be required to maintain the dam and appurtenant structures in a safe condition. Maintenance shall include, but not be limited to, keeping earthen portions of the dam well vegetated, keeping trees and brush off the dam, preventing and repairing erosion, keeping spillways and drains free of obstructions, repairing structural deterioration, and performing required maintenance on mechanical appurtenances such as gates. The dam owner shall perform regular inspections to identify potential maintenance problems.

73.30(3) *Dam repairs.* The dam owner shall arrange for performance of engineering investigations when needed to evaluate potential safety problems. The dam owner shall perform any required repairs. When the department determines the need for follow-up inspections, the dam owner may be required to have a qualified person make inspections and prepare written inspection reports at specified intervals.

73.30(4) *Maintenance inspections by dam owner.* The dam owner of a high hazard or significant hazard structure shall be responsible for annual inspections and submission of written inspection reports. Annual inspection reports are due to the department on or before December

1. Inspection reports shall include:

- a.* Maintenance work done since the previous annual report;
- b.* Observed deficiencies on the dam or appurtenant structures;
- c.* Remedial measures necessary and the method and schedule the dam owner proposes to correct the deficiencies found; and
- d.* Changes in land use downstream of the dam.

567—73.31(455B) Dam safety inspection program.

73.31(1) *Scope of dam safety inspection program.* Dams subject to inspection under these rules are regulated dams as defined in this chapter. The scope of department staff field inspections normally is limited to visually observable features of dams and their appurtenant structures.

73.31(2) *Purpose of dam safety inspection program.* The general purposes of inspections are as follows: to evaluate the construction, operation, and maintenance of dams; to identify observable deficiencies in dams or appurtenant structures; and to identify other floodplain structures or uses that may affect the hazard potential of a dam or use of an associated impoundment. Inspection reports shall be used by the department in determining whether a proposed dam project complies with applicable criteria and to determine whether any of the following conditions exist:

- a.* A permit violation;
- b.* A violation of law which requires that a permit be obtained; or
- c.* A condition that constitutes a public nuisance by causing unacceptable risk of injury to the public health, safety or welfare.

73.31(3) *Inspections of significant hazard and high hazard dam structures.*

a. Inspection prior to construction. A field inspection may be made by the department to determine the hazard potential of the dam and verify the location and plan information upon receipt of an application for approval of construction or modification of a dam.

b. Inspection during construction. Construction or modification of a dam structure shall be inspected by an engineer licensed in the state of Iowa or by a trained inspector under the supervision of the engineer. After completion of construction or modification of a dam structure, the engineer shall prepare and submit a construction report, as-built plans, and a statement that in the engineer's professional opinion the work was conducted in general conformance with the approved plans and specifications.

c. Acceptance inspections. When construction of a dam or modifications thereto is completed, and as-built plans and a construction report have been submitted, the department shall make a field inspection to determine whether visually observable features of the dam and appurtenant structures are consistent with the approved plans and the conditions of the dam construction permit. The department shall thereafter issue the water storage permit or a letter stating that additional work is required for acceptance of construction. Closure of the low-level outlet gate shall not begin until the department has issued the water storage permit.

d. Periodic inspections after acceptance. High hazard structures shall be inspected at least once every two years by the department. Significant hazard structures shall be inspected at least once every five years by the department. Structures poorly maintained or those that require repairs identified by the department shall be inspected more frequently until required maintenance and repairs are completed. The department shall notify the dam owner or agent before each inspection. Each inspection shall assess the condition of the dam and appurtenant structures and the adequacy of operation and maintenance practices. The inspection may include reevaluation of the ability of the dam and appurtenant structures to adequately withstand the hydraulic loadings and pass the appropriate design floods.

73.31(4) *Inspections of low hazard dams.*

a. Preliminary site evaluation. The department may evaluate the site of a proposed dam from maps and aerial photographs in lieu of a field inspection.

b. Inspection during construction. The applicant shall be responsible for providing supervision of construction by a person experienced in the type of construction involved.

c. Inspection of dams with operating plans. Low hazard dams with operating plans shall be inspected by the department at least once every five years. Any problems noted shall be reported to the dam owner in writing.

d. General inspections of low hazard dams. Low hazard dams may be periodically inspected by the department to determine their condition. Any serious problems noted shall be reported to the dam owner in writing.

73.31(5) *Special inspections and investigations.* Special inspections and investigations shall be made by department personnel in the following instances:

- a.* Upon notice or evidence of unauthorized construction;
- b.* Upon notice or evidence that a dam has failed or is in a condition where failure appears likely, and public damages would result from such failure; or
- c.* Upon notice or evidence that the hazard classification of a dam may no longer be valid due to changes in downstream conditions.

73.31(6) *Inspections by others.* At the discretion of the department, an inspection report submitted by a qualified individual may be accepted in lieu of an inspection and report by the department.

73.31(7) *Inspection reports.* The department shall prepare a report of each inspection and provide a copy to the dam owner. The report shall state the deficiencies observed during the inspection. If appropriate, the report shall detail the actions required to address the noted deficiencies.

567—73.32(455B) Raising or lowering of impoundment levels.

73.32(1) *When approval is required.* A separate approval is required to temporarily or permanently raise or lower the normal level of water impounded by a regulated dam unless the raising and lowering has been authorized as part of an approved operating plan. Such approval shall be in the form of a letter authorizing the lowering or raising and may be conditioned upon various requirements.

73.32(2) *Information required for approval.* The applicant shall submit the following information:

a. The date when the raising or lowering will be initiated, the level to which the impoundment will be raised or lowered and, if the raising or lowering is temporary, the anticipated date when the normal water level will be restored; and

b. Evidence that the discharge rate during lowering will not exceed the capacity of the stream channel below the dam.

73.32(3) *Criteria for approval.* The department's review of the raising or lowering of the impoundment includes determining the effects on flooding or flood control for any proposed works and adjacent lands and property; on the wise use and protection of water resources; on the quality of water; on fish, wildlife, and recreational facilities or uses; and on all other public rights and requirements.

73.32(4) *Conditions.* Conditions of approving the temporary or permanent raising or lowering of water levels may include:

a. Giving prior notice to the director of the local county conservation board or local enforcement officer for the department;

b. Publicizing the lowering locally in order to notify downstream users, persons who have boats or docks on the impoundment and other persons whose use of the impoundment might be affected; and

- c. Maintaining a minimum release rate as determined by the department during refilling.

567—73.33(455B) Unsafe dams.

73.33(1) *Procedures for designation of a dam as unsafe.*

a. *Department report.* If after inspection or other investigation the department determines that a dam is unsafe, a report shall be prepared. Copies of the report shall be provided to the dam owner and any other person whom the report identifies as responsible for the unsafe condition of the dam. The report shall identify the problems that cause the dam to be unsafe and recommend action to remedy the unsafe condition.

b. *Opportunity for comment.* The department shall provide the dam owner or other responsible person with a reasonable opportunity to comment on the department report considering the degree and imminence of hazard identified in the department report.

73.33(2) *Criteria for designating a dam as unsafe.* Designation of a dam as unsafe shall be based on one or more of the following findings:

a. The dam has serious deficiencies in its design, construction, use, maintenance, or physical condition that would contribute to failure or otherwise increase flood damages;

b. A high hazard or significant hazard dam has inadequate spillway capacity for the size and hazard potential of the dam.

73.33(3) *Department action concerning an unsafe dam.* After completion of the procedures for designating an unsafe dam, the department shall issue an initial decision that may order remedial work depending on the degree and imminence of hazard caused by the unsafe condition. Remedial work may include draining of the impoundment or removal of any structure determined to constitute a public nuisance. Procedures for appealing an initial decision are the procedures in 567—Chapter 7. If the initial decision requires emergency remedial work to abate an imminent danger of failure that would cause significant public damages, the director of the department may

request the assistance of the attorney general to seek an appropriate judicial order compelling performance of emergency remedial work.

These rules are intended to implement Iowa Code chapter 455B, subchapter III, part 4.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item (**indicates proposed consent item*)

***31. Chapter 81, “Drinking Water State Revolving Fund” – Final Rule**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 81. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 81 establishes the requirements for public water supplies, distribution systems, and wastewater supplies to have a properly certified operator, consistent with Iowa Code section 455B.211, and as required by the federal Safe Drinking Water Act. The chapter was edited consistent with Executive Order 10; consequently, changes to the chapter include substituting rules for citations to Iowa Code or the Code of Federal Regulations where the rule section was entirely captured by one of these laws; removal of definitions redundant to Iowa Code or other IAC rules; removal of unnecessary, duplicative, and guidance text; cleanup of inconsistent uses of acronyms, and removal outdated rules and rule references.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 11, 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8600C. Two public hearings were held on February 4, 2025 and February 5, 2025.

Changes from NOIA: There were seven attendees at the public hearings. Three comments were received during the public comment period. Minor changes have been made to the NOIA. The location of other applicable definitions was clarified and a date certain was added in a reference to the United States Code.

Effective Date of Final Rule: June 18, 2025

Laurie Sharp, Environmental Specialist Senior
Water Quality Bureau
Environmental Services Division Meeting
Date: April 15, 2025

Attached: Chapter 81 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION [567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 81, “Operator Certification: Public Water Supply Systems and Wastewater Treatment Systems,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3) and 455B.222.

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.211 through 455B.213, 455B.216 through 455B.219, and 455B.221 through 455B.224; 42 U.S.C. Section 300g-8; and 40 CFR Section 141.130(c).

Purpose and Summary

New Chapter 81 establishes the requirements for public water supplies, distribution systems, and wastewater supplies to have a properly certified operator in charge consistent with Iowa Code section 455B.211. It also fulfills the requirement of the Safe Drinking Water Act that states must adopt to implement a program that meets the U.S. Environmental Protection Agency’s (EPA’s) standards for the classification of public water supplies and distribution systems and to train, certify, and recertify the operators in charge of those systems. Ultimately, Chapter 81 ensures consistent safe drinking water, public health protection, and the preservation of Iowa’s water resources by ensuring competent management, operation, and maintenance of both drinking water and wastewater systems. This chapter has been reviewed and edited consistent with Executive Order 10.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8600C**.

Two public hearings were held. The first public hearing was held on February 4, 2025 from 8:30 AM to 9:30 AM virtually via Zoom. The second public hearing was held on February 5, 2025 from 2:00 PM to 3:00 PM virtually via Zoom.

Two people attended the first public hearing, and neither provided public comment. There were five members of the public in attendance for the second public hearing. Three public comments were received during the public comment period

Minor changes have been made to the NOIA. The location of other definitions was clarified and a date certain was added in a reference to the United States Code.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at

a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 81 and adopt the following **new** chapter in lieu thereof:

CHAPTER 81

OPERATOR CERTIFICATION: PUBLIC WATER SUPPLY SYSTEMS

AND WASTEWATER TREATMENT SYSTEMS

567—81.1(455B) Definitions.

81.1(1) In addition to the definitions, references, and abbreviations in 567—Chapter 40, the following definitions shall apply to this chapter:

“Activated sludge system” means a biological wastewater treatment process in which a mixture of wastewater and sludge floc, produced in a raw or settled wastewater by the growth of microorganisms, is agitated and aerated in the presence of a sufficient concentration of dissolved oxygen, followed by sedimentation. Examples include but are not limited to conventional activated sludge systems, extended aeration activated sludge systems, oxidation ditches, and sequencing batch reactors.

“Advanced aerated lagoon system” means an aerated lagoon system that has been augmented by adding other treatment processes. Examples include but are not limited to covered lagoon systems with enhanced aeration and mixing, the addition of fixed film processes to the lagoon process, or the utilization of algal-based treatment processes.

“Aerated lagoon system” means a lagoon system that utilizes aeration to enhance oxygen transfer and mixing in the cell.

“Aeration” means the process of initiating contact between air and water. Examples include but are not limited to spraying the water in the air, bubbling air through the water, or forcing the air into the water by pressure.

“Average daily pumpage” means the total quantity of water pumped during the most recent one-year period of record divided by 365 days.

“Chlorination” means the addition of a chlorine compound or chlorine gas to water to inactivate pathogenic organisms.

“Classification” means the type of plant or distribution system: wastewater treatment plants, water treatment plants, or water distribution systems.

“Continuing education unit” or *“CEU”* means ten contact hours of participation in an organized education experience approved by an accredited college, university, technical institute, or the department, and must be directly related to the subject matter of the particular certificate to which the credit is being applied.

“Directly related post-high school education” means post-high school education in chemistry, microbiology, biology, math, engineering, water, wastewater, or other curriculum pertaining to plant or distribution system operation.

“Direct responsible charge” or *“DRC”* means, where shift operation is not required, accountability for and performance of active, daily on-site operation of a plant or distribution system, or of a major segment of a plant or distribution system. Where shift operation is required, DRC means accountability for and performance of active, daily on-site operation of an operating shift, or a major segment of a plant or distribution system. A city manager, superintendent of public works, city clerk, council member, business manager, or other administrative official shall not be deemed to have DRC of a plant or distribution system unless that person’s duties include the active, daily on-site operation of a plant or distribution

system. On-site operation may not necessarily mean full-time attendance at a plant or distribution system.

“Direct surface water filtration” means a water treatment system that applies surface water and influenced groundwater (as defined in rule 567—40.2(455B)) directly to the filters after chemical treatment consisting of both coagulation and flocculation or chemical treatment consisting of coagulation. This type of system eliminates the sedimentation unit process.

“Electrodialysis” means the demineralization of water by the removal of ions through special membranes under the influence of a direct-current electric field.

“Fixed film biological treatment” means a treatment process in which wastewater is passed over a media onto which are attached biological organisms capable of oxidizing the organic matter, normally followed by sedimentation. Examples include but are not limited to trickling filters, rotating biological contactors, packed towers and activated filters.

“Fluoridation” means the addition of fluoride to produce the optimum fluoride concentration in water.

“Grade” means one of seven operator certification levels, designated as A, W, I, IL, II, III, or IV.

“Ion exchange” means the process of using ion exchange materials such as resin or zeolites to remove undesirable ions from water and substituting acceptable ions (e.g., ion exchange for nitrate removal or ion exchange for softening).

“Military service” means honorably serving on federal active duty, state active duty, or national guard duty as defined in Iowa Code section 29A.1 or in the military services of other states or the organized reserves of the United States as provided in 10 U.S.C. Section 101(c) in effect as of April 1, 2025 and 10 U.S.C. Section 10101 in effect as of April 1, 2025, respectively.

“Military service applicant” means an individual requesting credit toward certification for military education, training, or service obtained or completed in military service.

“Operating shift” means a specified period of time when an operator is present to conduct testing or evaluation to control operations of a plant or distribution system, to make process control changes, and to be responsible for the repair or maintenance of a plant or distribution system. An operating shift may include on-call shifts.

“Operator-in-charge” or *“OIC”* means a person or persons on site in direct responsible charge of a plant or distribution system. A city manager, superintendent of public works, city clerk, council member, business manager, or other administrative official shall not be deemed to be the OIC of a plant or distribution system unless that person’s duties include the active, daily on-site operation of the plant or distribution system. On-site operation may not necessarily mean full-time attendance at the plant or distribution system.

“Plant” means those facilities identified as either a water treatment plant or a wastewater treatment plant.

“Post-high school education” means credit received for completion of courses given or co-sponsored by an accredited college, university, or technical institute. Courses offered by regulatory agencies may also be recognized as post-high school education. One year of post-high school education is 30 semester hours, 45 quarter hours, or 45 CEUs of credit.

“Primary treatment” means a treatment process designed to remove organic and inorganic settleable solids from wastewater by the physical process of sedimentation.

“Public water supply system certificate” or *“PWS certificate”* means a certificate issued by the department certifying that an operator has successfully completed the certification requirements of this chapter for a water treatment plant or water distribution system. A PWS certificate specifies the grades and classifications for which the certificate is valid.

“Reverse osmosis” means the process in which external pressure is applied to mineralized water against a semipermeable membrane to effectively reduce total dissolved solids and radionuclides content as the water is forced through the membrane.

“Rural water district” means a water supply incorporated and organized as such pursuant to Iowa Code chapter 357, 357A or 358.

“Shift operator” means the operator on site who has responsibility for making process control changes and adjustments to the operation, repair, and maintenance of a plant or distribution system during any operating shift. Duties include testing or evaluation to control operations of the plant or distribution system.

“Stabilization” means the addition of chemical compounds to water to maintain an ionic equilibrium whereby the water is not in a depository or corrosive state.

“Veteran” means an individual who meets the definition of “veteran” in Iowa Code section 35.1(2).

“Waste stabilization lagoon” means an excavation designed and constructed to receive raw or pretreated wastewater in which stabilization is accomplished by several natural self-purification processes. This definition includes both anaerobic and aerobic lagoons.

“Water distribution system” or *“distribution system”* is defined in Iowa Code section 455B.211. For the purposes of this chapter, a water distribution system includes storage facilities and pumping stations and does not include individual service lines to the premises of the consumer that are not under the control of the system.

81.1(2) The following terms applicable to this chapter are defined in the referenced locations:

- a. Iowa Code section 455B.101: “commission,” “department,” and “director.”
- b. Iowa Code section 455B.211: “certificate,” “operator,” “wastewater treatment plant,” “water supply system,” and “water treatment plant.”

c. Rule 567—40.2(455B): “coagulation,” “community water system” or “CWS,” “disinfection,” “nontransient noncommunity water system” or “NTNC,” and “transient noncommunity water system” or “TNC.”

d. 567—subrule 60.2(1): “PE” or “population equivalent.”

567—81.2(455B) General.

81.2(1) *Plant classifications.*

a. *Plants with multiple treatment processes.* A water treatment plant or wastewater treatment plant (hereafter noted as “plant”) having a combination of treatment processes that are in different classifications shall be assigned the highest numerical plant classification of that combination.

b. *Increase in classification for complex systems.* The director may increase a plant or water distribution system classification above that indicated in 567—81.3(455B) through 567—81.6(455B) for those systems that, in the director’s judgment, include unusually complex treatment processes, complex distribution systems, or present unusual operation or maintenance conditions.

81.2(2) *Operator certification.*

a. *Operator-in-charge (OIC).* An OIC shall hold a certificate of the same classification of any plant or water distribution system under the OIC’s control and of equal or higher grade than the grade designated for that plant or distribution system.

b. *Shift operator.* Any person who is responsible during an operating shift of a plant or distribution system or for major segment of a plant or distribution system and is under the supervision of the OIC identified in paragraph “a” of this subrule shall be certified in a grade no less than a Grade II for Grade III and IV plants and distribution systems and Grade I for Grade I and II plants and distribution systems.

81.2(3) *Public water supply system (PWS) certificates.* A PWS certificate shall be issued as follows:

a. An operator successfully completing the water treatment certification shall be issued a PWS certificate valid for water treatment.

b. An operator successfully completing the water distribution certification shall be issued a PWS certificate valid for water distribution.

c. An operator successfully completing the requirements for both water treatment and water distribution certification shall be issued a dual PWS certificate valid for both classifications. For purposes of renewal of a dual certificate, all renewal fees and CEU requirements shall be applied as one certification. The number of CEUs required for renewal shall be determined by the highest certification grade on the dual PWS certificate.

