

Agenda

Environmental Protection Commission

Tuesday, August 16, 2011
DNR Air Quality Building
7900 Hickman Road
Windsor Heights, IA
10:00 AM

10:00 AM – Meeting begins

10:30 AM – Public Participation¹

1:00 PM – William Schmidt and Rockingham-Lunex Co. (Scott County) – Air Quality / Solid Waste

Agenda topics

- | | | |
|-----|--|---------------------------------|
| 1 | Approval of Agenda | |
| 2 | Approval of Minutes | |
| 3 | Director's Remarks | |
| 4 | Contract for Watershed Management Plan | Steve Hopkins
(Decision) |
| 5 | Contract Amendment – ISU GIS Facility - professional GIS services to gather geocoding data for 17 counties in the central region of Iowa | Chris Ensminger
(Decision) |
| 6 | Contract –IT Database Contract for Wastewater Permits Application (NPDS) | Adam Schnieders
(Decision) |
| 7 | State of Iowa Public Drinking Water Program
2010 Annual Compliance Report | Diane Moles
(Information) |
| 8 | Water Supply: Water Use & Allocation Annual Permit Fee | Diane Moles
(Decision) |
| 9 | Proposed Rules - Drinking Water and Laboratory Certification Programs - Chapters 40, 41, 42, 43, and 83 | Diane Moles
(Decision) |
| 10 | Contract – University of Iowa – Water Assessment Services Staff Support | Sharon Tahtinen
(Decision) |
| 11 | Contract with Council Bluffs Department of Public Health for Filter and Sampler Data Collection & Transmittal | Christina Iams
(Decision) |
| 12 | Contract with Polk County for Execution of the State of Iowa Air Pollution Control Implementation Plan: Polk County | Christina Iams
(Decision) |
| 12b | Contract with Linn County for Execution of the State of Iowa Air Pollution Control Implementation Plan: Linn County | Christina Iams
(Decision) |
| 13 | Notice of Intended Action - Chapters 22 and 33:
Air Quality Program Rules – PSD and Title V Programs: Three-Year Deferral of Biogenic CO ₂ Emissions | Christine Paulson
(Decision) |
| 14 | Contract – Source Water Protections Technical Assistance | Chad Fields
(Decision) |
| 15 | Referrals to the Attorney General
William Schmidt and Rockingham-Lunex Co. (Scott County) – Air Quality / Solid Waste | Ed Tormey
(Decision) |
| 16 | Commission Schedule | Jerah Sheets
(Decision) |
| 17 | Monthly Reports | Bill Ehm
(Information) |

- | | |
|----|--|
| 18 | General Discussion |
| 19 | Items for Next Month's Meeting <ul style="list-style-type: none">• September 20th – TBD• October 18th – TBD |

For details on the EPC meeting schedule, visit
<http://www.iowadnr.gov/InsideDNR/BoardsCommissions.aspx>.

¹ Comments 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.

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

ITEM

4

DECISION

TOPIC Contract for Watershed Management Plan

Recommendations:

Commission approval is requested for a 1.5 year contract with Iowa State University to complete a watershed management plan (WMP) for the Hickory Grove Lake Watershed. The purpose of the WMP is to identify actions needed to restore Hickory Grove Lake, an impaired lake in Story County. The total amount of this contract shall not exceed \$41,969.

Funding Source:

This contract will be funded through EPA Section 319 grant funds.

Background:

The following contract is presented for approval:

Hickory Grove Lake Watershed Planning	\$41,969
Total	\$41,969

Purpose:

The parties propose to enter into this contract for the purpose of completing a watershed management plan for the watershed selected.

Contractor Selection Process:

This project was chosen using the DNR Watershed Planning Grant application and committee review process.

Steve Hopkins
Coordinator, Nonpoint Source Program, Watershed Improvement Section
Geological and Water Survey Bureau, Environmental Services Division

Project Summary: Hickory Grove Lake Watershed Planning

Project Name: Hickory Grove Lake Watershed Planning

Contractor: Iowa State University

Amount: \$41,969

Time Frame: August 16, 2011 – December 31, 2012

This 1.5 year project administered by Iowa State University will develop a watershed management plan which includes the Environmental Protection Agency's (EPA) Nine Elements for watershed planning. The final product will be a department approved Watershed Management Plan to be used for project implementation.