81.2(4) *Owner notification and reporting.*

a. A plant or distribution system owner shall notify the department of a change in the OIC(s) within 30 days after the change.

b. When requested by the department, a plant or distribution system owner shall report the method of treatment provided, the average daily pumpage, and the name(s) of the OIC(s).

81.2(5) *Operator notification.* Certified operators shall notify the department of a change in address or employment within 30 days after the change.

81.2(6) *Compliance plan.* When the director allows the owner of a plant or distribution system required to have a certified operator time to obtain an operator, the owner shall submit a compliance plan to the department indicating what action will be taken to obtain a certified operator. The plan shall be on a form provided by the department and shall be submitted within 30 days of the owner's receipt of a notice of violation for not having a properly certified operator.

567—81.3(455B) Wastewater treatment plant classifications and operator certification grades.

81.3(1) *Wastewater classifications.* The wastewater treatment plant classifications and grades are listed in the following table:

Wastewater Treatment Plant Classifications and Grades					
Treatment Type	Certification Grade				
	Based on Design Pounds of BOD ₅ /day				
	less than 334	334-835	836-2,505	2,506-8,350	more than 8,350
	Based on Design Population Equivalent				
	less than 2,000	2,000-5,000	5,001-15,000	15,001-50,000	more than 50,000
1. Onsite Treatment System	W	Not Applicable	Not Applicable	Not Applicable	Not Applicable
2. Waste Stabilization Lagoon System	IL	IL	IL	IL	IL
3. Aerated Lagoon System	IL	IL	I	I	I
4. Advanced Aerated Lagoon System	II	II	II	II	II
5. Fixed Film Biological Treatment System	II	II	III	III	IV
6. Activated Sludge System	II	III	III	IV	IV

81.3(2) *Unknown design BOD₅ loading.* When the design BOD₅ loading is unknown, the plant BOD₅ loading shall be determined by using the average pounds of BOD₅ of the 24-hour composite influent samples taken in the last 12 months. If 24-hour composite influent samples are not available, then grab samples shall be used.

81.3(3) *Grade IL wastewater operator.* A Grade I, II, III, or IV wastewater treatment certificate will satisfy the certification requirements for a Grade IL plant.

81.3(4) *Grade W onsite classification.* Any wastewater treatment plant that discharges to a water of the state and that utilizes onsite wastewater treatment technologies, such as those specified in 567—Chapter 69, shall be classified as an onsite treatment system (Grade W).

567—81.4(455B) Water treatment plant classifications and operator certification grades.

81.4(1) *Water treatment classifications.* The water treatment plant classifications and grades are listed in the following table:

Water Treatment Plant Classifications and Grades	
Treatment Type	Certification Grade*
	Average Daily Pumpage in MGD

	0-0.1	>0.1-0.5	>0.5-1.5	>1.5
1. Iron or manganese removal; aeration; chlorination; fluoridation; stabilization; any other chemical addition; or any combination of these processes	I	II	II	III
2. Ion exchange	II	II	III	III
3. Direct surface water filtration	II	II	III	III
4. Utilization of lime, soda ash or other chemical addition for pH adjustment in the precipitation and coagulation of iron or manganese	II	II	III	III
5. Complete surface water clarification or lime softening of surface water or groundwater	III	III	III	IV
6. Reverse osmosis and electrodialysis	II	II	III	IV
7. Activated carbon for THM or synthetic organics removal	III	III	III	IV

*For Grade A PWS classification, see 81.5(3).

81.4(2) Average daily pumpage. When the average daily pumpage is unknown, the plant grade will be determined from the population in the most recent census and an evaluation of commercial, industrial, and other users.

567—81.5(455B) Water distribution system classifications and operator certification grades.

81.5(1) Water distribution classifications. The water distribution system classifications and grades are listed in the following table:

Water Distribution System Classifications and Grades*

Distribution System Type	Certification Grade**			
	Average Daily Pumpage in MGD			
	0-0.1	>0.1-1.5	>1.5-5	>5
All municipal water systems	I	II	III	IV
CWS not classified as a Grade A water system	I	II	III	IV
NTNC not classified as a Grade A water system	I	II	III	IV
TNC not classified as a Grade A water system	I	II	III	IV
Rural water districts	Miles of Pipe			
	0-100	>100-1,000	>1,000-2,500	>2,500
	II	II	III	IV

*Note: A PWS with a well, storage, and a distribution system shall be classified as a water distribution system if no treatment is provided.

**For Grade A water distribution system classification, see 81.5(3).

81.5(2) Average daily pumpage. When the average daily pumpage is unknown, the system grade will be determined using the most recent census population and an evaluation of commercial, industrial, or other users.

81.5(3) Grade A water distribution system classification.

a. Grade A classification. A PWS that provides either no treatment other than hypochlorination or treatment that does not require any chemical addition, process

adjustment, backwashing, or media regeneration by an operator shall be classified as a Grade A water distribution system, based on the following service populations:

(1) Community water system. A CWS, other than a municipal or rural water system, serving a population of 250 persons or less.

(2) Nontransient noncommunity water system. An NTNC serving a population of 500 persons or less.

(3) Transient noncommunity water system. A TNC serving a population of 500 persons or less.

b. Grade A certification. Any grade of water treatment or distribution certification will satisfy the certification requirements for a Grade A water distribution system with or without hypochlorination.

567—81.6(455B) Certified operator education and experience qualifications.

81.6(1) *Education and experience qualifications—general.*

a. All certified operator applicants shall meet the education and operating experience qualifications for the certificate grade shown in the table below prior to being allowed to take the certified operator examination.

b. Operating experience shall be in the same classification for which the applicant is applying unless partial credit is given in accordance with 81.6(2) and 81.6(3).

c. Directly related post-high school education shall be in the same subject matter as the classification for which the applicant is applying. The director will determine which courses qualify as “directly related” in cases that are not clearly defined.

d. A military applicant may apply for education or experience credit pursuant to 81.6(4).

e. Education and experience qualifications table.

Certified Operator Education and Experience Qualifications

Grade	Education	Substitution for Education	Operating Experience	Substitution for Operating Experience
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A	High school diploma or GED	None	Completion of a department-approved training course	None
W	High school diploma or GED	None	Completion of a department-approved training course	None
I	High school diploma or GED	None	1 year	See 81.6(3) "b"
IL	High school diploma or GED	None	1 year	See 81.6(3) "b"
II	High school diploma or GED	None	3 years	See 81.6(3) "b"
III	High school diploma or GED and 2 years of post-high school education (1 year must be directly related)	See 81.6(3) "a"	4 years of experience in a Grade I or higher	See 81.6(3) "b"
IV	High school diploma or GED and 4 years of post-high school education (2 years must be directly related)	See 81.6(3) "a"	4 years of experience, including 2 years of DRC in a Grade III or higher	See 81.6(3) "b" and "c"

81.6(2) *Related work experience substitutions for operating experience.* The following substitutions of related work experience for operating experience requirements may be accepted by the director.

a. Personnel. The following personnel may be allowed 50 percent credit for work experience toward meeting the operating experience requirements as noted:

(1) Laboratory personnel employed in water or wastewater treatment plants; Grades I and II certification only. Laboratory experience must be in the same classification for which the applicant is applying.

(2) Personnel with experience in on-site operation review and evaluation of plants and distribution systems; Grades I and II certification only. On-site experience must be in the same classification for which the applicant is applying.

(3) Maintenance personnel employed in water or wastewater treatment plants; Grades I and II certification only. Maintenance experience may be applied to either the water or wastewater experience requirements.

b. Certified operators. The following types of certified operators may be allowed 50 percent credit for work experience toward meeting the operating experience requirements as noted:

(1) Certified water treatment operators; Grades I and II wastewater treatment certification only, or Grades I and II water distribution certification only.

(2) Certified wastewater treatment operators; Grades I and II water treatment certification only.

(3) Certified water distribution operators; Grades I and II water treatment certification only.

c. Limitation. The portion of related work experience that is substituted for operating experience cannot also be used to substitute for education.

81.6(3) *Operating experience and education substitutions.* The following experience or education substitutions may be accepted by the director.

a. Substitution of operating experience for education.

(1) One year of operating experience may be substituted for one year of post-high school education, up to one-half of the post-high school education requirement, as follows:

1. Experience in a Grade II or higher position may substitute as education for a Grade III certification, or

2. Experience in a Grade III or higher position may substitute as education for Grade IV certification.

(2) Two years of DRC experience in a Grade III or higher position may be substituted for one year of directly related post-high school education for Grade IV certification up to three-fourths of the post-high school education requirement.

(3) That portion of operating experience that is applied toward substitution for education cannot also be used for experience.

b. Substitutions of education for operating experience.

(1) Two semester hours, three quarter hours, or three CEUs of directly related post-high school education may be substituted for one-half the operating experience requirement for Grades I and II.

(2) Thirty semester hours, 45 quarter hours, or 45 CEUs of directly related post-high school education may be substituted for one year of experience up to a maximum of one-half the operating experience requirement for Grades II, III and IV.

(3) That portion of education that is applied toward substitution for operating experience cannot also be used for education.

(4) Class hours involving closely supervised on-the-job type training in a pilot or full-scale facility where there are clearly defined educational objectives may be applied to the on-the-job operating experience requirement. The substitution value of such training shall be applicable for Grade I and Grade II certification only and shall not exceed one-half year of on-the-job experience.

1. One hour of on-the-job training is equivalent to three hours of on-the-job operating experience.

2. One month of on-the-job training consists of 20 eight-hour days.

3. Credit for on-the-job training may be applied only to the examination for the type of plant or system in which the experience was obtained.

4. That portion of on-the-job training courses that is applied toward substitution for the on-the-job experience requirement cannot also be used for education.

c. Substitution of education for DRC operating experience. Thirty semester hours, 45 quarter hours, or 45 CEUs of directly related post-high school education may be substituted for one year of DRC operating experience up to one-half the requirement for Grade IV certification.

81.6(4) *Military education, training, or service credit.*

a. An applicant who is serving or has served in the military shall identify the education or experience certification qualification for which the credit is requested.

b. As part of an examination application pursuant to 81.8(1), an applicant shall provide documents, military transcripts, a certified affidavit, or forms that verify completion of the relevant military education, training, or service, which may include, as applicable, the applicant's Certificate of Release or Discharge from Active Duty (DD Form 214) or Verification of Military Experience and Training (VMET) (DD Form 2586).

567—81.7(455B) Certification and examination fees.

81.7(1) *Examination fee.* Fee for each examination: \$30.

81.7(2) *Certification fees.*

a. Certification fee for each one-half year of a two-year period from the date of issuance to June 30 of odd-numbered years: \$20.

b. Late certification penalty fee: \$18.

c. Certification renewal fee: \$60.

d. Late certification renewal penalty fee: \$18.

81.7(3) *Fee adjustments.* The department may adjust the fees annually by up to plus or minus 20 percent to cover costs of administering and enforcing these rules and reimbursement for other expenses relating to operator certification. The commission must approve any fee increases above those listed in this rule. All fees collected shall be retained by the department for administration of the operator certification program.

567—81.8(455B) Operator certification examinations.

81.8(1) *Examination application.*

a. All persons wishing to take the examination to become a certified operator of a wastewater or water treatment plant or a water distribution system shall complete an examination application on a form provided by the department.

b. All examination applications shall be accompanied by the examination fee.

81.8(2) *Application evaluation.* After evaluating an application, the department will notify the applicant of examination eligibility or noneligibility. The director will further review applications when it is indicated that the applicant has falsified information or when questions arise concerning an applicant's qualifications or eligibility for examination or certification.

81.8(3) *Application expiration.* An approved examination application shall be valid for one year from the approval date.

81.8(4) *Examination fee refund.* An applicant who does not qualify for examination at the time of application will have the examination fee refunded if the applicant cannot qualify for examination within one year. If an applicant will qualify for a scheduled examination within one year, the fee will not be refunded.

81.8(5) *Reexamination.*

- a. Upon failure of the first examination, an applicant may apply for reexamination.
- b. Upon each reexamination when a valid application is on file, an applicant shall submit the examination fee to the department.

81.8(6) *Application invalidation.* Failure to successfully complete the examination within one year from the application approval date shall invalidate the application.

81.8(7) *Reasonable accommodation.* Upon an applicant's request, the director will consider reasonable accommodation to allow administration of the examination without discrimination on the basis of disability. An applicant shall request an accommodation 30 days prior to the examination date. An applicant shall provide documentation of eligibility for an accommodation with the examination application form.

567—81.9(455B) Operator certification.

81.9(1) *Examination requirement.* All applicants not certified by reciprocity pursuant to 81.9(3) shall successfully pass an operator certification examination prior to receiving certification.

81.9(2) *Certification.*

a. In order to receive a certificate, an applicant who passes an examination shall submit the certification fee to the department within 60 days of the date the applicant receives notification from the department of passing the examination. Payment may either be digitally submitted in accordance with the instructions on the department's website at www.iowadnr.gov, mailed, or hand delivered. All certification fee payments that are mailed or hand delivered shall be submitted with the applicant's notification of passing the examination.

b. Any certification payment digitally submitted, postmarked, or hand delivered to the department more than 30 days but less than 60 days after the date the applicant received notification of passing the examination shall be accompanied by the certification fee and the late certification penalty fee.

c. An applicant who does not submit the certification fee within 60 days' notice of passing the examination will not be certified on the basis of that examination.

81.9(3) *Certification by reciprocity.*

a. Other states' mandatory certification programs. Applicants who have been certified under other states' mandatory certification programs, the equivalency of which has been previously reviewed and accepted by the department, shall be certified in an appropriate classification and grade without examination. The applicant must have passed an examination generally equivalent to the Iowa examination and must meet the education and experience qualifications established in this chapter.

b. Other states' voluntary certification programs. For applicants who have been certified under voluntary certification programs in other states, certification in an appropriate class will be considered. The applicant must have passed an examination generally equivalent to the Iowa examination and must meet the education and experience qualifications established in this chapter. The director may require the applicant to pass the Iowa examination.

c. Reciprocity application.

(1) Applicants seeking reciprocal Iowa certification shall submit a reciprocity application form provided by the department and the certification fee. The applicant shall be certified at the appropriate grade pursuant to 81.6(1).

(2) An applicant who is a veteran shall submit a reciprocity application form provided by the department and the certification fee and shall provide documentation to verify their status as a veteran as defined in Iowa Code section 35.1(2).

d. Lapse of certification obtained through reciprocity. An applicant who obtains certification in Iowa through reciprocity and subsequently allows their Iowa certification to lapse will be required to reapply for certification in accordance with 81.9(5) "e."

81.9(4) *Restricted certification.* Upon written request by a certified operator, the director may determine that the education qualifications can be waived prior to an examination when a plant or distribution system classification is increased and the operator has been in DRC of the existing plant or distribution system. An operator passing an examination will be restricted to that plant or distribution system until the education qualifications are met.

81.9(5) *Certification renewal.*

a. Renewal period. All certificates shall expire on June 30 of odd-numbered years and shall be renewed every two years in order to maintain certification.

b. Continuing education requirements for renewal. The CEU credits detailed in 567—81.10(455B,272C) shall be obtained prior to any certificate renewal.

c. Renewal application and fee.

(1) Certification renewal applications shall be made available to certified operators on the department's website at www.iowadnr.gov prior to the certificate expiration date.

(2) All renewal applications shall be digitally submitted, postmarked, or hand delivered to the department prior to certificate expiration and shall be accompanied by the certification renewal fee.

d. Late renewal. Any certification renewal application digitally submitted, postmarked, or hand delivered to the department after certificate expiration shall be accompanied by the certification renewal fee and the late certification renewal penalty fee.

e. Failure to renew. If a certified operator fails to renew within 60 days following certificate expiration, the right to renew the certificate is automatically terminated. Certification may be allowed at any time following such termination, provided that the applicant meets all education and experience eligibility requirements of 567—81.6(455B), successfully passes an examination, and submits the certification fee in accordance with 81.9(2).

f. Expired certificate. An operator may not continue as the OIC of a plant, distribution system, operating shift, or major segment of a plant or distribution system after certificate expiration unless the certificate is renewed.

81.9(6) *Certificate upgrade.* An operator holding an unexpired certificate may upgrade the certificate by examination to a higher grade in the same classification in accordance with this rule and 567—81.6(455B) and 567—81.8(455B). The expiration date of the upgraded certificate shall be the same as the unexpired certificate. An operator who upgrades a certificate during a biennium must also renew the upgraded certificate in accordance with 81.9(5) to maintain certification.

567—81.10(455B,272C) *Continuing education.*

81.10(1) *Continuing education unit (CEU) general requirements.*

a. Only those operators fulfilling the CEU requirements before the end of each two-year period (March 31) will be allowed to renew their certificate(s). All certificates of operators who did not fulfill the CEU requirements as of April 1 of the second year shall expire on June 30 of each odd-numbered year.

b. CEUs must be earned during two-year periods between April 1 and March 31 of odd-numbered years.

c. A Grade III or IV certified operator must earn two CEUs or 20 contact hours per certificate during each two-year period.

d. All other certified operators must earn one CEU or 10 contact hours per certificate during each two-year period.

e. For those certified operators holding both a water treatment and a water distribution certification, no less than 25 percent of the required CEUs may be earned in any one area.

81.10(2) *CEU approval.* All activities for which CEU credit will be granted must be approved by an accredited college, university, technical institute, or the department, and must be directly related to the subject matter of the particular certificate to which the credit is being applied. Any entity holding courses in Iowa for which CEU credit is offered for operator certification must provide, at no cost to the department, the opportunity for one staff member to audit the training and receive all training materials.

81.10(3) *Exceptions.* The following exceptions apply to the requirements of this rule.

a. The director may, in individual cases involving hardship or extenuating circumstances, allow a certified operator up to three additional months to fulfill the minimum CEU requirements. Hardship or extenuating circumstances include documented health-related confinement or other circumstances beyond the certified operator's control that prevent

attendance at the required activities. All extension requests must be made prior to March 31 of each biennium.

b. Newly certified operators (previously uncertified) who become certified after April 1 of the second year of a two-year period will not be required to earn CEUs until the next two-year period.

c. If an operator upgrades a certificate after April 1 of the second year of a two-year period and that upgrade increases the CEU requirement, the operator will not be required to meet the higher CEU requirement until the next two-year period, but must fulfill the lower CEU requirement for that period.

81.10(4) *CEU reporting.* It is the certified operator's personal responsibility to maintain a written record of the CEUs earned during each renewal period and to report the credits to the department by following the instructions on the department's website at www.iowadnr.gov.

567—81.11(455B) Operator by affidavit.

81.11(1) *Affidavit allowance.* The owner of a plant or distribution system required to have a Grade A, I, IL, or II certified operator may sign an affidavit with a certified operator of the required classification and grade.

81.11(2) *Affidavit requirements.*

a. An affidavit will verify that the certified operator is the OIC and has direct responsibility for a plant or distribution system that does not have first rights on the services of that operator.

b. The department shall provide an affidavit form that requires the certified operator's name and signature, the operator's certification number, classification and grade, and the date of last renewal of the operator's certificate. The affidavit form shall be proof that the certified operator has agreed to be directly responsible for the operation and maintenance of the plant or distribution system.

c. The affidavit must be returned to and approved by the local regional field office of the department, based upon the ability of the certified operator to properly operate and maintain additional facilities. Upon affidavit approval, the department may specify additional operational and maintenance requirements based on the complexity and size of the plant or distribution system.

d. In the event of affidavit disapproval, the plant or distribution system owner must terminate the agreement with the certified operator and seek the services of another certified operator.

e. Both the plant or distribution system owner and the certified operator shall notify the director at least 30 days before the termination of an affidavit.

567—81.12(455B,272C) Disciplinary actions.

81.12(1) *Reasons for disciplinary action.* Disciplinary action may be taken against a certified operator on any of the grounds specified in Iowa Code section 455B.219 and chapter 272C and the following more specific grounds:

a. Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified operator.

(1) Examples of wastewater operator duties are specified in the Water Environment Federation Manual of Practice #11, 1996; California State University—Sacramento (CSUS) Operation of Wastewater Treatment Plants, Vol. I, 4th edition, 1998; CSUS Operation of Wastewater Treatment Plants, Vol. II, 4th edition, 1998; CSUS Advanced Waste Treatment, 3rd edition, 1998; and 567—Chapters 60 through 63, 67, and 83.

(2) Examples of water treatment or distribution system operator duties are specified in the American Water Works Association (AWWA) Manuals of Water Supply Practice (Volumes 1, 3-7, 9, 11-12, 14, 17, 19-38, 41-42, 44-48); AWWA Water Supply Operations Series, 2nd edition: Vol. 1, 1995; Vol. 2, 1995; Vol. 3, 1996; Vol. 4, 1995; and Vol. 5, 1995; AWWA

Water Distribution Operator Handbook, 2nd edition, 1976; California State University—Sacramento (CSUS) Water Treatment Plant Operation, Vol. I, 4th edition, 1999; CSUS Water Treatment Plant Operation, Vol. II, 3rd edition, 1998; CSUS Small Water System Operation and Maintenance, 4th edition, 1999; CSUS Water Distribution System Operation and Maintenance, 4th edition, 2000; and 567—Chapters 40 through 43 and 83.

b. Failure to submit records of operation or other reports required under applicable permits or department rules, including failure to submit complete records or reports.

c. Knowingly making any false statement, representation, or certification on any application, record, report or document required to be maintained or submitted under any applicable permit or department rule.

81.12(2) *Disciplinary sanctions.* Disciplinary sanctions may include those specified in Iowa Code section 272C.3(2) and the following:

a. *Certificate revocation.* Revocation may be permanent without chance of recertification or for a specified period of time.

b. *Partial revocation or suspension.* Revocation or suspension of the practice of a particular aspect of the operation of a plant or distribution system, including the restriction of operation to a particular plant or distribution system, or a particular classification of plant or distribution system.

c. *Probation.* Probation under specified conditions relevant to the specific grounds for disciplinary action.

d. *Additional requirements.* Additional education, training, or reexamination may be required as a condition of certificate reinstatement.

e. *Penalties.* Civil penalties not to exceed \$1,000 may be assessed for the reasons identified in 81.12(1).

81.12(3) *Procedure.*

a. General. All disciplinary action taken under this rule shall comply with the procedures of rule 561—7.19(17A,455A) and all other applicable rules governing contested cases. At any time, the licensee and the department may enter into a settlement agreement, subject to approval by the director, which provides for a disciplinary sanction.

b. Appeal and review of proposed decision. After a contested case hearing conducted in accordance with 561—Chapter 7, the director shall review the presiding officer's proposed decision. The proposed decision shall constitute a final decision of the director and the department.

c. Emergency disciplinary action. The director may initiate an emergency suspension or other disciplinary action upon such grounds and following the procedures provided in rule 561—7.18(17A,455A). The terms of the emergency order shall be effective upon service as provided in rule 561—7.18(17A,455A). The department shall promptly give notice of an opportunity to appeal and request a contested case hearing following the procedures specified above.

d. Reinstatement of revoked certificates. Upon revocation of a certificate in accordance with the authority provided in Iowa Code section 455B.219 and chapter 272C, application for certification may be allowed after two years from the date of revocation unless otherwise specified in 81.12(2). Any such applicant shall meet all education and experience eligibility requirements, pass an examination, and be certified in the same manner as a new applicant in accordance with the requirements of this chapter.

81.12(4) *Procedures for noncompliance with child support order.* Upon receipt of a certification of noncompliance with a child support obligation as provided in Iowa Code section 252J.7, the department will initiate procedures to deny an application for operator certification or renewal or to suspend a certification in accordance with Iowa Code section 252J.8(4). The department shall issue to the person by certified mail a notice of its intent to

deny or suspend operator certification based on receipt of a certificate of noncompliance. The suspension or denial shall be effective 30 days after receipt of the notice unless the person provides the department with a withdrawal of the certificate of noncompliance from the child support recovery unit as provided in Iowa Code section 252J.8(4) “c. ” Pursuant to Iowa Code section 252J.8(4), the person does not have a right to a hearing before the department to contest the denial or suspension action under this subrule but may seek a hearing in district court in accordance with Iowa Code section 252J.9.

These rules are intended to implement Iowa Code sections 455B.211 through 455B.224 and chapter 272C.

**Iowa Department of Natural Resources
Environmental Protection Commission**

Decision Item (**indicates proposed consent item*)

***32. Chapter 82, “Well Contractor Certification” – Final Rule**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 82. This rulemaking is the result of the Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 82 establishes rules for a well contractor certification program in Iowa. The well contractor certification program includes specification of certification requirements, including minimum work experience levels, successful completion of an examination, continuing education requirements, and collection of associated fees. The rules also include provisions regarding well contractor obligations and provisions for the revocation of a well contractor’s certification. This chapter has been reviewed and edited consistent with Executive Order 10 (January 10, 2023). The edits to this chapter are minor and include eliminating redundancies, inconsistencies, unnecessary language, and duplicative language.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8599C. Two public hearings were held on February 3, 2025 and February 4, 2025.

Changes from NOIA: No comments were received during the public comment period. There were seven attendees from the public that joined the public hearings. The final rule is identical to the NOIA.

Effective Date of Final Rule: June 18, 2025

Erik Day, Geologist 3
Environmental Services Division
Water Quality Bureau
Meeting Date: April 15, 2025

Attached: Chapter 82 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission hereby rescinds Chapter 82, “Well Contractor Certification,” Iowa Administrative Code and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.187(1), 455B.190A(2), 455B.190A(4), 455B.190A(5), 455B.173(9), 455B.103(2) and 455B.105(3).

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.187 and 455B.190A and Executive Order 10.

Purpose and Summary

New Chapter 82 establishes rules for a well contractor certification program in Iowa. The well contractor certification program includes specification of certification requirements, including minimum work experience levels, successful completion of an examination, continuing education requirements, and collection of associated fees. The rules also include provisions regarding well contractor obligations and provisions for the revocation of a well contractor’s certification. This chapter has been reviewed and edited consistent with Executive Order 10 (January 10, 2023).

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as ARC 8599C.

Two public hearings were held. The first public hearing was held on February 3, 2025 from 10:00 AM to 11:00 AM virtually via Zoom. The second public hearing was held on February 4, 2025 from 2:00 PM to 3:00 PM virtually via Zoom.

Seven people attended the first public hearing but did not submit any comments. Three people attended the second public hearing but did not submit any comments. No public comments were received during the public comment period.

The final rule is identical to the Notice of Intended Action.

Adoption of Rulemaking

This rulemaking was adopted by the Environmental Protection Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the state of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 82 and adopt the following **new** chapter in lieu thereof:

CHAPTER 82

WELL CONTRACTOR CERTIFICATION

567—82.1(455B) Definitions. In addition to the definitions in 567—Chapter 39, 567—Chapter 40, 567—Chapter 49, and Iowa Code sections 455B.171, 455B.190, and 455B.190A, which are hereby adopted by reference, the following definitions shall apply to this chapter:

“Pump installer” means a person certified by the department to perform pump services.

“Pump services” means the same as defined in Iowa Code section 455B.190A. The term also includes modification of the upper terminus of a well; well plugging; well rehabilitation; or the construction of Class 3 wells.

“Well driller” means a person certified by the department to perform well drilling services.

“Well drilling services” means the same as “well services” as defined in Iowa Code section 455B.190A. The term includes well rehabilitation.

“Well plugging contractor” means a well contractor certified to plug only Class 1 or Class 3 wells but not certified to abandon Class 2 wells or perform any other well services.

567—82.2(455B) General.

82.2(1) *Certified well contractor requirement.*

a. All well services shall be performed pursuant to this chapter by a certified well contractor who is on site and in direct charge of the well services, except that a person may perform well services on their own property without being certified.

b. Prior to performing well drilling services, a certified well contractor shall notify:

(1) The department or the county, if a well does not have the required construction permits;
or

(2) The department, if the use of the water requires a water use allocation and the owner has not applied for or been issued a water use allocation.

82.2(2) *Applicability exception.* These rules shall not apply to a water operator certified pursuant to Iowa Code section 455B.213, when the water operator is performing pump services on any well owned by a PWS as defined in Iowa Code section 455B.171. These rules shall not apply to a wastewater operator certified pursuant to Iowa Code section 455B.213, when the wastewater operator is performing pump services on a groundwater monitoring well, groundwater dewatering well, or other well not used to provide drinking water, owned by a sewer system as defined in Iowa Code section 455B.171. Pump installer certification requirements shall not apply to monitoring wells.

82.2(3) *Address change.* Certified well contractors shall report address changes to the department within 30 days after the change.

567—82.3(455B) Classification of well contractors.

82.3(1) *Classifications.* The three classifications of certified well contractors are:

a. Certified well contractor, including:

- (1) Well driller, and
- (2) Pump installer.

b. Provisionally certified well contractor, including:

- (1) Well driller, and
- (2) Pump installer.

c. Well plugging contractor.

82.3(2) *Certified well contractor.* In order to be a certified well contractor, an applicant shall have met the experience requirements, successfully completed the well contractor examination for well drilling services or pump services, or both, been issued a certificate by the department, and renewed the certification in accordance with this chapter.

82.3(3) *Provisionally certified well contractor.* The requirements and conditions for provisional well contractor certification are described in Iowa Code section 455B.190A. A provisionally certified well contractor will become a certified well contractor after the submission of an application showing all certification requirements have been met and submission of appropriate fees to the department. The certificate for a provisionally certified well contractor will be issued for one year. The department shall issue a certified well contractor certificate after the one-year period and the receipt of appropriate fees.

82.3(4) *Well plugging contractor.* In order to be certified as a well plugging contractor, an applicant shall take a four-hour training course designated by the department, successfully complete a well plugging test, be issued a certificate by the department, and renew the certification in accordance with this chapter.

567—82.4(455B) Experience requirements. All applicants shall meet the experience requirements shown below. Educational programming approved by the department may be substituted for up to one half of any experience requirement at the rate of one continuing education unit (CEU) for each 100 hours of required experience.

CLASSIFICATION	EXPERIENCE
Certified Well Contractor (well driller)	Two years' employment and 2000 hours work experience in Class 1 and Class 2 well construction
Certified Well Contractor (pump installer)	Two years' employment and 1000 hours work experience in the installation, repair, and maintenance of water systems

Provisionally Certified Well Contractor	One half of the employment and experience required for full certification
Well Plugging Contractor	None

567—82.5(455B) Certification and examination fees. The following fees are nonrefundable.

82.5(1) *Examination fee.* Fee for each examination: \$50.

82.5(2) *Oral examination fee.* Fee for each oral examination: \$100.

82.5(3) *Certification fees.*

a. Well drilling contractors.

(1) Initial certification fee for each one-half year of a two-year period from the date of issuance to June 30 of the next even-numbered year: \$75.

(2) Certification renewal fee: \$300.

b. Pump installation contractors and well plugging contractors.

(1) Initial certification fee:

1. For each one-half year of the first year of certification: \$75.

2. For each additional one-half year period to June 30 of the next even-numbered year: \$50.

(2) Certification renewal fee: \$200.

82.5(4) *Provisionally certified well contractor fee.* Provisionally certified well contractor fee: \$150.

82.5(5) *Late certification penalty fee.* Penalty fee for late payment of the initial certification fee or renewal fee: \$100.

82.5(6) *Duplicate certificate fee.* A currently certified well contractor may obtain a duplicate certificate upon payment of a \$20 fee.

82.5(7) *Recertification fee.* Contractors who have not earned sufficient CEUs for certification renewal and who wish to recertify within two years after expiration of their certification must retake and pass the examination(s) and pay a certification fee of \$1,000.

567—82.6(455B) Examinations.

82.6(1) *Examination types.* There are four well contractor examinations available:

- a. General fundamentals examination - well drilling and pump installation contractors.
- b. Specialty examination - well drillers.
- c. Specialty examination - pump installers.
- d. Specialty examination - well plugging contractors.

82.6(2) *Required examinations.*

a. Well drilling contractors and pump installers must take and pass the general fundamentals examination and at least one of the specialty examinations. Examinations may be taken at the same time and place or at different times. Work shall be limited to the specialty in which proficiency has been demonstrated by written examination.

- b. Well plugging contractors must take and pass the well plugging examination only.

82.6(3) *Examination application.*

a. A person wishing to take the examination(s) to become a certified well contractor shall complete and submit an examination application form provided by the department.

- b. All examination applications shall be accompanied by the examination fee.

c. The department may allow local county environmental health officials to take an examination, even if they do not meet the work experience or training requirements, provided they pay the examination fee. If an official receives a passing score on the examination, they will receive a letter of acknowledgement; however, they will not be certified and will not be allowed to perform any well services.

82.6(4) *Application evaluation.* After evaluating an application, the department will notify an applicant of examination eligibility or noneligibility.

82.6(5) *Application expiration.* An approved examination application shall be valid for one year from the approval date. All required examinations shall be completed within one year of application.

82.6(6) *Examination fee refund.* The department may refund a portion of the examination or reexamination fee for an applicant who does not qualify for examination within one year of

application approval. If an applicant will qualify for a scheduled examination within one year, the fee will not be refunded.

82.6(7) *Reexamination.*

a. Upon failure of the first examination, an applicant may apply for reexamination. Upon failure of the second examination, the applicant must wait a period of 180 days between each subsequent reexamination.

b. Upon each reexamination while a valid application is on file, an applicant shall submit the examination fee to the department.

82.6(8) *Application invalidation.* Failure to successfully complete the necessary examinations within one year from the application approval date shall invalidate an application.

82.6(9) *Oral examination.* Upon written request by an applicant, the director will consider administering an oral examination on an individual basis when: the applicant has failed the written examination at least twice; the applicant has shown difficulty in reading or understanding written questions but may be able to respond to oral questioning; the applicant is capable of communicating in writing with regard to departmental requirements and inquiries; and the director has received a written recommendation for an oral examination from a department staff member attesting to the operational and performance capabilities of the applicant.

82.6(10) *Reasonable accommodation.* Upon an applicant's request, the director will consider reasonable accommodation to allow administration of an examination without discrimination on the basis of disability. An applicant shall request accommodation 30 days prior to the examination date. An applicant shall provide documentation of eligibility for the accommodation with the examination application form. Accommodations based on documentation may include site accessibility, oral examination, extended time, separate testing area, or other concerns. If an oral examination is considered a reasonable accommodation, the oral examination fee shall apply.

567—82.7(455B) Contractor certification.

82.7(1) *Examination requirement.* All applicants for well contractor certification shall pass the relevant examinations prior to receiving certification.

82.7(2) *Certification.*

a. To receive certification, an applicant who passes the examination(s) shall submit the appropriate certification fee to the department within 30 days of receiving notification from the department of passing the examination(s). Payment may be digitally submitted in accordance with the instructions on the department's website at www.iowadnr.gov, mailed, or hand delivered. All certification fee payments that are mailed or hand delivered shall be submitted with the applicant's notification of passing the examination(s).

b. Any certification payment digitally submitted, postmarked, or hand delivered to the department more than 30 days but less than 60 days after the date the applicant received notification passing the examination(s) shall be accompanied by the appropriate certification fee and the late certification penalty fee.

c. Applicants who do not submit the appropriate certification fee within 60 days' notice of passing the examinations will not be certified on the basis of that examination(s).

82.7(3) *Denial appeal.* Applicants may appeal a denial of certification within 30 days of receiving notification pursuant to 567—Chapter 7.

82.7(4) *Certificate renewal.*

a. *Renewal period.* All certificates shall expire on June 30 of even-numbered years and shall be renewed every two years in order to maintain certification.

b. *Continuing education requirements for renewal.* The CEU credits detailed in 567—82.8(455B) shall be obtained prior to any certificate renewal.

c. *Renewal applications and fee.*

(1) Certification renewal applications shall be made available to certified well contractors on the department's website at www.iowadnr.gov 60 days prior to the certificate expiration date.

(2) All renewal applications shall be digitally submitted, postmarked, or hand delivered to the department prior to certificate expiration, and shall be accompanied by the appropriate certification renewal fee.

d. Late renewal. Any certification renewal application digitally submitted, postmarked, or hand delivered to the department after certificate expiration shall be accompanied by the appropriate certification renewal fee and the late certification renewal penalty fee.

e. Failure to renew. If a certified well contractor fails to renew within 60 days following certificate expiration, the right to renew the certificate is automatically terminated. Certification may be allowed at any time following such termination, provided that the applicant passes the appropriate examinations and submits the appropriate certification fee in accordance with this rule.

f. Expired certificate. A certified well contractor may not continue to provide well services after certificate expiration without renewal thereof.

567—82.8(455B) Continuing education.

82.8(1) *CEU requirements.* CEUs must be earned during two-year periods between April 1 and March 31 of even-numbered years.

a. A certified well contractor holding well driller certification or both well driller and pump installer certifications must earn 1.6 CEUs or 16 contact hours during each two-year period.

b. A certified well contractor holding only pump installer certification must earn 1.0 CEU or 10 contact hours during each two-year period.

c. A well plugging contractor may be required to earn 0.2 CEUs or 2 contact hours during each two-year period as determined by the department, provided the well plugging contractor is notified of the requirement at the beginning of the renewal period.

d. Newly certified (previously uncertified) well contractors who are certified after April 1 of even-numbered years will not be required to earn CEUs until the next two-year period.

82.8(2) *Certificate renewal.* Only those certified well contractors fulfilling the CEU requirements before the end of each two-year period (March 31) will be allowed to renew their certificate(s). All certificates of certified well contractors not fulfilling the CEU requirements shall expire on June 30 of every even-numbered year.

82.8(3) *CEU approval.* All activities for which CEU credit will be granted must be approved by an accredited college or university, technical institute, or the department, and shall be related to well services, relevant aspects of Iowa groundwater law, well construction, well maintenance, well abandonment practices, well contractor safety (no more than 0.2 CEU per renewal), water system maintenance, or Iowa hydrogeologic conditions that protect groundwater and water supplies.