The Hickory Grove Watershed is located in Story County, Iowa and is listed on the 2008 303(d) Impaired Waters Listing for elevated bacteria concentrations. A TMDL has not been developed for this watershed, but a diagnostic study to identify the sources of bacteria and other water quality is currently being conducted by Iowa State University. The watershed management plan will address the bacteria impairment along with other water quality concerns.

As part of the Hickory Grove Lake watershed planning process Iowa State University will 1) Conduct water quality monitoring throughout the watershed, 2) survey the users and landowners within the watershed, 3) develop educational materials and events, 4) work with individual landowners to explore on-farm conservation opportunities and involve landowners as members of the watershed advisory board, 5) conduct SWAT scenario analysis to assess the water quality benefits of proposed conservation practices.

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

ITEM

5

DECISION

TOPIC

Contract Amendment – ISU GIS Facility - professional GIS services to gather geocoding data for 17 counties in the central region of Iowa (original contract # JG-3570-12-B)

The Department requests Commission approval of a contract amendment in the amount of \$87,975 with the Iowa State University GIS Facility to gather geocoding (address location) data for an additional 17 counties in the central region of Iowa. The time of performance will also be amended from 12/31/2011 to 7/1/2012.

This contract will allow the department to generate accurate address locations from county E911 addresses matched to building footprints derived from LiDAR and aerial photography. These data will be much more accurate than anything we have had in the past and will be used extensively with DNR and non-DNR programs across the state.

Funds for this project will come from Pooled Technology grant funds directed to the DNR GIS Section.

The ISU GIS Facility is uniquely equipped with the expertise, student labor, and GIS equipment needed to complete this work.

Chris Ensminger, Environmental Program Supervisor
GIS Section, IGSLQ Bureau
Environmental Services Division

7/21/2011

Section 3 Contract Amendment Statement of Work

Task 1: Geocoding and Administration

Description: Create address point products for 17 additional Iowa counties as described in tasks 2 and 3 of original contract and task 1 of the 1st amended contract. Hire and supervise student workers.

Products for 17 additional counties to be delivered include E911 address points derived from county parcel data, county E911 data and GPS data, and structure points (“rooftop” points) which are derived from the same sources, plus information obtained from county assessor websites, 2010 aerial photography and Internet searches. Database schema for address and land use attributes, and address validation will be provided by DNR geocoding staff. ISU geocoding staff will obtain source data documents from DNR or from county offices directly. ISU staff will provide any intermediate GIS layers used to produce geocoding products. In addition to the initial creation of the address and structure points, ISU will perform for each county a complete quality check looking for misspelled addresses, missing addresses and points, and incorrect land use designations. Upon reception of completed counties, DNR will perform its own quality checks and address revalidation. Counties that do not pass the quality check will be returned to ISU for further processing.

List of counties that may be geocoded in this round of work include but not limited to: Palo Alto, Hancock, Plymouth, Sac, Audubon, Cass, Adams, Union, Clarke, Taylor, Wayne Appanoose, Worth, Cerro Gordo, Mitchell, Floyd, Butler, Grundy, Howard, Chickasaw, Bremer, Winneshiek, Fayette, Clayton and Allamakee. Actual list depends on availability of county GIS data.

Task 2: Establish server and storage for disseminating geocoding and other GIS data via the web.

The Iowa Geospatial Data Clearinghouse (IGDC) is the gateway for the public to search for and access GIS data from all sources in Iowa. IGDC will be the primary access portal for information about the Iowa Geocoding Project and the Iowa Geospatial Infrastructure. It is currently housed at ISU GIS Facility and is in need of upgrades. For this task, ISU will move the current Clearinghouse application to a virtual server environment, load Geoportal software to replace the old IGDC application and add physical storage for GIS data to be served over the Internet. ISU will work in concert with DNR GIS data librarian and web services coordinator to set up, test and assign maintenance tasks once the clearinghouse server is running. ISU will provide direct access to the server administration tools to DNR during this phase.