82.8(4) *CEU exceptions.* The director may, in individual cases involving hardship or extenuating circumstances, grant a certified well contractor six additional months to fulfill the minimum CEU requirements. Hardship or extenuating circumstances include documented health-related confinement or other circumstances beyond the control of the contractor that prevent attendance at the required activities. All extension requests must be made prior to March 31 of each even-numbered year.

82.8(5) *CEU reporting.* It is the certified well contractor's personal responsibility to maintain a written record of the CEUs earned during each renewal period and report the credits to the department by following the instructions on the department's website at www.iowadnr.gov.

82.8(6) *Alternative CEU requirements.* A certified well contractor shall be deemed to have complied with the CEU requirements of this rule during periods that they serve honorably on active duty in the military services, for periods of government employment working as a well contractor and assigned to duty outside of the United States, or for other periods of active practice and absence from the state approved by the director.

567—82.9(455B) Certified well contractor obligations.

82.9(1) *Record and sample submission.* Within 30 days of completion of any water well, each certified well contractor shall submit the following:

a. A well record form to the authority who issued the well construction permit (the department or the local county health department), in accordance with 82.9(2); and

b. Drill cutting samples to the Iowa Geological Survey (IGS) for any water well used as part of a public water supply, a well used for water withdrawal for which a permit is required by 567—50.1(455B), or a department-required well used to monitor groundwater quantity or quality, as required by 82.9(3).

c. Prior to constructing a water well to be used as part of a nonpublic water supply or other water well used to access groundwater, a certified well contractor shall contact the local health department in the county in which the water well is to be located to determine if submittal of drill cutting samples is required.

82.9(2) *Well record form.* Well drilling records shall be submitted on the well record form, or, for all nonpublic water supply wells, into the department's Iowa Well Information System database. Both the form and the database are available on the department's website at www.iowadnr.gov. The well record form shall include the following:

a. Well location and legal description (quarter section, section number, township, range, and county);

b. Reference point for all depth measurements;

c. Depth at which each significant change of formation occurs;

d. Depth at which pump is set, the non-pumping and pumping water levels in the well measured from the land surface, and the rate and duration the well was pumped;

e. Identification of the material of which each significant stratum is composed;

f. Depth at which hole diameters (bit sizes) change;

g. Normal hole diameter of the well bore;

h. Total depth of the completed hole;

- i.* Depth or location of any lost drilling fluids, drilling materials, or tools;
- j.* Casing depth, grouting schedule, including materials used and method of placement, and description of the well casing and liner pipe;
- k.* A description of well screens, including diameter, length, material slot sizes, amount of open area, and location in well; and
- l.* A description of physical and chemical well development activities.

82.9(3) *Cutting samples.* Drill cutting samples shall be collected at intervals of five feet and at each pronounced change in geological formation. The IGS will provide drill cutting bags.

82.9(4) *Test pumping.* Certified well contractors shall provide, as requested, test pumping data for water wells used as part of a public water supply and for water wells used as part of a regulated water use pursuant to 567—subrule 50.6(1).

567—82.10(455B) Disciplinary actions.

82.10(1) *Reasons for disciplinary action.* Disciplinary action may be taken against a certified well contractor or well plugging contractor on any of the grounds specified in Iowa Code section 455B.190A and the following more specific grounds:

- a.* Knowingly making any false statement, representation, or certification on any application, record, report, or document required to be maintained or submitted under any applicable permit or rule of the department.
- b.* Failure to renew certification.
- c.* Failure to obtain required CEUs.
- d.* Failure to submit, within the time required, drill cutting samples, records, or other reports required under applicable permits or rules of the department, including failure to submit complete records or reports.
- e.* Failure to use reasonable care or judgment or to apply knowledge or ability in performing the duties of a certified well contractor or well plugging contractor.

f. Violation of well construction, plugging or pump installation standards or other requirements in 567—Chapters 39, 43, 49 and 110.

g. Failure to advise a person for whom well services are being provided that a hazardous or potentially hazardous condition, as defined in Iowa Code section 455B.381(2), has been encountered.

h. Knowingly causing or allowing a hazardous or potentially hazardous condition due to well construction to exist.

i. Drilling or reconstructing a well without a construction permit.

82.10(2) *Disciplinary sanctions.*

a. *Certificate revocation.* Revocation of a certificate may be permanent without chance of recertification or for a specified period of time.

b. *Partial revocation or suspension.* Revocation or suspension of the practice of a particular aspect of the contractor's responsibility.

c. *Probation.* Probation under specified conditions relevant to the specific grounds for disciplinary action. Additional education or training or reexamination may be required as a condition of probation. Reexamination may include written and oral examinations.

d. *Fees.* The department shall determine which fees in 567—82.5(455B) apply.

e. *Penalties.* Civil penalties may be assessed in accordance with Iowa Code section 455B.109.

82.10(3) *Procedure.*

a. The director shall initiate disciplinary action. The director may investigate any alleged factual situation that may be grounds for disciplinary action under 82.10(1) and report the results of the investigation to the commission.

b. The director may issue an administrative order that may assess a penalty or refer a case to the attorney general for prosecution for any disciplinary action.

c. Written notice by certified mail shall be provided to a certified well or well plugging contractor against whom disciplinary action is being considered. The certified well or well

plugging contractor will be given 20 days' advance notice that an informal hearing has been scheduled before the commission. The notice will provide the specific date, time, and place, at which time the commission will hold the informal hearing to determine whether a formal hearing is warranted or whether informal resolution can be reached. The certified well or well plugging contractor may present any relevant facts and indicate their position in the matter.

d. A certified well or well plugging contractor who receives notice of an informal hearing shall communicate orally or in writing with the director, and efforts shall be made to clarify the respective positions of the certified well or well plugging contractor and the director. Department staff may present a recommendation concerning disciplinary sanctions to the commission at the informal hearing.

e. Failure to attend the informal hearing or otherwise to communicate facts and position relevant to the matter by the scheduled date will be considered by the commission when determining whether a formal hearing is warranted.

f. If agreement as to appropriate disciplinary sanction, if any, can be reached with the certified well or well plugging contractor and the commission concurs, a written stipulation and settlement between the department and the certified well or well plugging contractor shall be entered. The stipulation and settlement shall recite the basic facts and violations alleged, any facts presented by the certified well or well plugging contractor, and the reasons for the particular sanctions imposed.

g. If the commission determines that no disciplinary action is warranted on the facts asserted, the certified well or well plugging contractor shall be notified of the decision in writing.

h. If the commission determines that an opportunity for formal hearing is required to impose any disciplinary sanction specified in 82.10(2), the director shall proceed in accordance with 567—Chapter 7.

567—82.11(455B,272C) Certificate revocation. Upon certificate revocation in accordance with Iowa Code section 455B.190A, application for certification may be allowed after two years from

the revocation date. Any such applicant shall pass an examination and be certified in the same manner as other applicants. The department shall determine which fees in 567—82.5(455B) apply.

These rules are intended to implement Iowa Code sections 455B.187 and 455B.190A.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item (**indicates proposed consent item*)

***33. Chapter 83, “Laboratory Certification” – Final Rule**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 83. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: New Chapter 83 establishes the procedures for laboratory certification, fees, and criteria for downgrading a certification for laboratory. A laboratory certification program for drinking water is required by 40 CFR § 141.10(b)(3)(i) for the state to receive primacy for federal drinking water regulations. The chapter has been updated to reflect current practices, remove outdated language, omit language that duplicated federal rules, and consolidated method references and reporting requirements from other rule chapters.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8601C. Two public hearings were held on January 28 & 31, 2025.

Changes from NOIA Eight comments were received regarding the rules. A definition was added and minor changes were made to the rules to clarify and better define the rules. Grammar and typographical errors were corrected. The revised language was shared with the commenters and no one had any objections.

Effective Date of Final Rule: June 18, 2025

Kathleen Lee, Senior Environmental Specialist
Water Quality Bureau
Environmental Services Division
April 15, 2025

Attached: Chapter 83 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 83, “Laboratory Certification,” Iowa Administrative Code, and adopts a new chapter with the same title.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code sections 455B.103(2), 455B.105(3) and 455B.113 through 455B.115.

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code sections 455B.113 through 455B.115 and 40 CFR §141.10(b)(3)(i).

Purpose and Summary

New Chapter 83 establishes the procedures for laboratory certification, fees, and criteria for downgrading a certification for a laboratory. A laboratory certification program for drinking water is required by 40 CFR § 141.10(b)(3)(i) for the state to receive primacy for federal drinking water regulations. This chapter was reviewed and edited consistent with Executive Order 10 (January 10, 2023).

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as **ARC 8601C**.

Two virtual public hearings were held on January 28, 2025 at 10:00 am and January 31, 2025 at 10:30 am.

Twenty people registered for the first hearing and approximately 15 attended. Seventeen people registered for the second hearing and approximately 12 attended.

Eight comments were received regarding the rules. A definition was added and minor changes were made to the rules to clarify and better define the rules. Grammar and typographical errors were corrected.

Adoption of Rulemaking

This rulemaking was adopted by the Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the state of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567-Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its regular monthly meeting or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 83 and adopt the following **new** chapter in lieu thereof:

CHAPTER 83

LABORATORY CERTIFICATION

PART A

GENERAL

567—83.1(455B) Authority, purpose, and applicability.

83.1(1) *Authority.* Pursuant to Iowa Code section 455B.113, a laboratory certification program is required for laboratories performing analyses of samples that are required to be submitted to the department as a result of Iowa Code provisions, rules, operation permits, or administrative orders. Pursuant to Iowa Code section 455B.114, the department may suspend or revoke the certification of a laboratory upon its determination that the laboratory no longer fulfills one or more of the requirements for certification.

83.1(2) *Purpose.* The purpose of these rules is to provide the procedures for laboratories to use to apply for and maintain certification, to establish laboratory certification fees, and to provide the appropriate methods and references for evaluating laboratory competence including the requirements for laboratories to become certified.

83.1(3) *Applicability to environmental program areas.* This chapter applies to the following laboratories:

a. Water supply (drinking water). All laboratories conducting drinking water analyses pursuant to 567—Chapters 40, 41, and 43.

b. Underground storage tanks. All laboratories conducting underground storage tank (UST) analyses for petroleum constituents pursuant to 567—Chapter 135. Routine on-site monitoring conducted by or for UST owners for leak detection or a nonregulatory purpose is excluded from this requirement.

c. Wastewater (nonpotable water). All laboratories conducting analyses of wastewater, groundwater or sewage sludge (municipal biosolids), or manure pursuant to 567—Chapters 63, 65, 67, and 69.

d. Solid waste and contaminated sites. All laboratories conducting analyses of solid waste parameters pursuant to 567—Chapters 100 through 129, contaminated site parameters pursuant to 567—Chapters 133 and 137, and regulated substances other than petroleum parameters regulated under 567—Chapter 135.

83.1(4) Exclusions. Any parameter that must be analyzed immediately upon sample collection is excluded from the requirements of this chapter. Any samples collected or testing conducted that is not part of the specific monitoring required by the department for regulatory purposes are also excluded from the requirements of this chapter.

567—83.2(455B) Definitions.

“*Batch*” means environmental samples that are prepared, analyzed, or both together with the same process and personnel, using the same lot(s) of reagents. A preparation batch is composed of 1 to 20 environmental samples of the same quality systems matrix (water supply, wastewater, etc.), meeting the above-mentioned criteria and with a maximum time between the start of processing of the first and last sample in the batch to be 24 hours. An analytical batch is composed of prepared environmental samples (extracts, digestates or concentrates) that are analyzed together as a group. An analytical batch can include prepared samples originating from various quality system matrices and can exceed 20 samples. If there is a conflict between this definition and the requirements of an approved method, the more stringent requirements shall apply.

“*Certified*” means a laboratory demonstrates to the satisfaction of the department its ability to consistently produce valid data within the acceptance limits as specified within the department’s requirements for certification and meets the minimum requirements of this chapter and all applicable regulatory requirements. A laboratory may be certified for an analyte, an analytical

series, or an environmental program area, except in the UST program area, where certification for individual analytes is not allowed.

“Corrective action report” or *“CAR”* means documentation that demonstrates a laboratory has satisfied cited deficiencies or deviations.

“Critical staff” means an analyst who is the only person at a laboratory performing a particular function or analysis (no backup analyst).

“Demonstration of capability” or *“DOC”* means a procedure used to demonstrate the ability of an analyst to generate acceptable accuracy for each method the analyst performs.

“Discharge monitoring report-quality assurance” or *“DMRQA”* means an effluent performance test study regulated by the National Pollutant Discharge Elimination System (NPDES) program and administered by the EPA.

“Environmental program area” means the water supply (drinking water) program, underground storage tank program, wastewater program (nonpotable water), or solid waste and contaminated site program pursuant to 83.1(3).

“Essential staff” means an analyst who is primarily responsible for a particular analysis/program and handles the administrative or technical tasks associated with the analysis or program.

“Holding time” means the maximum time a sample may be held before beginning of an associated analysis.

“Level of quantitation” or *“LOQ”* means the analyte concentration that produces a signal sufficiently stronger than the blank, such that it can be detected with a specified level of uncertainty during routine operations.

“Manual for the Certification of Laboratories Analyzing Environmental Samples for the Iowa Department of Natural Resources” is incorporated by reference in this chapter.

Chapter 1 pertains to certification of laboratories analyzing samples of drinking water and incorporates by reference the Manual for the Certification of Laboratories Analyzing Drinking

Water, 5th edition, January 2005, EPA document 815-R-05-004; Supplement 1, June 2008, EPA 815-F-08-006; and Supplement 2, November 2012, EPA 815-F-12-006.

Chapter 2 (2020), pertains to laboratories analyzing samples for the UST program.

Chapter 3 (2017), pertains to laboratories analyzing samples for wastewater and sewage sludge disposal programs.

Chapter 4 (2017), pertains to laboratories analyzing samples for the solid waste and contaminated site programs.

“Method detection limit” or *“MDL”* means the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.

“National environmental laboratory accreditation program” or *“NELAP”* means the third-party accreditation program that is managed by the NELAC Institute (TNI), a 501(c)(3) nonprofit organization, and that is based on consensus standards representing the best professional practices for laboratories.

“Quality assurance plan” or *“QA plan”* means a document that describes the key elements of laboratory functions that provide quality testing results to the client. The key elements include but are not limited to a description of the laboratory organizational structure and lines of responsibility; sampling requirements, procedures, and locations; sampling handling procedures; calibration procedures and frequencies; procedures for data reduction, validation, and reporting; quality control procedures including type, frequency and acceptance criteria; procedure(s) used to determine data precision and accuracy; corrective action contingencies; and preventative maintenance and schedules.

“Proficiency test sample” or *“PT sample”* means a reference sample provided to a laboratory for the purpose of demonstrating that a laboratory can successfully analyze the sample within limits of performance specified by the department. The true value of the concentration of the reference material is unknown to the laboratory at the time of analysis.

“Provisional certification” or *“provisional status”* means a laboratory has deficiencies, which must be corrected within the specified time frames in 83.6(3)“d,” but demonstrates to the satisfaction of the department its ability to consistently produce valid data within the acceptance limits as specified within the department’s certification requirements.

“Reporting limit” means a value established by the laboratory that is at or above the LOQ consistent with the method and compliance reporting requirements.

“Revoked certification” means a laboratory no longer fulfills the requirements of this chapter, and certification is revoked by the director upon determination of the director that the laboratory no longer fulfills the requirements for certification (Iowa Code section 455B.114).

“Signature authority” means the person with the managerial, educational, and technical experience authorized to sign analytical reports on behalf of the laboratory.

“Standard operating procedure” or *“SOP”* is a set of written instructions that describe, in detail, how to perform a laboratory method or process safely, consistently, and effectively.

“SHL” means the State Hygienic Laboratory at the University of Iowa.

“Suspended certification” means a temporary suspension of certification for a laboratory, conditional upon meeting the time frames in 83.6(5)“d” for the correction of the deficiency.

“Temporary certification” or *“temporary status”* means short-term transitional certification granted to a new laboratory that has no history of generating compliance data.

“Traceability” means the unbroken chain of events in the process of a sample being collected, received at the laboratory, prepared for analysis, analyzed, data reviewed and reported, and final disposal of the sample.

PART B

CERTIFICATION PROCESS

567—83.3(455B) Application for laboratory certification.

83.3(1) *Application forms.* Application for laboratory certification shall be made on department form 542-0492 (July 2021) and shall be accompanied by the nonrefundable fee

specified in 83.3(2). The application for certification renewal shall be made at least 60 days prior to the certification expiration date. The department may require submission of additional information necessary to evaluate the application. All documentation and fees must be submitted to the department prior to the on-site audit. Failure to submit a complete application may result in denial of the renewal or certificate update.

83.3(2) *Fees and expenses.*

a. A nonrefundable fee for the administration, completion of on-site laboratory surveys and assessments, and enforcement of laboratory certification requirements shall be paid with the certification application.

(1) The on-site audit will not be conducted and certification will not be issued until the fees and expenses are paid and all other certification requirements are met. The fee for certification will not be refunded if an on-site audit is not performed.

(2) Out-of-state laboratories will be responsible for paying the expenses of an on-site audit, in addition to the standard certification fee if required, and the department or its agent will bill the out-of-state laboratory directly for the expenses.

(3) When a laboratory's certification status is changed to provisional or suspended and the period for correcting deficiencies extends beyond the certification period, the laboratory must continue to pay the required fees in order to maintain its certification status.

(4) Additional fees will be assessed for the following, and the department or its agent will bill the laboratory directly.

1. The laboratory is responsible for paying for any additional on-site audits, at a fee of \$300 per audit. An example of this is when an additional on-site audit is required when a laboratory seeks certification for an entirely new set of parameters for which it had previously not been certified.