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

ITEM

6

DECISION

TOPIC **Contract –IT Database Contract for Wastewater Permits Application (NPDS)**

Recommendations:

Commission approval is requested for a two year-service contract with Quality Consulting, Inc of Clive, Iowa. The contract will begin on August 22nd and terminate on July 26, 2013. The total amount of this contract shall not exceed \$242,500. DNR shall have the option to renew this contract long as this contract and any extensions do not exceed a six-year period.

Funding Source:

This project will be funded through the Environmental Performance Partnership Grant.

Background:

The NPDS application is used by DNR staff to manage 1800 active and 200 inactive permits for wastewater treatment facilities regulated under the U.S. Environmental Protection Agency's National Pollutant Discharge Elimination System guidelines. NPDS was designed to allow DNR permit writers to draft, issue, revoke, track and run reports on NPDES permits; and to allow wastewater staff in DNR Field Offices to track and run reports on permits, enter enforcement information, create and upload discharge monitoring reports (DMRs) and run quarterly non-compliance reports (QNCRs). The current client server based system went into production in July of 2003.

The NPDS application needs to be upgraded for several reasons. Chief among these are:

- The language used to write NPDS and the reporting tool for NPDS are both outdated and do not meet current DNR IT standards; thus it is difficult for DNR IT staff to support and maintain NPDS
- Current architecture requires the use of Citrix for application access
- It is difficult for other applications to communicate with NPDS

Purpose:

The parties propose to enter into this Contract for the purpose of retaining the Contractor to provide: development of business requirements and C# software application development services to rewrite and enhance the existing NPDS application.

Contractor Selection Process:

QCI (Quality Consulting, Inc.) was chosen using the formal RFP process. The Department of Administrative Services issued the RFP on behalf of the DNR. QCI was chosen for this project because their proposal was evaluated to be technically competent and they had the lowest cost proposal, giving them the highest score. We received responses from 10 vendors (5 companies with an Iowa presence and 5 companies outside of Iowa). Only five proposals received the required technical score to open their cost proposal.

Adam Schnieders, Supervisor
NPDES Section, Water Quality Bureau
Environmental Services Division
Commission Date

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

ITEM

7

INFORMATION

TOPIC

State of Iowa Public Drinking Water Program
2010 Annual Compliance Report

The Department is submitting the *State of Iowa Public Drinking Water Program 2010 Annual Compliance Report* to the Environmental Protection Commission for information purposes.

The Safe Drinking Water Act (SDWA) Amendments of 1996 require the Department to issue an annual report of the SDWA violations in the state. This report fulfills the reporting requirement in Iowa for the 2010 calendar year. It was prepared by the Department's Water Supply Engineering & Operations Sections in the Water Quality Bureau of the Environmental Services Division.

Development of the report was accomplished through the use of the state water supply database. It was provided to EPA prior to the July 1st deadline. An electronic copy has also been provided to the Governor, legislative officials, and members of the SDWA Advisory Group. The report contains a summary of the program, description of the requirements that systems must meet, the year's violation statistics, and the list of the systems with each health-based standard or major monitoring or reporting violation incurred during the year.

Report highlights:

- Both the number of health-based standards violations and the number of public water supply systems with violations were very similar to 2006 through 2009 levels, which in 2010 were 351 violations at 176 systems serving 225,423 people. Over the past 10 years, the percentage of Iowa's approximately 2,000 public water supply systems that are not in compliance with all health-based standards ranges from 7.7% to 10.1%. The three standards that were violated most frequently in 2010 were coliform bacteria, nitrate nitrogen, and nitrite nitrogen, which account for 80.9% of the violations.
- The number of systems with an acute fecal coliform or *E. coli* bacteria maximum contaminant level violation increased from 2009, to similar levels as those seen in 2006 – 2008, with 24 systems having a total of 26 violations.
- In 2010, there were very similar results to 2009 for nitrate maximum contaminant level violations: 14 systems with 29 acute nitrate violations.
- In 2010, there was slight decrease from 2009 in the number of major monitoring and reporting violations. There were 81.6% of systems in compliance with all major monitoring and reporting violations in 2010 with 757 violations at 362 systems serving 284,403 people. This is the lowest number of monitoring and reporting violations in a 10-year period.

- The overall decrease in the monitoring and reporting violations was achieved in spite of the first full year of implementation of the Groundwater Rule, which is a recent federal rule affecting all groundwater systems that requires sampling of untreated well water when a triggering event occurs. In 2010, there were 290 systems with 468 triggered events that required source water sampling from each well in use when the triggering event occurred; 46 systems had 55 monitoring violations for failure to collect the source sample(s). This new rule has taken significant effort by state water supply program staff, system operators, and environmental laboratories, to ensure that the required source water samples are taken from the appropriate wells within the short timeframe allowed by the rule.
- There were 16 systems that received a violation for failure to obtain a certified operator during the year.
- There were 18 community systems that failed to prepare and distribute their annual consumer confidence report in 2010, which translates to a 98.4% compliance rate with the consumer confidence report rule for Iowa's community systems.

The electronic report is available at the DNR's website:

www.iowadnr.gov/InsideDNR/RegulatoryWater/WaterSupplyEngineering/AnnualComplianceReport.aspx

Sharon Tahtinen
Interim Chief, Water Quality Bureau
Environmental Services Division

July 20, 2011

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

ITEM

8

Decision

TOPIC

Water Supply: Water Use & Allocation Annual Permit Fee

The Commission is asked to approve the annual Water Use and Allocation Program permit fee of \$95.00 per permit for SFY 2012.

Background

Water use permits are required of any person or entity using 25,000 gallons of water in a single day during the year, and are issued for a period of up to 10 years. Previously, appropriations from the General Fund were used to fund water allocation and use permits program. During the 2008 legislative session, the legislature authorized the department to collect up to an additional \$500,000 in fees each fiscal year. Iowa Code §455B.265(6) requires the fees to be based on the Department's "reasonable cost of reviewing applications, issuing permits, ensuring compliance with the terms of the permits, and resolving water interference complaints." There are two types of fees in the Water Use and Allocation Program: an application fee and an annual permit fee. This request is for the determination of the annual fee for SFY 2012.

The annual fee rule, adopted in 2009, is summarized below (IAC 567-50.4(2) "b"):

- Each year, the Commission is asked to set the annual fee based on the budgeted expenses for that year minus the amount of any unused funds from the previous year and any general fund appropriations.
- The department reviews the annual permit fee each year and adjusts the fee as necessary to cover all reasonable costs required to develop and administer the water use permitting program.
- The annual fee is based on the number of active permits.
- Each permit holder pays the same annual fee.
- The fee is not prorated and is nonrefundable.
- The department requests Commission approval of the amount of the annual fee no later than September 30 of each year.
- The department provides an annual fee notice to each permittee at least 60 days prior to the fee due date.
- The annual fee due date is December 1st; 60 days prior is October 1st.

There is no annual fee required for either a water storage permit (permitted for the life of the structure) or a minor nonrecurring water use registration (one-year permit duration).

The annual permit fee for SFY 2010 and SFY 2011 was \$135.00.

SFY 2012 Budget

The worksheet included with this agenda brief illustrates the actual expenditures in SFY 2008 – 2010 and the first three quarters of SFY 2011, and the budgeted amounts for SFY 2011 and 2012. The final accounting figures for SFY 2011 should be available later in August. The changes to the budget in 2012 from the previous years include the following:

- Completion and deployment of the Water Use Program's computer database – Phase I, which will improve tracking permits and addresses; enabling access to the database from the Internet (i.e., web-based application); and developing electronic payment feature;
- Tasks associated with the new fees, including mailing the annual fee statement, collection of the appropriate application and annual fees, revision of forms;
- Staffing to conduct more thorough review of the permits and associated data; and
- Enforcement of the state water use program rules.