2. When an on-site audit is required to inspect for deficiencies that the laboratory must correct, the fee is \$500 per audit.

b. Where a laboratory is certified for the same analyte in more than one environmental program area, the laboratory must meet all the applicable certification requirements in addition to the payment of the fees.

c. In general, the department does not certify calculations. However, it is acceptable to report calculated results to clients and for regulatory reporting purposes.

d. Applicable fees shall be based on the type of analytical service provided as follows:

ANALYTICAL GROUP	REGULATORY PROGRAM & PARAMETERS ¹	FEE
Asbestos	SDWA	\$400
Basic Drinking Water	SDWA (includes total coliform bacteria, <i>E. coli</i> , heterotrophic plate count, nitrate, nitrite, & fluoride)	\$800
Basic Wastewater	CWA (includes BOD5, CBOD5, TSS, & ammonia)	\$400
Bacteria	CWA (includes total coliform, fecal coliform, and <i>E. coli</i>)	\$800
	SDWA (basic drinking water) & CWA combined	\$1,300
Dioxin	SDWA	\$800
Effluent Toxicity Testing	CWA	\$800
Inorganics, including metals	CWA metals, inorganic compounds, and physical characteristics (\$400 per analyte up to a maximum of \$1,600)	\$400 to 1,600
	SDWA (includes metals, ammonia, cyanide, fluoride, bromate, bromide, chlorite, total organic carbon & other inorganic chemicals)	\$1,600
	SW/CS	\$1,600
	CWA & SDWA combined	\$2,400
	CWA & SW/CS combined	\$2,400
	SDWA & SW/CS combined	\$2,400
	CWA, SDWA, and SW/CS combined	\$2,800
Radionuclides	CWA	\$400
	SDWA (includes gross alpha, gross beta, photon emitters, radium, strontium, tritium, & uranium)	\$400
	SDWA & CWA combined	\$650
Synthetic Organic Chemicals (SOC)	CWA	\$1,600
	SDWA	\$1,600
	SW/CS	\$1,600

	CWA & SDWA combined	\$2,400
	CWA & SW/CS combined	\$2,400
	SDWA & SW/CS combined	\$2,400
	CWA, SDWA, & SW/CS combined	\$2,800
Volatile Organic Chemicals (VOC)	CWA	\$1,600
	SDWA	\$1,600
	SW/CS	\$1,600
	CWA & SDWA combined	\$2,400
	CWA & SW/CS combined	\$2,400
	SDWA & SW/CS combined	\$2,400
	CWA, SDWA, & SW/CS combined	\$2,800
Underground Storage Tank Program Methods (UST)	OA1 & OA2 for UST, CWA, & SW/CS programs	\$1,600
	OA1, OA2, & Air Gas for UST, CWA, & SW/CS programs	\$2,000
Other analytes not included in the above categories	SDWA, CWA, UST, or SW/CS	\$400 per analyte

¹ CWA: Analysis of wastewater samples for the federal Clean Water Act.

SDWA: Analysis of drinking water samples for the federal Safe Drinking Water Act.

SW/CS: Analysis of water, soil, or solid samples for the solid waste or contaminated sites programs.

UST: Analysis of water and soil samples for the underground storage tank program.

e. Fees shall be paid by cashier's check, check, money order, credit card, electronic payment, or other means acceptable to the department, made payable to the Iowa department of natural resources laboratory certification program. Credit card or electronic payment may incur an additional fee. Purchase orders are not an acceptable form of payment. The fee shall be paid at least 60 days prior to the expiration date of any certification held by a laboratory. If a laboratory does not submit the application and fee by the expiration date, the laboratory is prohibited from conducting certified analytical tests until the application and fee are received by the department.

83.3(3) Reciprocity. Reciprocal certification of out-of-state laboratories by Iowa, and of Iowa laboratories by other states, is allowed. If the reciprocal state has a certification program for the area the lab is applying for in Iowa, the laboratory is required to obtain certification from their reciprocal state prior to receiving certification from Iowa. A laboratory must meet all Iowa

certification criteria and pay all applicable fees as listed in this chapter. Any laboratory that is granted reciprocal certification in Iowa using primary certification from another state or provider is required to report any change in certification status from the accrediting state or provider to the department within 15 days of notification. A copy of the assessment report including the laboratory's approved corrective actions must be submitted to the department within 15 days after it is approved by the resident state or third-party accreditation provider. A laboratory that loses primary certification, either in its resident state program or third-party accreditation program, will also immediately lose certification for the same program area and parameters in Iowa, pursuant to 83.6(6) "a"(8).

a. Out-of-state laboratories. Where an out-of-state laboratory has received an on-site audit within its own state, the fee for certification shall not be reduced if an on-site audit is not performed by Iowa.

b. Third-party accreditation. The department will accept third-party accreditation from a state NELAP accreditation authority. The laboratory must provide the most recent on-site assessment and approved corrective action report.

567—83.4(455B) Procedures for new laboratory certification or changes in certification.

Laboratories that wish to become certified to conduct testing for an analyte or a method after the deadline for initial certification has passed, and any laboratory seeking initial certification, shall follow the procedures specified in rule 567—83.5(455B) for laboratory recertification. For changes in certification, the relevant fee must accompany the application where appropriate. New laboratories with no history of generating compliance data in any program area will be issued a temporary certification for a period of up to six months after the initial on-site audit. The laboratory may be re-audited in person or a document review may be conducted at the discretion of the SHL auditor(s).

567—83.5(455B) Laboratory recertification. Laboratories shall be recertified every two years after initial certification. Applications for recertification must be on department form 542-0492

(June 2021) and must be submitted at least 60 days prior to the renewal date. Applications shall be accompanied by the nonrefundable fee specified in 83.3(2). To be recertified, laboratories must meet the following requirements.

83.5(1) *Approved methodology.* Laboratories must use methods promulgated or approved by the EPA or by the department. Notwithstanding an approval by the EPA, the department may use discretion in determining which methods may be used in Iowa. A laboratory may not analyze and report data from samples collected for an environmental program area until certified in that area. The laboratory shall submit supporting documentation such as calibration curves, MDL studies, LOQs, or other information upon request. The following are adopted by reference:

a. Drinking Water – 40 CFR Part 141 Subpart C (Monitoring and Analytical Requirements) as amended February 5, 2024; 40 CFR §141.74 (Filtration and Disinfection) as amended February 13, 2013; 40 CFR §141.89 (Control of Lead and Copper) as amended January 15, 2021; 40 CFR §141.131 (Disinfection By-Products) as amended February 13, 2013; 40 CFR §141.402 (Groundwater Rule) as amended February 13, 2013; 40 CFR §141.704 (Enhanced Treatment for Cryptosporidium) as amended June 29, 2009; 40 CFR §141.852 (Revised TCR) as amended February 26, 2014; 40 CFR Part 901 (PFAS) as amended through June 25, 2024; 40 CFR §143.4 (Secondary Regulations) as amended June 29, 2009.

b. Wastewater (nonpotable water) – 40 CFR Part 136, June 17, 2024.

c. Municipal biosolids (sewage sludge) – 40 CFR Part 136, as amended June 17, 2024, and Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846 Update VII) as amended July 30, 2021.

d. Solid waste and contaminated sites – Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846 Update VII) as amended July 30, 2021.

e. Underground storage tanks – Iowa Methods OA-1 and OA-2, December 10, 2019, and EPA method 8260 – Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (SW-846 Update VII) as amended July 30, 2021.

83.5(2) *Proficiency testing samples.* Certified laboratories must satisfactorily analyze PTs at least once every 12 months for each analyte by each method in each program area for which the laboratory intends to retain certification unless a PT sample is not available for the particular analyte, method, or program area. Results must be submitted electronically by the PT provider to the department at labcert@dnr.iowa.gov along with a statement of the method used once the study is published. The laboratory must maintain records of all PT samples including summary pages, explanations, and footnotes, pursuant to the recordkeeping requirements in 83.5(8) “b.”

a. Test requirements.

(1) PT samples shall be analyzed in accordance with the laboratory's routine standard operating procedures using the same quality control, acceptance criteria, and staff as used for the analysis of routine environmental samples. PT samples may not be analyzed multiple times for the purpose of averaging results to be reported to the PT provider.

(2) The PT sample shall be analyzed by a different analyst(s) or analytical team in following years, if there are multiple analysts in the laboratory.

(3) Once the results of a PT sample are submitted to the PT provider, remaining PT samples may be used as check samples or for demonstration of capability of analysts.

(4) Laboratories that receive unacceptable PT result(s) shall notify the department within 10 days of the unacceptable result(s). This does not include the required corrective action report.

b. Performance testing providers and acceptance limits. All PT samples must be obtained from a NELAP accredited provider. Performance test results shall be evaluated using criteria from NELAP field of proficiency tables except where noted otherwise. If there is a difference between the NELAP field of proficiency tables and federal rules, the rules shall prevail. Approved PT vendors and fields of proficiency tables may be found at nelac-institute.org.

83.5(3) *Notification of major changes.* Laboratories must notify the department, in writing, of major changes in critical or essential personnel, equipment, laboratory location, or other major

change that might alter or impair analytical capability. The department may issue a notice of violation based on cause.

a. Major equipment. Laboratories must notify the department 90 days, whenever possible, prior to installation of major equipment when the technology is not currently being utilized by the laboratory. This includes, but is not limited to, inductively coupled plasma spectrophotometers, mass spectrometers, gas chromatographs, liquid chromatographs, and continuous spectrophotometers. The installation of a new water bath or incubator does not need to be reported. If requested, the laboratory must submit the DOC to the department for review and approval prior to reporting compliance data using the new equipment.

b. Laboratory relocation. Laboratories must notify the department 90 days prior to a laboratory relocation. Laboratories must complete a DOC for each major piece of equipment once it has been relocated to the new laboratory. If requested, the laboratory must submit the DOC to the department for review and approval prior to reporting compliance data.

c. Personnel changes. Laboratories must notify the department 30 days prior to, whenever possible, but in no circumstance later than ten days after, the departure of critical or essential personnel. If requested, a DOC must be submitted to the department before the laboratory may report environmental data. DOC records for all staff must be maintained on file for review by an auditor. The loss of a critical staff person means the lab will not be able to analyze samples and must subcontract samples for a specific method(s) or program area(s) until another person is hired to perform the particular function or analysis and has completed an initial DOC. The loss of an essential staff person means that existing staff must undergo additional training before they can assume the role.

d. Laboratory shutdown. Laboratories must notify the department within five days if the laboratory has shut down due to a natural or man-made disaster, a cybersecurity incident, or other occurrence that renders the laboratory unable to perform analyses for Iowa clients.

e. Data quality issues. If a laboratory becomes aware that there are systematic data quality issues that affect the result(s) for one or more analytes, the laboratory must notify the department within five days. The laboratory must resolve the issues, submit a corrective action report, and submit an amended analytical report to the client(s) and the department within 30 days.

83.5(4) *Annual requirements.* Laboratories are required to perform the following updates on an annual basis. Documentation of these updates must be maintained in paper or electronic form, or a combination thereof, pursuant to the recordkeeping requirements in 83.5(8) “*b*” and shall be made available during the on-site audit, or if requested by the department.

- a.* Balance maintenance and weight verification;
- b.* Working thermometer verification;
- c.* Review the QA plan and document the date, reviewer, and any changes;
- d.* Review SOPs, and document the review and any changes to the SOPs. Confirm that QC requirements are performed with each analysis and that additional QC requirements are conducted monthly, quarterly, or annually as needed;
- e.* Review sample handling, preservation and storage requirements if they are not addressed in the SOP;
- f.* Conduct a continuing DOC for analysts;
- g.* Run and document calibration curves;
- h.* Perform annual PTs;
- i.* Review manufacturer equipment maintenance schedules, perform scheduled maintenance, and document the maintenance performed;
- j.* Replace and document the source of reference cultures used for microbiological analyses; and
- k.* Check spreadsheets annually to determine that calculated results have not changed due to software updates. Spreadsheet calculations may need to be checked manually.

In addition to the above requirements, it is recommended that the laboratory review the safety plan with all employees and conduct an internal audit annually.

83.5(5) *Site audits.*

a. SHL certification. The department has designated the SHL as its appraisal authority for laboratory certification. The SHL is responsible for attaining and maintaining laboratory certification for the SDWA program that is acceptable to the EPA. The SHL shall obtain accreditation from a state NELAP accreditation authority in all department program areas specified in 83.1(3), where available. The SHL shall forward audit reports to the department according to the time frame in 83.3(3). The SHL is not required to pay the fees for laboratory certification.

b. On-site audits. Laboratories must consent to a periodic site audit by the department or its designee, at least every two years. However, on-site audits may be conducted more frequently if the laboratory undergoes a major change that may alter or impair analytical capability, fails a PE sample analysis, or if the department questions an aspect of data submitted that is not satisfactorily resolved. Laboratories certified by reciprocity generally are not required to have an on-site audit conducted by the SHL. However, the department and the SHL reserve the right to conduct an on-site audit.

83.5(6) *Period of validity.*

a. Certification shall be valid for a period not to exceed two years from the date of issuance. Certification shall remain in effect until certification is either renewed or revoked, provided a laboratory has submitted a timely and complete application, and paid the appropriate fee.

b. Laboratories that have not submitted a timely and complete application and have not paid the appropriate fee may not report compliance data if their certification has expired.

83.5(7) *Reporting requirements.* Laboratories may not analyze or report sample results for any analyte, analytical series, or environmental program area until an initial certification status of certified or temporary has been granted by the department. Any data generated before

certification status is granted will be considered invalid for compliance purposes. A laboratory with provisional status may analyze and report analyses for compliance purposes. A certified laboratory may contract analyses to another certified laboratory. The responsibility lies with the primary certified laboratory contracting for services to verify that the secondary contracting laboratory is certified by the department and to ensure that reporting requirements and deadlines are met.

a. All program areas. Laboratories that generate data for clients must list all of the following elements on paper or electronic reports provided to clients.

- (1) Iowa certified laboratory number;
- (2) Laboratory name, address, and phone number;
- (3) Laboratory sample ID;
- (4) Client sample location ID;
- (5) Regulatory ID number, such as a permit number;
- (6) Date and time of sample collection;
- (7) Date and time of sample receipt and temperature (may be recorded on chain of custody, receiving sheet, or comments);
- (8) Sample collector name;
- (9) Date and time of analysis;
- (10) Analyst name;
- (11) Matrix;
- (12) Analyte;
- (13) Analytical method used;
- (14) The Reporting limit;
- (15) Analysis result;
- (16) Units of measure;
- (17) Subcontracting laboratory or laboratories, if used;

(18) Signature of signatory authorized to sign analytical reports; and

(19) Chain of custody records.

b. Additional reporting for all program areas.

(1) The use of whiteout to correct errors is strictly prohibited.

(2) Laboratory records and final reports shall be recorded in ink or electronically signed.

(3) A laboratory shall not express an analytical result as either:

1. Lower than the LOQ such as using the MDL; or

2. As zero, unless specifically required by rule.

(4) Laboratories reporting data for the purpose of a monthly operation report (MOR) or discharge monitoring report (DMR) must follow the instructions and use the templates specified by the program area(s).

c. Water supply program.

(1) Certified laboratories must report all analytical test results for all public water supply systems (PWS) using the electronic reporting system provided by the department. New laboratories shall be fully compliant with electronic data reporting requirements no later than 45 days after the laboratory begins analysis of compliance samples. If a PWS is required by the department to collect and analyze a sample for an analyte not normally required by 567—Chapters 41 and 43, the laboratory testing for that analyte must also be certified and report the results of that analyte to the department. A PWS may request that a laboratory add additional analytes for analysis after samples are received by the laboratory, but may not remove an analyte originally requested after the laboratory has initiated analysis of those analytes without written department approval. It is the laboratory's responsibility to correctly assign and track the sample identification number, the facility ID, and source/entry point data for all reported samples.

1. The following are examples of sample types for which data results must be reported:

- Routine: a regular sample that includes samples collected for compliance purposes at various sampling frequencies;

- Repeat: a sample that must be collected after a positive result from a routine or previous repeat total coliform sample, per 567—paragraph 41.2(1) “j.” Repeat samples must be analyzed by the same laboratory that analyzed the associated original routine sample;

- Confirmation: a sample that verifies a routine sample, normally used to determine compliance with a health-based standard;

- Special: a nonroutine sample, such as raw, plant, and troubleshooting samples, which cannot be used to comply with monitoring requirements assigned by the department;

- Maximum residence time: a sample collected at the maximum residence time location in the distribution system, usually for disinfection byproduct measurement; and

- Replacement: a sample that replaces a missed sample from a prior monitoring period resulting in a monitoring violation.

2. The following additional types of data must be reported to the department:

- MOR data that is required by the department to demonstrate compliance with public health standards; and

- Raw water sampling results specifically covered by 567—Chapters 40 to 43 for new surface water or groundwater sources, or reconstruction of groundwater sources.

3. The following are examples of data results that are not required to be reported by a laboratory to the department:

- Routine MOR data; or
- Distribution samples for the Total Coliform Rule 567—subrule 41.2(1) for water main repair or installation.

4. The sample type cannot be changed after submittal to the laboratory, without written department approval. The prescreening, splitting, or selective reporting of compliance samples is not allowed.

(2) Certified laboratories must report all analytical results to the PWS for which the analyses were performed.

(3) Analytical results must be reported to and received by the department by the seventh day of the month following the month in which the samples were analyzed.

(4) In addition to the monthly reporting of analytical results, the following results must be reported within 24 hours of the completion of the analysis, including data reduction, to the department by email or other acceptable method acceptable to the department, and to the PWS for which the analyses were conducted:

1. Results of positive routine coliform bacteria samples, and all repeat and follow-up samples; and

2. Results of any contaminant that exceeds public drinking water standards (maximum contaminant level, treatment technique, action level, or health advisory), and any subsequent confirmation samples.

Results available outside of routine business hours must be reported to the department's Environmental Emergency Reporting Hotline at 515.725.8694.

(5) If requested by the department, certified laboratories shall report their MDLs, LOQs, and any other pertinent information when reporting results for PWSs.

d. UST program. No additional information.

e. Wastewater program. No additional information.

f. Solid waste and contaminated site programs. No additional information.

83.5(8) Recordkeeping.

a. Appraisal authority. The laboratory certification program appraisal authority must retain the records for on-site laboratory audits and certification program reviews. The records must be maintained in an easily accessible manner for a period of six years, including the last two on-site audits. The records include correspondence used to determine compliance with the laboratory certification program requirements, and may include checklists, corrective action reports, final reports, certificates, PT study results, and any other related documents.

b. Laboratories. Laboratories shall retain laboratory records in paper or electronic form or a combination of both. Laboratory records include, but are not limited to, calibration curves; raw data; calculations and supporting data such as chromatographs; analytical results; lists of chemicals and equipment used; QA plans; SOPs; and PT results. Laboratory records shall be retained according to the following schedule:

- (1) Drinking water: microbiology and turbidity, five years; chemical, ten years; lead and copper rule, twelve years.
- (2) Wastewater: all analytes, three years. Federal DMRQA reports, three years.
- (3) Sewage sludge (municipal biosolids): all analytes, five years.
- (4) Solid waste and contaminated sites: all analytes, five years.
- (5) Underground storage tanks: all analytes, five years.

567—83.6(455B) Criteria and procedure for provisional, suspended, and revoked laboratory certification.

83.6(1) *Voluntary withdrawal of certification.* A laboratory may voluntarily withdraw certification for an analyte, a related analytical series, an environmental program area, or the entire laboratory at any time in lieu of receiving a downgraded certificate with a provisional, suspended, or revoked status.

83.6(2) *Provisional certification criteria.*

a. The department may downgrade certification to provisional status based on cause. The reasons for which a laboratory may be downgraded to provisionally certified status include, but are not limited to, the following list.

- (1) Failure to analyze a performance evaluation (PT) sample annually within acceptance limits;
- (2) Failure to notify the department within the time period specified in 83.5(3) of changes in essential personnel, equipment, laboratory facilities, or other major changes that might impair analytical capability;

(3) Failure to satisfy the department that the laboratory is maintaining the required standard of quality based on an on-site audit;

(4) Failure to report compliance data in a timely manner to the department or the client, thereby preventing timely compliance with environmental program regulations.

b. The department may assess an administrative penalty for a laboratory's failure to comply with the laboratory certification or reporting requirements.

83.6(3) *Provisional certification procedure.*

a. *Laboratory notification.* If a laboratory is subject to a downgrade to provisional status on the basis of 83.6(2), the department will notify the laboratory or owner in writing of the downgraded status. Certification may be downgraded to provisional for an analyte, a related analytical series, an environmental program area, or the entire laboratory.

b. *Reporting.* A provisionally certified laboratory may continue to analyze samples for compliance purposes.

c. *Right to appeal.* There is no appeal for this process, as it does not affect a laboratory's ability to analyze compliance samples and report to the department.

d. *Correction of deficiencies.*

(1) Once the department notifies a laboratory in writing that it has been downgraded to provisionally certified status, the laboratory must correct the problem within the following time frames, unless a written extension is obtained from the department. If the problem is not corrected, the laboratory is subject to suspension for that analyte, related analytical series, environmental program area, or the entire laboratory.

1. Unacceptable PT sample result within two months of notification.
2. Procedural deficiency within three months of notification.
3. Administrative deficiency within three months of notification.
4. Equipment deficiency within three months of notification.

(2) The laboratory shall submit a corrective action report(s), including documentation that demonstrates the laboratory has complied with the required corrective actions.

e. Reinstatement. Certification will be reinstated when the laboratory can demonstrate that all conditions for laboratory certification have been met to the department's satisfaction and that the deficiencies that caused provisional certification status have been corrected. The SHL may conduct an on-site audit to verify that corrective actions have been implemented.

83.6(4) *Suspended certification criteria.*

a. The department may downgrade certification to suspended status based on cause. The reasons for which a laboratory may be downgraded to suspended status include, but are not limited to, the following:

- (1) Failure to analyze a PT sample annually within acceptance limits;
 - (2) Failure to correct previously identified deficiencies, which resulted in provisional certification status, within the prescribed time frames of 83.6(3) "d"(1);
 - (3) Failure to satisfy the department that the laboratory is producing accurate data;
 - (4) Failure to use required analytical methodology for analyses submitted to the department;
- or

- (5) Repeated failure to report compliance data in a timely manner.

b. Administrative penalty. The department may assess an administrative penalty for a laboratory's failure to comply with the laboratory certification or reporting requirements.

c. Emergency certification suspension. The department may suspend certification without providing notice and opportunity to the laboratory to be heard if the department finds that the public health, safety, or welfare imperatively requires emergency action, and incorporates a finding to that effect in its administrative order, pursuant to 561—Chapter 7.

83.6(5) *Suspended certification procedure.*

a. Laboratory notification. If a laboratory is subject to downgrading to suspended status on the basis of 83.6(4), the department will notify the laboratory or owner in writing of its intent to

suspend certification in accordance with 561—Chapter 7. Certification may be suspended for an analyte, a related analytical series, an environmental program area, or the entire laboratory.

b. Reporting. Once the suspension is effective, a laboratory must immediately discontinue analysis and reporting of compliance samples, may not analyze or report samples for compliance with departmental standards, and must notify the laboratory's Iowa regulated clientele and other state certifying agencies of the change of the laboratory certification status within three days. Any results generated during the period of suspension may not be used for compliance purposes by the department.

c. Right to appeal.

(1) The laboratory may appeal this decision by filing a written notice of appeal and request an administrative hearing with the department director within 30 days of receipt of the notice of suspension of certification. Contested case procedures under 561—Chapter 7 shall govern administration of the appeal. The appeal must identify the specific portion(s) of the department action being appealed, be supported with a statement of the reason(s) for the challenge, and be signed by a responsible official from the laboratory.

(2) If no timely notice of appeal is filed, suspension is effective 30 days after receipt of the notice of suspension unless an emergency suspension order is in effect.

d. Correction of deficiencies.

(1) Once the department notifies a laboratory in writing that it has been downgraded to suspended status, the laboratory must correct the problem within the following timetable, unless a written extension is obtained from the department. If the problem is not corrected, the laboratory is subject to revocation for that analyte, related analytical series, environmental program area, or the entire laboratory.

1. Unacceptable PT sample result within two months of notification.
2. Procedural deficiency within three months of notification.
3. Administrative deficiency within three months of notification.

4. Equipment deficiency within three months of notification.

(2) The laboratory shall review the problems cited and, within the time period designated by the department, submit a corrective action report(s) including documentation that demonstrates the laboratory has complied with the required corrective actions. The department shall consider the adequacy of the response and notify the laboratory of its certification status and may follow up to ensure that corrective actions have been taken.

e. Reinstatement.

(1) Fee.

1. The laboratory will not be required to pay an additional fee if recertification affects an analyte or related analytical series, provided that:

- The laboratory is currently certified for other analytes, or
- A fee was paid within the two-year certification period for that related analytical series and the laboratory is certified for other parameters within that related analytical series.

2. A fee is required when suspension affects a related analytical series, effectively deleting that fee group from certification (such as all microbiological parameters in SDWA-MICRO), an environmental program area, or the entire laboratory. A fee is also required if an additional on-site audit is required.

(2) Certification will be reinstated when the laboratory can demonstrate that all conditions for laboratory certification have been met and that the deficiencies that caused the suspension have been corrected. This may include an on-site audit, successful analysis of unknown samples, or any other measure that the department deems appropriate.

83.6(6) *Revoked certification criteria.*

a. The department may revoke certification for cause. The reasons for which a laboratory's certification may be revoked include, but are not limited to, the following:

(1) Failure to correct deficiencies according to the time period specified in 83.6(5) "d"(1);

(2) Submission of a PT sample to another laboratory for analysis and reporting the data as its own;

(3) Falsification of data or other deceptive practices;

(4) Failure to use required analytical methodology for analyses submitted to the department;

(5) Failure to satisfy the department that the laboratory is maintaining the required standard of quality based on the on-site audit;

(6) Persistent failure to report compliance data to the regulated client or the department in a timely manner, thereby preventing compliance with state regulations and endangering public health;

(7) Subverting compliance with state regulations by actions such as changing the sample type for a noncompliance sample to a compliance sample after its submission to the laboratory, allowing compliance samples to be changed to other noncompliance sample types, or selective reporting of split sample results; or

(8) For laboratories certified through a reciprocal agreement with another state or third-party accreditation program, loss of certification in either the resident state or third-party accreditation program is cause for immediate revocation of certification in Iowa for the same parameters or program areas for which certification was lost.

b. The department may assess an administrative penalty for a laboratory's failure to comply with the laboratory certification or reporting requirements.

c. Emergency revocation. The department may revoke certification without providing notice and opportunity to the laboratory to be heard if the department finds that the public health, safety, or welfare imperatively requires emergency action, and incorporates a finding to that effect in its administrative order, pursuant to 561—Chapter 7.

d. Laboratory-requested revocation (withdrawal of certification). The department may revoke certification upon receipt of a written request by the certified laboratory for removal from the certification program.

83.6(7) *Revoked certification procedure.*

a. Laboratory notification. Except for the instance when the laboratory voluntarily requests revocation in 83.6(6) “d,” if a laboratory is subject to revocation on the basis of 83.6(6), the department will notify the party in writing of its intent to revoke certification in accordance with 561—Chapter 7. Certification may be revoked for an analyte, a related analytical series, an environmental program area, or the entire laboratory.

b. Reporting. Once revocation is effective, a laboratory must immediately discontinue analysis and reporting of compliance samples, shall not analyze or report samples for compliance with departmental standards, and must notify the laboratory’s Iowa-regulated clientele and other state certifying agencies of the change of the laboratory certification status within three business days of receipt of the final notice. Any results generated after revocation may not be used for compliance purposes by the department.

c. Right to appeal. When a laboratory requests revocation pursuant to 83.6(6) “d,” the revocation will be issued promptly and will be effective immediately with no appeal process.

(1) The laboratory may appeal this decision by filing a written notice of appeal and request for an administrative hearing with the department director within 30 days of receipt of the notice of revocation of certification. Contested case procedures under 561—Chapter 7 shall govern further administration of the appeal. The appeal must identify the specific portion(s) of the department action being appealed, be supported with a statement of the reason(s) for the challenge, and be signed by a responsible official.

(2) If no timely notice of appeal is filed within the 30-day time period, revocation is effective 30 days after receipt of the notice of revocation.

d. Reinstatement. A laboratory that has had its certification revoked may apply for certification in accordance with rule 567—83.3(455B) once the deficiencies have been corrected.

These rules are intended to implement Iowa Code sections 455B.113 through 455B.115.

Iowa Department of Natural Resources
Environmental Protection Commission

Decision Item (**indicates proposed consent item*)

***34. Chapter 90, “Clean Water State Revolving Fund”; Chapter 91, “Criteria for Rating and Ranking Projects for the Water Pollution Control State Revolving Fund”; Chapter 92, “Clean Water State Revolving Fund”; and Chapter 93, “Nonpoint Source Pollution Control Set-Aside Programs” – Final Rules**

The Commission is requested to approve the Adopted and Filed rule to rescind and replace Chapter 90 and to rescind Chapters 91, 92, and 93. This rulemaking is the result of Water Quality Bureau’s Executive Order 10 rule review.

Basic Intent of Rule: Former Chapters 90, 91, 92, and 93 governed the Clean Water State Revolving Fund (CWSRF). These chapters are rescinded and replaced by a new Chapter 90 titled, “Clean Water State Revolving Fund.” The CWSRF program provides low interest loans to communities and landowners to assist in the construction of Publicly Owned Treatment Works and other Water Pollution Control projects. This chapter has been reviewed and edited consistent with Executive Order 10. New Chapter 90 consolidates into one chapter all definitions, forms, general project and program administration rules, criteria for Intended Use Plan content and publication, criteria for ranking water pollution control projects, and criteria for nonpoint source project program eligibility.

NOIA: The Notice of Intended Action (NOIA) was approved by the Commission at its November 2024 meeting. The NOIA was published in the Iowa Administrative Bulletin on January 8, 2025 as ARC 8637C. Two public hearings were held on February 5, 2025 and February 6, 2025.

Changes from NOIA: No comments were received during the public comment period. There were two attendees from the public that joined the public hearings. The Final rule is substantially identical to the NOIA. Minor changes were made to correct document references.

Effective Date of Final Rule June 18, 2025

Theresa Enright, State Revolving Fund Coordinator
Water Quality Bureau
Environmental Services Division
Meeting Date: April 15, 2025

Attached: Chapters 90-93 – Final rule

ENVIRONMENTAL PROTECTION COMMISSION[567]

Adopted and Filed

The Environmental Protection Commission (Commission) hereby rescinds Chapter 90, “Scope of Title—Definitions—Forms” and adopts new Chapter 90, “Clean Water State Revolving Fund”; and rescinds and reserves Chapter 91, “Criteria for Rating and Ranking Projects for the Water Pollution Control State Revolving Fund,” Chapter 92, “Clean Water State Revolving Fund,” and Chapter 93, “Nonpoint Source Pollution Control Set-Aside Programs,” Iowa Administrative Code.

Legal Authority for Rulemaking

This rulemaking is adopted under the authority provided in Iowa Code section 455B.299.

State or Federal Law Implemented

This rulemaking implements, in whole or in part, Iowa Code section 455B.299 and the Clean Water Act (33 U.S.C. §1251 et seq.).

Purpose and Summary

New Chapter 90 combines four existing chapters (specifically, Chapters 90, 91, 92, and 93) that govern the Clean Water State Revolving Fund (CWSRF) into one. Chapters 91, 92, and 93 are rescinded.

New Chapter 90 now provides the definitions, forms, general project and program administration rules, criteria for Intended Use Plan content and publication, criteria for ranking water pollution control projects for all CWSRF programs, and criteria for nonpoint source project program eligibility.

These four chapters were reviewed and edited consistent with Executive Order 10. Combining them does the following: (1) consolidates and clarifies redundant information provided in the statutory authority, purpose, scope of title and general policy sections of each

chapter; (2) deletes unused definitions; (3) updates or deletes out-of-date process descriptions; and (4) consolidates all rules and administrative processes associated with the CWSRF nonpoint program into one chapter.

Public Comment and Changes to Rulemaking

Notice of Intended Action for this rulemaking was published in the Iowa Administrative Bulletin on January 8, 2025, as ARC 8637C.

Two public hearings were held. The first public hearing was held on February 5, 2025 from 9:00 AM to 10:00 AM virtually via Zoom. The second public hearing was held on February 6, 2025 from 10:00 AM to 11:00 AM virtually via Zoom.

Two people attended the first public hearing, and neither provided public comment. There were no members of the public in attendance for the second public hearing. Additionally, no public comments were received during the public comment period.

This final rule is substantially identical to the Notice of Intended Action. Minor changes were made to correct document references.

Adoption of Rulemaking

This rulemaking was adopted by the Environmental Protection Commission on April 15, 2025.

Fiscal Impact

This rulemaking has no fiscal impact to the State of Iowa.

Jobs Impact

After analysis and review of this rulemaking, no impact on jobs has been found.

Waivers

Any person who believes that the application of the discretionary provisions of this rulemaking would result in hardship or injustice to that person may petition the Commission for a waiver of the discretionary provisions, if any, pursuant to 567—Chapter 13.

Review by Administrative Rules Review Committee

The Administrative Rules Review Committee, a bipartisan legislative committee which oversees rulemaking by executive branch agencies, may, on its own motion or on written request by any individual or group, review this rulemaking at its [regular monthly meeting](#) or at a special meeting. The Committee's meetings are open to the public, and interested persons may be heard as provided in Iowa Code section 17A.8(6).

Effective Date

This rulemaking will become effective on June 18, 2025.

The following rulemaking action is adopted:

ITEM 1. Rescind 567—Chapter 90 and adopt the following **new** chapter in lieu thereof:

TITLE VII

WATER POLLUTION CONTROL STATE REVOLVING FUND

CHAPTER 90

CLEAN WATER STATE REVOLVING FUND

567—90.1(455B) Statutory authority, purpose, and general policy.

90.1(1) *Statutory authority.* The department of natural resources and the Iowa finance authority are jointly designated to administer the clean water state revolving fund (CWSRF). Authority to administer this fund is provided by Iowa Code sections 455B.291 through 455B.299 and the federal CWA. Section 603(c) of Title VI of the CWA allows the use of state revolving funds to assist in the construction of POTWs and WPC projects.

90.1(2) *Purpose.* This chapter provides the definitions, forms, general project and program administration rules, criteria for loan eligibility, and criteria for rating and ranking WPC projects for the CWSRF point source and NPS pollution control programs. The selection criteria, methods for selecting projects or programs for loans, and the extent to which these policies must be described in the IUP are required by 40 CFR §35.3150.

90.1(3) *Administration.* The department, in conjunction with the authority, has been delegated the responsibility of administering the CWSRF program described in this chapter and the DWSRF program described in 567—Chapter 44. The director may coordinate with the authority under the terms of an interagency agreement entered into pursuant to Iowa Code chapter 28E.

90.1(4) *Program funding.* The commission shall set funding targets for point source and NPS activities and adjust the fundable project list to ensure that the short- and long-term goals of the IUP are achieved. It is the intent of the commission to reserve a portion of the CWSRF funds to provide for the purpose of making low-interest loans for NPS WPC projects. The amount for each NPS program will be determined in the IUP. Loans of up to 100 percent of the eligible costs of WPC projects will be made available pursuant to these rules, rules established by the authority, and Title VI of the CWA.

90.1(5) *State capitalization grant.* The CWA authorizes the EPA to offer capitalization grants to states for use in a revolving fund loan program. A portion of the capitalization grant, as allowed by Title VI of the CWA, will be used to administer the CWSRF program.

90.1(6) *Federal funding coordination.* Projects may use CWSRF funds to complete the financing of projects partially funded by other federal programs.

90.1(7) *Project determination.* A project must comply with this chapter to be eligible for a CWSRF loan. The department shall use a priority rating system to rate eligible projects for funding. An eligible project may be either a point source project or an NPS project or activity.

CWSRF assistance will be available to projects in priority order. Additional rating criteria for NPS activities will be established in the IUP and circumstances for use are described in 90.14(1). Projects or activities qualifying for CWSRF assistance shall be identified in the IUP on the state PPL, developed pursuant to this chapter, and only those projects or activities may be considered fundable. WPC projects that provide the best water quality improvements or protection based on the rating system and are ready to proceed are to be funded.

90.1(8) *Decisions.* Department decisions are final unless the recipient files a written petition for review with the director. The petition must be addressed to the director and clearly state the decision in question and the basis for the requested review. The recipient has the right to appeal a decision to the commission pursuant to Iowa Code chapter 17A or to the state court.

90.1(9) *Public participation.* The public has an opportunity annually, and quarterly as needed, to comment on both the fundable list and the short- and long-term goals of the IUP.

567—90.2(455B) Definitions, abbreviations, and forms.

90.2(1) *Definitions.* In addition to the definitions and references in 567—Chapter 40, the following definitions are applicable to this chapter:

“Comprehensive Nutrient Management Plan” or *“CNMP”* means a conservation system that is unique to an AFO. A CNMP is a grouping of conservation practices and management activities which, when implemented as part of a conservation system, will help to ensure that both production and natural resource protection goals are achieved. A CNMP incorporates practices to use animal manure and organic by-products as beneficial resources. A CNMP addresses natural resource concerns dealing with soil erosion, manure, and organic by-products and their potential impacts on all natural resources including water and air quality, which may derive from an AFO. A CNMP is developed to assist an AFO owner/operator in meeting all applicable local, tribal, state, and federal water quality goals or regulations. For

nutrient-impaired stream segments or water bodies, additional management activities or conservation practices may be required by local, tribal, state, or federal water quality goals or regulations.

“CWA” or “*Clean Water Act*” means the federal Water Pollution Control Act effective July 1, 2024, 33 U.S.C. §1251 et seq.

“CWSRF” means the clean water state revolving fund, also known as the water pollution control works revolving loan fund as defined in Iowa Code section 455B.291.

“*Eligible entity*” means a person eligible under the provisions of the CWA, the SDWA, and the commission rules to receive loans for projects from either of the revolving loan funds.

“*Eligible project*” means, in the context of WPC facilities, the acquisition, construction, reconstruction, extension, equipping, improvement, or rehabilitation of any works and facilities useful for the collection, treatment and disposal of sewage and industrial waste in a sanitary manner including treatment works as defined in Section 212 of the CWA, and including construction and undertaking of NPS WPC projects and related development activities authorized under the CWA. Projects for the primary purpose of speculative growth are considered ineligible.

“*Energy conservation*” means renewable energy construction projects such as wind, solar, etc.

“*Facility plan*” means a report certified by a professional engineer licensed to practice in Iowa and prepared in conformance with Chapter 1 of the IWFDS. This report shall include an evaluation of the facility, identify problems, provide alternatives and a recommended solution, outline financing options and project timeline, and address other applicable issues ensuring the viability of the project and the facility to meet project goals and discharge requirements.

“*Fiscal year*” means the state fiscal year starting July 1 and ending June 30.

“Intended use plan” or *“IUP”* means a plan identifying the intended uses of funds available for loans in the WPC state revolving fund for each fiscal year as described in Section 606(c) of the CWA.

“IWFDS” means the Iowa Wastewater Facilities Design Standards, effective June 2025, located on the department’s website at www.iowadnr.gov.