Fee Analysis

There is a second phase of computer programming required to complete the database functions, which will be done in SFY 2012 and SFY 2013. At the Water Use Stakeholder meeting on June 8, 2011, the program's activities and budget were reviewed. A \$95.00 annual water use permit fee was proposed for SFY 2012, which is \$40.00 less than the annual water use permit fee in SFY 2011.

Based on the budget and stakeholder input, the annual water use permit fee for SFY 2012 should be \$95.00.

Sharon Tahtinen
Interim Chief, Water Quality Bureau
Environmental Services Division
July 20, 2011

Water Allocation and Use (7152)	FY08 Final Expenses	FY09 Final Expenses	FY10 Final Expenses	FY11 Budget	FY 11 Actual Exp. (through April 2011)	FY 12 Budget
REVENUES						
General Fund	\$365,673	\$346,846	\$172,321	\$241,355	\$140,067	\$241,355
Water Use Permit Fund			\$300,035	\$415,000	\$326,822	\$373,178
WU Permit Fund Carryforward				\$150,000	\$200,570*	\$150,000
TOTAL REVENUES	\$365,673	\$346,846	\$472,356	\$806,355	\$466,889	\$614,493
EXPENSES						
FTE	3.49	3.13	3.87	4.00	2.60	4.00
Personal Services	\$303,977	\$287,909	\$321,390	\$355,633	\$254,537	\$376,291
Permanent	0	0	321,390	355,633	254,537	371,028
Non-Permanent	0	0	0		0	5,263
Personal Travel In-State	646	2,067	397	2,150	6	1,200
State Vehicle	0	0	0		0	0
Depreciation	0	0	0		0	0
Pers. Travel Out of State	448	0	0	3,600	72	1,800
Office Supplies	4,161	3,840	1,906	2,300	2,251	2,300
Facility Main. Supplies	0	23	0		0	0
Equipment Maintenance	0	112	0	500	0	500
Prof Supplies	0	0	0		0	0
Ag Supplies	0	0	0		0	0
Other Supply	13	46	78	150	52	150
Print & Binding	482	0	308	800	1,288	800
Uniforms	0	0	0		0	0
Postage	1,125	597	240	250	207	250
Communications	689	690	1,137	2,150	1,003	1,900
Rentals	8,502	9,637	12,307	15,250	9,529	15,650
Utilities	0	0	0		0	0
Professional Services	0	0	81,454	359,833	137,610	149,500
Outside Services	600	0	5,442		21,189	0
Intra-State Transfers	0	0	0		0	0
Advertising & Publishing	3,515	2,208	1,401	4,500	669	2,700
Auditors Reimbursement	0	0	0		0	0
Reimbursement	72	104	96	150	146	150
ITS Reimbursement	0	0	126	2,400	0	2,400
Equipment Inventoriable	771	0	0	2,000	0	2,000
Equipment Non-Inv.	0	0	0		0	0
IT Hardware	0	0	597	500	0	500
Other Expenses	0	0	317		404	0
Securities	0	0	0		0	0
Licenses	0	0	69	1,200	0	1,200
State Aid	0	0	0		0	0
Capitals	0	0	0		0	0
July/Aug. Expense	0	0	0		0	0
Indirects	40,672	39,616	45,091	52,989	37,926	55,202
TOTAL EXPENSES	\$365,673	\$346,846	\$472,356	\$806,355	\$466,889	\$614,493

Notes: Actual Expenditures for SFY2008 - SFY2010 are final. Projected & proposed budget expenditures for SFY2011 & SFY2012 are subject to change.

Actual revenue in Water Use Permit Fund in SFY 2010 totaled \$452,255, and was \$444,870 in SFY 2011 (as of 4/1/2011).

This spreadsheet shows the actual revenue amount drawn from the WU Permit Fund and General Fund, not the fund balance.

*Actual carryforward from 2010 is not included in the SFY2011 YTD Total Revenue.