“Municipality” means the city, county, sanitary district, state agency, or other governmental corporation or body empowered to provide sewage collection and treatment services, or any combination of two or more such governmental bodies, or corporations acting jointly, in connection with a project.

“New AFO” means an animal feeding operation that meets at least one of the following criteria:

1. It was constructed after January 1, 2006.
2. Animal production at the site was resumed after being discontinued for at least 12 months.
3. Production facilities were altered in order to house a different animal species than was produced previously.

“Nontraditional project” means a project whose primary purpose is not to protect or improve water quality. A secondary purpose of the project does include water quality improvement or protection.

“NPS” means nonpoint source pollution which does not have a single point of origin and/or is not introduced into a receiving stream from a specific outlet. NPS pollution sources are diffuse and may be a result of runoff, precipitation, atmospheric deposition, drainage, seepage, or hydrological modification.

“POTW” means publicly owned treatment works as defined in Section 212 of the CWA.

“Private sewage disposal system” or *“PSDS”* is defined in 567—subrule 69.1(2). For the purposes of this chapter, “PSDS” means the same as “onsite wastewater treatment system” or “onsite system.”

“Project category” means identified categories of projects that comprise mutually exclusive classes of facilities. Each category and the types of projects included in the category are listed below.

1. Category I. Secondary treatment—wastewater treatment costs necessary to meet the minimum level of treatment defined by the CWA.

2. Category II. Advanced treatment—wastewater treatment costs necessary to attain a level of treatment that is more stringent than standard secondary treatment or to produce a significant reduction in nonconventional or toxic pollutants present in the treated wastewater.

3. Category III–A. Infiltration/inflow (I/I) correction—costs for correction of sewer system I/I problems. Infiltration includes controlling the penetration of water into a sanitary or combined sewer system from the ground through defective pipes or manholes. Inflow includes controlling the penetration of water into the system from drains, storm sewers, and other improper entries. This category also includes costs for preliminary sewer system analysis and detailed sewer system evaluation surveys.

4. Category III–B. Sewer replacement/rehabilitation—costs for the reinforcement or reconstruction of structurally deteriorating sanitary or combined sewers. The corrective actions must be necessary to maintain the structural integrity of the system. Rehabilitation is considered to be extensive repair of existing sewers (collector and interceptor) beyond the scope of normal maintenance programs, when sewers are collapsing or structurally unsound. “Replacement” is the construction of parallel sewer or sewers that perform the function of existing sewers where existing sewers are to be abandoned. Sewer work associated with I/I

elimination is considered a Category III–A need. Relief sewers do not fall within this category since they are newly constructed sewers with a function beyond that of existing sewers.

5. Category IV–A. New collector sewers and appurtenances—costs of new pipes used to collect and carry wastewater from a sanitary or industrial wastewater source to an interceptor sewer that will convey the wastewater to a treatment facility. The collection system is considered as those public sewers which have a principal purpose of providing service for individual users in existing residential and commercially developed areas to enable collection of wastewater in a centralized system. Pumping stations, force mains, and other related appurtenant structures are considered part of the collection system if their primary mechanical function relates to the collection system.

6. Category IV–B. New interceptor sewers and appurtenances—costs for constructing new interceptor sewers and pumping stations to convey wastewater from collection sewer systems to a treatment facility or to another interceptor sewer. Relief sewers are included in this category where additional sewer capacity is required to accommodate all wastewater in a separate sewer system to ensure that it is transported to a wastewater treatment plant for adequate treatment, and to prevent public health hazards within the service area. Relief sewers may include parallel sewers. Pumping stations and force mains and other related appurtenant structures are considered in this category if their primary mechanical function relates to the interceptor’s principal purpose. Equalization basins are included in this category.

7. Category V. Combined sewer overflow (CSO) correction—costs to prevent or control the periodic discharges of mixed stormwater and untreated wastewater (CSOs) that occur when the capacity of a sewer system is exceeded during a wet weather event. This category does not include costs for overflow control allocated to flood control, drainage improvement, or the treatment or control of stormwater in separate storm systems.

8. Stormwater management program categories. The following categories include costs to address the described stormwater management program activities:

- Category VI. Gray infrastructure—costs to plan and implement structural and nonstructural measures to control the runoff of water resulting from precipitation (stormwater) with the purpose of improving and protecting water quality. This category includes controlling stormwater pollution from diffuse sources by reducing pollutants in runoff from commercial and residential areas served by the storm sewer, detecting and removing illicit discharges and improper disposal into storm sewers, monitoring pollutants in runoff from industrial facilities that flow into municipal separate storm sewer systems, and reducing pollutants in construction site runoff discharged to municipal separate storm sewers.

- Category VI–A. Stormwater conveyance infrastructure—planning, design, and construction costs associated with stormwater conveyances including pipes, inlets, roadside ditches, and other similar mechanisms. These costs will be eligible if they are combined with practices described in Category VI–B or VI–C in order to achieve water quality protection or improvement.

- Category VI–B. Stormwater treatment systems—planning, design, and construction costs associated with stormwater treatment including wet ponds, dry ponds, manufactured devices, and other similar means. These costs will be eligible if these activities are implemented in order to achieve water quality protection or improvement.

- Category VI–C. Green infrastructure—planning, design, and construction costs associated with low-impact development and green infrastructure, such as bioretention, constructed wetlands, permeable pavement, rain gardens, green roofs, cisterns, rain barrels, vegetated swales, or restoration of riparian buffers and flood plains. Projects in this category can be both publicly owned and privately owned.

- Category VI–D. General stormwater management—costs associated with implementing a stormwater management program, such as geographic information systems or tracking systems, equipment such as street sweepers and vacuum trucks, stormwater education program startup costs, and stormwater management plan development.

9. NPS project categories. The following categories include costs to address NPS project categories with certain activities, as described:

- Category VII–A. NPS control: agriculture (cropland)—costs associated with agricultural activities related to croplands, such as plowing, pesticide spraying, irrigation, fertilizing, planting, and harvesting.

- Category VII–B. NPS control: agriculture (animals)—costs associated with agricultural activities related to animal production, such as confined animal facilities, open feedlots, and grazing.

- Category VII–C. NPS control: silviculture—costs associated with forestry activities such as removal of streamside vegetation, road construction and use, timber harvesting, and mechanical preparation for tree planting.

- Category VII–E. NPS control: groundwater protection (unknown source)—costs associated with groundwater protection needs such as wellhead and recharge protection activities.

- Category VII–F. NPS control: marinas—costs associated with boating and marinas, such as poorly flushed waterways, boat maintenance activities, sewage discharge from boats, and the physical alteration of shoreline, wetlands, and aquatic habitat during the construction and operation of marinas.

- Category VII–G. NPS control: resource extraction—costs associated with mining and quarrying activities.

- Category VII–H. NPS control: brownfields—costs associated with abandoned industrial sites that might have residual contamination (brownfields).

- Category VII–I. NPS control: storage tanks—costs associated with tanks designed to hold gasoline, other petroleum products, or chemicals. The tanks may be located above or below ground level.

- Category VII–J. NPS control: landfills—costs associated with sanitary landfills.

- Category VII–K. NPS control: hydromodification—costs to address the degradation of water resources as a result of altering the hydrological characteristics of noncoastal waters, including channelization and channel modification, dam, and streambank and shoreline erosion. Work involving wetland or riparian area protection or restoration is included in this category.

10. Category X. Recycled water distribution—costs associated with conveyance of treated wastewater that is being reused (recycled water), including associated rehabilitation/replacement needs.

11. Category XII. Decentralized sewage treatment—costs associated with the rehabilitation or replacement of PSDSs or clustered (community) systems. This category also includes the treatment portion of other decentralized sewage disposal technologies.

“Project completion” means the date the final loan certificate is signed by the recipient.

“Sponsor project” is defined in Iowa Code section 455B.199.

“State project priority list” or *“PPL”* means the list of projects in priority order that may qualify for CWSRF loan assistance.

90.2(2) Abbreviations. In addition to the abbreviations in 567—Chapter 40, the following abbreviations are applicable to this chapter.

Abbreviation	Meaning
AFO	animal feeding operation

BMP	best management practice
EPA	U.S. Environmental Protection Agency
GNS	general nonpoint source
LWQP	livestock water quality linked-deposit program
LWWP	local water protection project linked-deposit program
MMP	manure management plan
NRCS	USDA Natural Resource Conservation Service
NMP	nutrient management plan
OSWAP	onsite wastewater assistance linked-deposit program
SWCD	soil and water conservation district
USDA	U.S. Department of Agriculture
WPC	water pollution control

90.2(3) *Forms.* All CWSRF forms may be obtained from the department's state revolving fund section and may be downloaded from www.iowasrf.com. Recipients of assistance shall comply with the applicable department rules.

567—90.3(455B) IUP preparation.

90.3(1) *Development.* The department shall prepare an IUP at least annually and on a quarterly basis as needed. The IUP will be subject to public participation and approved by the commission.

90.3(2) *Notification.* A public hearing process is included in the IUP adoption process to provide opportunity for public participation. A notice is published that explains the purpose of the IUP and how additional information may be obtained. All materials relating to the IUP will be posted at www.iowasrf.com.

90.3(3) *Comments.* Comments regarding the proposed IUP will be accepted during the notice period, at the public hearing, and in writing. After evaluation of all pertinent comments,

the IUP will be revised, if necessary, and recommended for commission approval. Subsequent approval by the commission will establish the IUP to be used for loan assistance.

567—90.4(455B) IUP contents. The IUP will identify the anticipated uses of loan funds available for that fiscal year and will include the following information:

90.4(1) *State PPL.* The state PPL contains the projects eligible for CWSRF direct loans. The PPL includes projects scheduled for loans from funds available during the fiscal year. Projects will be considered in priority order for placement on the fundable list.

a. The department will consider the following in developing the list of fundable projects for the IUP:

- (1) How the project conforms to the short- and long-term goals of the CWSRF;
- (2) The priority rating of the POTW project;
- (3) Whether a POTW project will be ready to proceed on a schedule consistent with time requirements for outlay of funds;
- (4) Whether the proposed project addresses the need upon which the eligible entity's priority is based;
- (5) The funds available, department priorities, and the department's administrative capacity; and
- (6) The applicant's conformance to process guidelines provided by the department.

b. The PPL will be reviewed at least annually or quarterly as needed to update schedules and project cost estimates.

90.4(2) *Priority for loan assistance.* A fundable project must be technically and administratively complete. A community is responsible for complying with the technical procedures for facility planning and preparation of plans and specifications, including department approval of those documents.

90.4(3) *Notification of revisions.* The department will notify, in writing, all communities that are removed from or placed on an approved fundable list based on revisions.

90.4(4) *Special considerations.* Exemptions to the point source rating criteria may be considered by the department, and funding variances may be granted by the commission for projects that have unique or unusual circumstances but that do not logically fit into the criteria. The commission may grant interest rate reductions or other favorable loan incentives to applicants that sponsor a project that improves the quality of the water in the watershed where a city water or wastewater facility is located.

90.4(5) *Additional contents.* The IUP will also include:

- a. The long- and short-term goals of the CWSRF;
- b. Information on the types of activities to be supported by the CWSRF. The IUP will identify requests for planning and design loans and funds to be directed to NPS programs;
- c. Assurances and specific proposals on how the state intends to meet the requirements of the operating agreement between the state of Iowa and the EPA;
- d. Loan interest rates and terms, interest rates and terms for linked deposit programs, and loan origination fees and servicing fees; and
- e. The method to be used by the department if the IUP is amended.

567—90.5(455B) Point source project procedures.

90.5(1) *Application forms.* An applicant shall complete the application for placement on the IUP, provide documentation on the project, and submit the application package to the department. Forms may be downloaded from www.iowasrf.com.

90.5(2) *General requirements.* The following items must be included in a CWSRF application for point source projects:

- a. A facility plan that conforms to the IWFDS and is certified by a professional engineer licensed to practice in Iowa;

- b. A schedule for submission of plans and specifications for the project; and
- c. A project construction schedule.

90.5(3) *Timing.*

a. POTW project applications received by the department for eligible projects will be scored using the rating criteria in 567—90.7(455B) and will be placed on the PPL. Applications may be submitted on an ongoing basis and will be reviewed in accordance with the schedule in the IUP.

b. Applications received after the IUP is drafted will not be placed on the PPL but will be considered for loan assistance when the next IUP is prepared.

90.5(4) *Project initiation conference.* The department may require an applicant or their representative to meet with the department. If required, the eligible applicant's official representative (and usually the applicant's consultant) will meet with the department to discuss:

- a. CWSRF program policies, procedures, and guidelines;
- b. Allowable costs;
- c. Wastewater treatment alternatives and technologies;
- d. Environmental impacts and review considerations;
- e. Public participation;
- f. Scheduling; and
- g. Other information as needed.

90.5(5) *Review criteria for point source projects.* The department shall review CWSRF applications from eligible applicants and verify the following items:

- a. The project is on the PPL;
- b. The applicant has prepared an adequate facility plan report;

c. The project will be in conformance with any applicable areawide water quality management plans;

d. The applicant has adopted or will adopt an acceptable user charge system;

e. The applicant has demonstrated its ability to provide the necessary legal, institutional, managerial and financial capability to ensure adequate construction, operation and maintenance. If the department has reasonable grounds to believe that an applicant's wastewater treatment facilities are not viable, the department may require the applicant to submit management and financial plans as prescribed in Iowa Code section 455B.174; and

f. The applicant has provided an acceptable project schedule for project initiation and completion.

90.5(6) *Allowable and unallowable costs.* Allowable costs shall be limited to those eligible costs deemed necessary, reasonable, and directly related to the efficient completion of the project. Unallowable costs include, but are not limited to, the following:

a. Cost of service lines and in-house plumbing;

b. Administrative costs of the recipient;

c. Purchase of vehicles and tools;

d. Land purchase and easement or rights-of-way costs, except as authorized under the CWA;

e. Pretreatment program development costs, unless required by federal regulations; and

f. Operation and maintenance costs.

90.5(7) *Audit and inspection.* The recipient shall provide access at all times for the department, the authority, the state auditor, and the EPA Office of the Inspector General to all project records and documents for inspection and audit purposes for a period of three years after the date of last loan payment. The same access to the project site(s) shall be provided for inspection purposes.

567—90.6(455B) Point source project requirements. All wastewater treatment system projects receiving assistance from the CWSRF which entered into binding loan commitments on or after October 1, 1994, and did not initiate construction of the projects in whole or in part prior to October 1, 1994, shall meet the following requirements:

90.6(1) Planning. The planning phase of a project consists of those necessary plans and studies that directly relate to a facility's need to comply with enforceable requirements of the CWA and state statutes. This phase consists of a systematic evaluation of feasible alternatives considering the unique demographic, topographic, hydrologic, and institutional characteristics of the planning area. Facilities planning must support selection of the proposed alternative. The planning phase must include the following:

a. Facility plan. The facility plan must contain a description of the proposed project and the complete system of which it is a part. The facility plan must be prepared in accordance with Chapter 1 of the IWFDS and meet the applicable provisions of this subrule.

b. Environmental review. Loan recipients shall conduct environmental review of projects using procedures in 40 CFR Part 6, September 19, 2007, as a part of facility planning. An applicant should work with the department as early as possible in the facilities planning process to determine if the project qualifies for a categorical exclusion from 40 CFR Part 6 or whether a finding of no significant impact is required. In conjunction with the facility planning process as described in 40 CFR §35.2030(c), December 19, 2014, a potential applicant may request formal determination under 40 CFR Part 6. All of 40 CFR Part 6, September 19, 2007, pertaining to Procedures for Implementing the Requirements of the Council on Environmental Quality of the National Environmental Policy Act, is hereby adopted by reference and incorporated herein. However, all references to the EPA as performing acts or reviews shall be substituted with references to the department for the purposes of this chapter.

90.6(2) Point source project design and construction. The project design and construction phase must include all of the following:

a. Recipient capability. The recipient must demonstrate to the department that it has the legal, institutional, managerial, and financial capability to ensure adequate construction, operation and maintenance of treatment works.

b. Disadvantaged business enterprise (DBE). The recipient must comply with the requirements of DBE participation found in 40 CFR Part 33, May 19, 2022.

c. Site. When it is necessary to acquire real property as part of the project and within the project period, the recipient may be required to submit documentation of the acquisition, including the legal description, the date the property was acquired, and an appraisal report from a qualified appraiser. If required, submittal to the department shall occur prior to contract award.

d. Project changes. Prior to the final loan disbursement, the recipient must submit to the department for approval all modifications to the project, including changes to the plans and specifications and changes in the contract (change orders). The recipient is responsible for any costs or actions necessary should the changes be implemented prior to departmental review and subsequently found to be unapprovable.

e. State inspections. Department personnel shall have the right to examine all construction aspects of the project, including materials and equipment delivered and stored on site for use on the project.

567—90.7(455B) Point source project priority rating system. The rating criteria consider the use and classification of the receiving waters, water quality of the receiving waters, groundwater protection, project category, project purpose, and a tiebreaker. Priority ranking for POTW projects shall be based on the total points awarded for all the categories; the greater

the total number of points, the higher the ranking. For POTW projects, the ranking will be done when the IUP is prepared. The tiebreaker category will be used when necessary.

90.7(1) *Use classification of receiving waters.* This category addresses the receiving water that is impacted or potentially impacted by the existing situation and that would be improved or protected by the proposed project. Points for sludge stabilization, sewers, and lift station projects are based on the designated use of the waters that receive or could receive the effluent discharge. Points will be awarded and be cumulative for all designated use classifications of the receiving water.

Use and Classification of Receiving Waters	Points
Outstanding Iowa waters	45
Class A1	50
Class A2	45
Class A3	50
Class C	40
Class B(CW1)	50
Class B(CW2)	30
Class B(WW1)	30
Class HH	30
Class B(WW2)	25
Class B(WW3)	20
Class B(LW)	35

90.7(2) *Water quality of receiving waters.* This category addresses the water quality in the receiving stream and whether or not the water has been designated as impaired for one or more uses. Points will be awarded for both A and B in the table below and then totaled for this category.

a. Bodies of water that are impaired by pollutants and probable pollutant source categories for the impairments are identified in the CWA Section 303(d) list of waters in the integrated report of impaired waters status. Projects primarily impacting these waters will be awarded points if the water body that receives or could receive the wastewater discharge is included on the Section 303(d) list and the probable pollutant source is a point source.

b. Waters are also identified in the CWA Section 305(b) report on their use attainment status. Projects primarily impacting these waters are awarded points depending on the use impairment identified for the water body that receives or could receive the wastewater discharge. If no use impairment is identified, indicating the water was not assessed, the partially supported status points will be awarded.

Indication of Water Quality	Points
A. Integrated Report overall category (score only overall category)	
4a, 4b, or 5a	15
5b or 5p	10
4c or 4d	5
B. Use support level of designated uses (score all applicable uses) Class A, Class B, Class C, Class HH	
Fully supported	5
Not supported	15
Not assessed	7

90.7(3) *Protection of groundwater resources.* This category considers the use of the aquifer affected by the project.