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

ITEM

9

DECISION

TOPIC

Proposed Rules - Drinking Water and Laboratory Certification Programs -
Chapters 40, 41, 42, 43, and 83

The Commission will be asked to approve a draft Notice of Intended Action that would initiate rulemaking to amend the following chapters:

- Chapter 40, Scope of Division-Definitions-Forms-Rules of Practice
- Chapter 41, Water Supplies
- Chapter 42, Public Notification, Public Education, Consumer Confidence Reports, Reporting, and Record Maintenance
- Chapter 43, Water Supplies – Design and Operation, and,
- Chapter 83, Laboratory Certification

In January 2006, the U.S. Environmental Protection Agency promulgated two new significant federal rules pertaining to drinking water: Stage 2 disinfectants and disinfection byproducts rule (Stage 2 DBPR) and Long-term 2 enhanced surface water treatment rule (LT2 ESWTR). In addition, other changes were made between January 2004 and March 2007 to existing federal drinking water rules, primarily in analytical methods. States are expected to incorporate these federal rule provisions into state program rules in order to maintain primacy in the drinking water program. The proposed rule amendments, if adopted, will accomplish that end.

In addition to the adoption of the two federal rules, the other proposed changes are summarized below.

- In the scope of the division, reference Chapter 38 for test well and monitoring well rules and remove Chapter 47, which has already been rescinded. (Ch. 40 and 83)
- Correct the name of the University Hygienic Laboratory to the State Hygienic Laboratory (Ch. 40 and 83).
- Require systems collecting at least 6 routine total coliform samples to do so on separate days to meet the minimum federal rule (Ch. 41).
- Adopt new analytical methods that are approved for drinking water (Ch. 41).
- Rescind parts of the existing Stage 1 disinfectants/disinfection byproducts rule that are no longer applicable with the adoption of the Stage 2 rule (Ch. 41, 42, and 43)
- Update the uranium detection limit (Ch. 41)
- Include the requirement of the department to maintain a list of certified operators (Ch. 43)
- Update the water supply construction standards to the 2007 edition of Ten States Standards and 2010 American Water Works Standards (Ch. 43)
- Clarify the duration of a water supply construction permit (Ch. 43)

- Require at least 0.5 log inactivation of *Giardia lamblia* cysts by disinfection treatment of surface or influenced groundwater sources (multiple barrier approach along with physical treatment processes) and clarify existing CT ratio requirements (Ch. 43)
- Adopt the EPA's optimization goals for turbidity (Ch. 43)
- Correct the reference that the certification of SHL must be acceptable to EPA (Ch. 83)
- Correction of typographic and rule citation errors (all chapters)

These chapters and their amendments were reviewed by the water supply technical advisory group at one meeting on January 27, 2011. The group is comprised of individuals representing a wide variety of water supply stakeholders, including professional drinking water organizations, public water supplies, certified operators, certified environmental laboratories, environmental interests, consulting engineers, and other governmental agencies. A second meeting of the same group was held on June 21, 2011, to review the jobs impact statement, fiscal impact statement, and Governor's pre-clearance form. If adopted, this rulemaking has no impact on jobs. The proposed rules were cleared by the Governor's Office on July 19, 2011.

The draft Notice of Intended Action was presented to the Environmental Protection Commission as an Information Item at its March 15, 2011 meeting.

It was the consensus of the advisory group that one public hearing in Des Moines be recommended to the EPC for this rulemaking.

Sharon Tahtinen
Interim Chief, Water Quality Bureau

July 20, 2011

ENVIRONMENTAL PROTECTION COMMISSION [567]
Notice of Intended Action

Pursuant to the authority of Iowa Code sections 455B.105, 455B.113, and 455B.173, the Environmental Protection Commission gives Notice of Intended Action to amend the following chapters of the Iowa Administrative Code: Chapter 40, "Scope of Division-Definitions-Forms-Rules of Practice," Chapter 41, "Water Supplies," Chapter 42, "Public Notification, Public Education, Consumer Confidence Reports, Reporting, and Record Maintenance, Chapter 43, "Water Supplies – Design and Operation," and Chapter 83, "Laboratory Certification."

In January 2006, the U.S. Environmental Protection Agency promulgated two new significant federal rules pertaining to drinking water: Stage 2 disinfectants and disinfection byproducts rule (Stage 2 DBPR) and Long-term 2 enhanced surface water treatment rule (LT2 ESWTR). In addition, other changes were made between January 2004 and March 2007 to existing federal drinking water rules, primarily in analytical methods. States are expected to incorporate these federal rule provisions into state program rules in order to maintain primacy in the drinking water program. The proposed rule amendments, if adopted, will accomplish that end. In addition, other changes to the state's drinking water rules are being proposed.

Proposed changes are summarized below by Chapter.

- Chapter 40 - Reference Chapter 38 and remove Chapter 47, which pertain to private and public drinking water supply rules in the scope of the division; add definitions for the following: bag filters, bank filtration, cartridge filters, combined distribution system, finished water, flowing stream, GAC20, lake/reservoir, locational running annual average, membrane filtration, plant intake, presedimentation, significant deficiency, two-stage lime softening, uncovered finished water reservoir, wholesale system; amend definitions of consecutive public water supply, GAC10, nontransient noncommunity water system, Ten States Standards; correct the name of the University Hygienic Laboratory to State Hygienic Laboratory; and correct a typographic error.
- Chapter 41. Require systems collecting at least 6 routine total coliform samples to do so on separate days to meet the federal rule; amend analytical methods; adopt Stage 2 DBPR and rescind no longer applicable parts of the existing Stage 1 disinfectants/disinfection byproducts rule; update the uranium detection limit; and other minor corrections.
- Chapter 42. Include the public notification and consumer confidence report requirements for the new LT2 ESWTR and Stage 2 DBPR.
- Chapter 43. Include the requirement of the department to maintain a list of certified operators; update the construction standards to the 2007 edition of Ten States Standards and 2010 American Water Works Standards; clarify the duration of a construction permit; update the best available technology for disinfection byproducts; require at least 0.5 log inactivation of *Giardia lamblia* cysts in treatment of surface or influenced groundwater sources; clarify CT ratio requirements; include the requirements for the new LT2 ESWTR and Stage 2

DBPR; remove outdated Stage 1 DBPR requirements; adopt the optimization goals for turbidity; adopt new CT tables for *Cryptosporidium* treatment; and correct rule citations.

- Chapter 83. Rescind Chapter 47 reference; correct the name of the University Hygienic Laboratory to State Hygienic Laboratory; correct certification of SHL to be acceptable to EPA; update the drinking water disinfection byproduct certification requirements from Stage 1 to Stage 2 DBPR.

These chapters and their amendments were reviewed by the water supply technical advisory group at one meeting held on January 27, 2011. The group is comprised of individuals representing a wide variety of water supply stakeholders, including professional drinking water organizations, certified operators, certified environmental laboratories, environmental interests, public water supplies, consulting engineers, and other state agencies. A second meeting with the group was held on June 21, 2011 to review the jobs impact statement, fiscal impact statement, and Governor's pre-clearance form. After analysis and review of this rulemaking, no impact on jobs has been found.

Any interested person may make written suggestions or comments on these proposed amendments on or before September 29, 2011. Such written materials should be directed to Diane Moles, Water Supply Engineering Section, Department of Natural Resources, Suite M, 401 SW 7th Street, Des Moines, Iowa 50309-4611; telephone (515/725-0281); fax (515)725-0348; or e-mail diane.moles@dnr.iowa.gov. Persons who wish to convey their views orally should contact the Water Supply Section at (515)725-0281 or at the Water Supply Section offices at Suite M, 401 SW 7th Street, Des Moines, Iowa.

Oral or written comments will also be accepted at a public hearing that will be held September 28, 2011, at 11:00 a.m. in the Conference Rooms of the Water Supply Sections Office at 401 SW 7th Street, Suite I, Des Moines, Iowa. At the hearing, persons will be asked to give their names and addresses for the record and to confine their remarks to the subject of the rules. All comments must be received no later than 4:30 p.m. on September 29, 2011.