Groundwater Category	Points
Wellhead protection area for public water supply	40
Unconfined aquifer that serves as a drinking water source	20
Other groundwater protection	10

90.7(4) *Project category.* For this category, points are based on the project's type and its relative impact on public health and the environment. Points will be awarded for the primary project category.

Centralized Wastewater Treatment Project Category	Points
Category I. Secondary treatment	40
Category II. Advanced treatment	50
Category III–A. Infiltration/inflow correction	30
Category III–B. Sewer replacement/rehabilitation	30
Category IV–A. New collector sewers and appurtenances	10
Category IV–B. New interceptor sewers and appurtenances	20
Category V. CSO correction	40
Stormwater Project Category	
Category VI–A. Gray infrastructure—only projects where sanitary sewer or treatment require it	30
Conservation Project Category	
Category X. Water conservation (water reuse)	10
Other Category	
Energy conservation (renewable energy)—solar, wind, etc.	10
Refinance of existing projects that meet CWSRF eligibility criteria	5

90.7(5) *Project purpose.* For this category, points are based on the project's purpose and expected outcome. Points will be awarded only for the primary purpose.

Project Purpose	Points
Allows facility to meet new water quality standards	50
Protects or restores the physical, chemical, and biological integrity of water resources at a specific site	50
Reduces the loading of a parameter that has been identified as an impairment to the receiving water or watershed as identified through the total maximum daily load (TMDL) process	40
Provides regional consolidation in wastewater treatment or system management	30
Brings facility into compliance with a National Pollution Discharge Elimination System (NPDES) permit or other administrative or judicial enforcement action as may be required by the department or the EPA	25
Eliminates or remediates a source of groundwater pollution	20
Meets existing or reasonable future needs of the community in order to maintain compliance with an NPDES permit	15
Provides operational reliability improvements, apart from projects addressing compliance and enforcement	10

90.7(6) *Total points.* Total points are calculated using the following formula: Total Points = Use Classification + Water Quality or Groundwater Protection + Project Category + Project Purpose

90.7(7) *Tiebreaker.* Several projects may receive the same total points on the fundable list. If sufficient loan funds are not available to fund the projects, ties will be broken by determining which project has the highest score in each category in the following order:

Use Classification of Receiving Streams	Highest
Water Quality of Receiving Streams (a+b)	
Groundwater Protection	
Project Category	
Project Purpose	Lowest

567—90.8 and 90.9 Reserved.

567—90.10(455B) NPS project procedures—onsite wastewater system assistance linked-deposit program (OSWAP). The purpose of the OSWAP is to assist homeowners to rehabilitate or improve existing PSDSs.

90.10(1) *Eligibility conditions and restrictions.* Assistance under the OSWAP shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF.

a. Location restrictions. Assistance is available for the improvement or rehabilitation of PSDSs serving homes that are not connected to a POTW.

b. County eligibility. Assistance shall be provided only for systems located in counties that have an environmental health program that meets the requirements of 567—Chapter 69 for PSDSs. At a minimum, counties shall carry out statutory responsibilities as provided in Iowa Code section 455B.172 and provide for:

(1) Site evaluations to determine the appropriate design and size of PSDSs prior to permitting and installation.

(2) Inspection of PSDSs at the time of renovation or construction.

(3) Assurance of regular system maintenance and monitoring for the life of the loan.

c. Eligible project costs. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable, and directly related to the repair, rehabilitation, or replacement of a PSDS.

d. Applicant eligibility. Assistance is limited to applicants who meet the applicable provisions of 567—Chapter 69 and all other local provisions for the siting and construction of PSDSs.

e. Eligible projects. Assistance can be provided only for the repair, rehabilitation, or replacement of existing PSDSs. Assistance is not available for new housing.

90.10(2) *Applying for assistance.*

a. Prior to applying for a loan from a participating lending institution, an eligible individual or entity must demonstrate appropriate permitting from the county in which the PSDS is located.

b. Application for assistance shall be made on forms provided by the department or its agent. Forms may be downloaded from www.iowasrf.com.

c. Applications for assistance shall include:

- (1) A description of the type and general specifications of the proposed work;
- (2) An estimate of the population and number of households to be served; and
- (3) A description of the system maintenance and monitoring program.

90.10(3) *County review and approval.*

a. The county shall review applications to determine if a project meets the applicable provisions of 567—Chapter 69 and all other relevant local provisions for the siting and construction of PSDSs.

b. For projects that meet relevant criteria, the county shall issue a permit or certificate. The county permit or certificate shall be accompanied by a cost estimate.

c. A county may deny an application for noncompliance with applicable state and local criteria. Written notification of the denial shall be provided to the applicant and shall state the reason(s) for denial.

90.10(4) *Eligible costs.* All costs directly related to the design, permitting, construction, and financing of a PSDS are eligible for loans. Eligible costs include the removal of existing structures, earth moving, or any land purchases directly related to proper wastewater treatment.

90.10(5) *Ineligible costs.* Costs for additional earthwork, replanting, or any other aesthetic improvements are not eligible. Maintenance or monitoring costs will not be allowed as part of a loan.

90.10(6) *Recipient recordkeeping.* The loan recipient shall:

- a. Maintain adequate records that document all costs associated with the project;
- b. Provide access to these records to the department, the state auditor, the EPA SRF project manager, and the EPA Office of the Inspector General; and
- c. Retain all project records and documents for inspection and audit purposes for a period of three years from the date of the final loan payment.

90.10(7) *Site access.* The loan recipient shall:

- a. Provide the department and the administrative authority access to the construction site to verify that the loan was used for the purpose intended and that the constructed works meet applicable state and local environmental requirements and ordinances for PSDSs; and
- b. Provide access to the system for periodic monitoring by the department and administrative authority, at times mutually agreed upon with the system owner, for the duration of the loan.

90.10(8) *Priority allocation of funds and IUP.* The department shall, in the annual IUP, describe the amount of funding available for loans under the OSWAP for the coming state fiscal year.

90.10(9) *Targeted assistance.* The department may budget a portion of the annual available funds identified in the IUP for financing PSDSs in targeted areas. Such targeted areas may include impaired watersheds, high-density housing areas, agricultural drainage areas, or other environmentally sensitive or degraded areas where the repair and rehabilitation of PSDSs are needed to preserve and protect water quality. The annual IUP shall specify the need for targeted assistance, the areas covered, and the estimate of funds needed to address the water quality problems.

567—90.11(455B) NPS project procedures—livestock water quality linked-deposit program (LWQP). The purpose of the LWQP is to assist owners of existing AFOs to meet state and federal requirements or to prevent, minimize, or eliminate water pollution.

90.11(1) *Eligibility conditions and restrictions.* Assistance shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF.

- a. *Eligible project costs.* All costs directly related to the design, permitting, construction, and financing of the WPC facilities are eligible. The amount of assistance available shall be

limited to the total costs deemed necessary, reasonable, and directly related to the facilities required to provide WPC as required by the department or to prevent, minimize, or eliminate water pollution.

b. Applicant eligibility. Assistance is limited to livestock producers operating AFOs according to federal law. Concentrated AFOs, as defined in 40 CFR §122.23, are not eligible.

(1) Loans will be made only to livestock producers that are operators of record or have legal control of the property containing the AFO for the duration of the loan.

(2) The department has the discretion to deny applications for producers if:

1. The department has issued an administrative order to the producer pursuant to Iowa Code section 455B.175;

2. The department notifies the producer in writing of intent to recommend referral or the commission refers the action to the attorney general pursuant to Iowa Code section 455B.175;
or

3. The attorney general has commenced legal proceedings against the producer pursuant to Iowa Code section 455B.112.

c. Eligible projects. The WPC facilities considered eligible for assistance include manure storage structures, solids settling basins, composting facilities and equipment, lagoons (including fencing), portions of feeding floors or loafing areas used for waste collection, water and sediment control basins, vegetative filters or buffers, surface water diversion structures, agitation or transfer pumps, dry bedded confinement feeding operation buildings or structures pursuant to Iowa Code chapter 459B when all or part of an open feedlot is replaced, and other practices shown to improve or protect water quality. Replacement AFOs may be eligible where an existing AFO is eliminated to prevent a water quality impairment or mitigate a documented impairment. Engineering or technical service fees associated with the aforementioned practices are also eligible. A one-time purchase of attachments integral to the

manure management system, such as blades, buckets, choppers, or spreaders, may be eligible at the time that an open feedlot is replaced with a dry bedded confinement building.

d. Funding formula.

(1) Loans for water quality projects for facilities being expanded by an increase in the animal unit capacity shall be funded according to the following formula:

Existing animal unit capacity/new animal unit capacity \times total eligible project cost \times 1.5 = maximum linked deposit amount

Example: 450 AUC / 900 AUC \times \$500,000 \times 1.5 = \$375,000

Example: 300 AUC / 600 AUC \times \$300,000 \times 1.5 = \$225,000

Example: 50 AUC / 900 AUC \times \$500,000 \times 1.5 = \$41,666

(2) If existing areas in open feedlots are kept open where some pens are replaced and the operation is expanded through the addition of a dry bedded confinement feeding operation building, the remaining open lot areas must comply with 567—65.101(459A).

90.11(2) *Applying for assistance.* Application for project approval shall be made on forms provided by the department or its agent. Forms may be downloaded from www.iowasrf.com.

90.11(3) *Project review and approval.*

a. Applications shall be submitted to the local SWCD. The local SWCD will evaluate the application, provide an estimated cost, and certify that the practice is eligible and compatible with state water quality goals.

b. All practices must comply with 567—Chapter 65 and shall be constructed to applicable USDA NRCS standards. NRCS staff or another technical service provider shall attest that the practice will be constructed to these specifications and standards.

90.11(4) *Project duration.* The project is to be maintained, kept in place, or operated as proposed for the life of the loan. If an open lot is closed and replaced with an eligible replacement facility, the department or its agent shall place a restrictive covenant that

prohibits the operation of an open feedlot at the replacement site for the life of the loan. The site or portion of the site that may not house animals shall be defined by the local SWCD.

90.11(5) *Manure management plan (MMP) required.* The livestock producer shall have an MMP that meets the requirements of 567—65.17(459), a nutrient management plan (NMP) as defined in 567—65.112(459A), or a comprehensive NMP (CNMP), to be eligible for the loan or, as part of the loan, develop an MMP, NMP, or CNMP.

- a.* Costs for development of an MMP, NMP, or CNMP are eligible costs.
- b.* Costs for updating an MMP, NMP, or CNMP are eligible costs if required for the implementation of a water quality project financed through the LWQP.

90.11(6) *Ineligible costs.* Costs for development of a new AFO are ineligible. Other ineligible costs include but are not limited to the following:

- a.* Costs for the design, permitting, construction, or financing of WPC facilities that would allow an AFO to expand and become a concentrated AFO;
- b.* Costs for the purchase of land to be used for application of wastewater or manure;
- c.* Operation and maintenance costs; and
- d.* Refinancing costs for WPC facilities constructed prior to approval by the department or its agent.

90.11(7) *Recipient recordkeeping.* The loan recipient shall:

- a.* Maintain adequate records that document all costs associated with the project;
- b.* Provide access to these records to the department, the state auditor, the EPA SRF project manager, and the EPA Office of the Inspector General; and
- c.* Retain all project records and documents for inspection and audit purposes for a period of three years from the date of the final loan payment.

90.11(8) *Site access.* The livestock producer shall:

a. Provide the department and its agent access to the construction site to verify that the loan was used for the purpose intended and that the construction work meets the applicable state and federal requirements for AFOs; and

b. Provide the department and its agent periodic access to the AFO, pursuant to the biosecurity requirements in 567—paragraph 65.113(9) “b,” for the duration of the loan to ensure that the constructed facility is being operated and maintained as designed.

567—90.12(455B) NPS project procedures—local water protection project linked-deposit program (LWPP). The purpose of the LWPP is to assist landowners with local water protection projects that will provide water quality improvement or protection.

90.12(1) *Eligibility conditions and restrictions.* Assistance under the CWSRF shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF.

a. *Eligible project costs.* The amount of assistance available shall be limited to the total costs deemed necessary, reasonable, and directly related to the practices required to provide water quality improvements.

b. *Applicant eligibility.* Assistance is available to any person who is an owner of record or has legal control over land that needs local water protection projects installed to control runoff of sediments, nutrients, pesticides or other NPS pollutants into waters of the state.

c. *Eligible practices.* The LWPP projects that are considered eligible include, but are not limited to, contour buffer strips, diversion, fence, field border, field windbreak, filter strips, grade stabilization structure, grassed waterway, pasture and hayland planting, planned grazing system, pond, riparian forest and vegetative buffers, sediment basin, terrace, underground outlet with secondary water quality treatment, waste management system, water and sediment control basin, stream bank stabilization and restoration, and other practices that are shown to improve or protect water quality.

90.12(2) *Applying for assistance.* Application for project approval shall be made on forms provided by the department or its agent. Forms may be downloaded from www.iowasrf.com.

90.12(3) *Project review and approval.*

a. Applications shall be submitted to the local SWCD. The local SWCD shall evaluate the application, provide an estimated cost, and certify that the practice is compatible with state water quality goals.

b. All practices shall be constructed to meet NRCS standards and specifications. The NRCS or another technical service provider shall attest that the practice will be constructed to these specifications and standards.

90.12(4) *Project duration.* The project is to be maintained, kept in place, or operated as proposed for the life span of the practice, but in no case for less than the life of the loan.

90.12(5) *Eligible costs.* All costs directly related to and necessary for the implementation of LWPPs approved in the memorandum of project approval are eligible costs.

90.12(6) *Ineligible costs.* Ineligible costs include costs for overbuilding a practice beyond what is required to maintain or improve water quality and costs for the purchase of land.

90.12(7) *Site access.* The applicant shall provide the department or its agent access to the project site to verify that the loan was used for the purpose intended.

567—90.13(455B) NPS project procedures—stormwater linked-deposit program. The purpose of this program is to assist private landowners with the construction of stormwater BMPs that will provide water quality improvement or protection.

90.13(1) *Eligibility conditions and restrictions.* Assistance under the CWSRF shall be in the form of low-interest loans made by participating lending institutions through a linked deposit arrangement with the CWSRF.

a. Eligible project costs. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable, and directly related to the practices required to provide water quality improvements.

b. Applicant eligibility. Assistance is available to any person who is an owner of record or has legal control over land that needs stormwater BMPs installed to control runoff of sediments, nutrients, pesticides, or other NPS pollutants.

c. Eligible practices. Eligible practices include but are not limited to grade stabilization structure, grassed waterway, stormwater wetland, native landscaping, soil quality restoration, riparian forest and vegetative buffers, sediment basin, underground outlet with water quality treatment, stream bank stabilization, bioretention cell, greenroof, and other practices that are shown to improve or protect water quality.

90.13(2) *Applying for assistance.* Application for project approval shall be made on forms provided by the department or its agent. Forms may be downloaded from www.iowasrf.com.

90.13(3) *Project review and approval.*

a. Applications shall be submitted to the local SWCD. The local SWCD will evaluate the application, provide an estimated cost, and certify that the practice is compatible with state water quality goals.

b. It is recommended that all practices be constructed to meet Iowa Stormwater Management Manual or NRCS standards and specifications as posted on the department's website at www.iowadnr.gov and the NRCS website at www.nrcs.usda.gov, respectively, as of September 1, 2024. The NRCS or another technical service provider shall attest that the practice is designed to these specifications and standards, or shall attest that the practice is based on these standards and designed with sound engineering principles.

90.13(4) *Project duration.* The project is to be maintained, kept in place or operated as proposed for the life span of the practice, but in no case for less than the life of the loan.

90.13(5) *Eligible costs.* All costs directly related to and necessary for the implementation of the stormwater BMP approved in the memorandum of project approval are eligible costs.

90.13(6) *Ineligible costs.* Ineligible costs include costs for overbuilding a practice beyond what is required to maintain or improve water quality and costs for the purchase of land.

90.13(7) *Site access.* The applicant shall provide the department or its agent access to the project site to verify that the loan was used for the purpose intended.

567—90.14(455B) NPS project procedures—GNS loan program. The purpose of this program is to assist projects that will provide water quality improvements or water quality protection. This program allows for funding of the water quality protection portion of nontraditional projects.

90.14(1) *Project ranking.* Projects and activities under NPS project categories VI-B through D, VII-A through K, and XII will all receive a total score of five when placed on the PPL. Once 90 percent of NPS program funds have been allocated, additional NPS project scoring criteria published in the IUP will be used to rank NPS projects for funding and placement on the PPL. Until that time, the loan assistance is based on a first-come, first-funded concept.

90.14(2) *Eligibility conditions and restrictions.* Assistance under the CWSRF GNS program shall be in the form of low-interest loans made directly or by participating lending institutions through a participation arrangement with the CWSRF.

a. Eligible project costs. The amount of assistance available shall be limited to the total costs deemed necessary, reasonable, and directly related to the facilities or practices required to provide water quality improvements, restoration, or protection. Participation in nontraditional projects where the primary purpose is not water quality protection or improvement will be limited to the portion of the project that is directly related to water quality improvement, restoration, or protection.

b. Applicant eligibility. Assistance is available to projects for which facilities are needed to protect, restore, or improve water quality from NPS pollution. Only applicants that are owners of record of the property or have long-term control of the property where the project is to be implemented are eligible. In applications where the WPC project is a plan or document that will direct water quality protection or improvement efforts, loans will be made to applicants that have the capacity and capability of implementing the plan and repaying the loan.

c. Eligible projects. Eligible projects include, but are not limited to, practices to address NPS pollution control needs associated with stormwater treatment and green infrastructure, silviculture, groundwater protection, marinas, resource extraction, brownfield remediation, aboveground and underground storage tanks, sanitary landfills, hydromodification, and watershed planning. Nontraditional NPS projects that may have a water quality protection or improvement component include, but are not limited to, bird sanctuaries and wildlife enhancement projects, vegetative plants, sediment removal and other lake restoration practices, and education programs.

90.14(3) *Applying for assistance.* Applications for GNS project approval shall be made on forms provided by the department. Forms may be downloaded from www.iowasrf.com. Applications shall include an explanation of how the water quality will be protected, improved, or restored by the proposed project. Applications may be submitted on an ongoing basis and will be reviewed in accordance with the schedule in the IUP.

90.14(4) *Project review and approval.* The department will evaluate eligibility and project design and provide the applicant a memorandum of approval for the proposed WPC project.

90.14(5) *Eligible costs.* All costs directly related to the implementation of the project approved in the memorandum of approval are eligible costs.

90.14(6) *Ineligible costs.* Costs for livestock water quality facilities are not eligible under this program and are provided for in 567—90.11(455B). Costs for the purchase of land are not eligible costs unless specifically approved by the commission.

90.14(7) *Site access.* The recipient shall provide the department and its agent access to the project site to verify that the loan was used for the purpose intended.

These rules are intended to implement Iowa Code sections 455B.199, 455B.291 through 455B.299, 466.8 and 466.9.

ITEM 2. Rescind and reserve **567—Chapter 91**.

ITEM 3. Rescind and reserve **567—Chapter 92**.

ITEM 4. Rescind and reserve **567—Chapter 93**.