Any persons who intends to attend the public hearing and have special requirements, such as hearing or mobility impairments, should contact the Department of Natural Resources and advise of specific needs.

These amendments are intended to implement Iowa Code section 17A.3(1)“b,” Chapter 455B sections 455B.113-115, 455B.171-188, and 455B.190-192.

The following amendments are proposed.

Item 1. Amend rule 40.1(455B) as follows:

567—40.1(455B) Scope of division. The department conducts the public water supply program, ~~provides grants to counties,~~ and establishes minimum standards for the construction of private water supply systems. The public water supply program includes the following: the establishment of drinking water standards, including maximum contaminant levels, treatment techniques, maximum residual disinfectant levels, action levels, monitoring, viability assessment, consumer confidence reporting, public notice requirements, public water supply system operator certification standards, environmental drinking water laboratory certification program, and a state revolving loan program consistent with the federal Safe Drinking Water Act, and the establishment of construction standards. The construction, modification and operation of any public water supply system requires a specific 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 pursuant to 567—Chapter 9. Private water supplies are regulated by local boards of health.

Chapter 38 contains requirements for private water well construction permits, including test wells and monitoring wells.

Chapter 39 contains requirements for the proper closure or abandonment of wells.

Chapter 40 includes rules of practice, including designation of forms, applicable to the public in the department's administration of the subject matter of this division.

Chapter 41 contains the drinking water standards and specific monitoring requirements for the public water supply program.

Chapter 42 contains the public notification, public education, consumer confidence reporting, and record-keeping requirements for the public water supply program.

Chapter 43 contains specific design, construction, fee, operating, and operation permit requirements for the public water supply program.

Chapter 44 contains the drinking water state revolving fund program for the public water supply program.

~~Chapter 47 contains provisions for county grants for creating programs for (1) the testing of private water supply wells, (2) rehabilitation of private wells, and (3) the proper closure of private, abandoned wells within the jurisdiction of the county.~~

Chapter 49 contains the nonpublic water supply well requirements.

Chapters 50 to 52 contain the provisions for water withdrawal and allocation.

Chapter 55 contains the provisions for public water supply aquifer storage and recovery.

Chapter 81 contains the provisions for the certification of public water supply system operators.

Chapter 82 contains the provisions for the certification of water well contractors.

Chapter 83 contains the provisions for the certification of laboratories to provide environmental testing of drinking water supplies.

Item 2. Amend the definitions in rule 40.2(455B) as follows:

"Bag filters" are pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed of a non-rigid, fabric filtration media housed in a pressure vessel in which the direction of flow is from the inside of the bag to the outside.

"Bank filtration" is a water treatment process that uses a well to recover surface water that has naturally infiltrated into groundwater through a river bed or bank(s). Infiltration is typically enhanced by the hydraulic gradient imposed by a nearby pumping water supply or other well(s).

"Cartridge filters" are pressure-driven separation devices that remove particulate matter larger than 1 micrometer using an engineered porous filtration media. They are typically constructed as rigid or semi-rigid, self-supporting filter elements housed in pressure vessels in which flow is from the outside of the cartridge to the inside.

"Combined distribution system" is the interconnected distribution system consisting of the distribution systems of wholesale systems and of the consecutive systems that receive finished water.

"Consecutive public water supply" means an active public water supply which purchases or obtains all or a portion of its water from another, separate public water supply, also called a wholesale system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

"Finished water" is water that is introduced into the distribution system of a public water system and is intended for distribution and consumption without further treatment, except as treatment necessary to maintain water quality in the distribution system (e.g., booster disinfection, additional corrosion chemicals).

"Flowing stream" is a course of running water flowing in a definite channel.

"GAC10" means granular activated carbon filter beds with an empty-bed contact time of ten minutes based on average daily flow and a carbon reactivation frequency of every 180 days, except that the reactivation frequency for GAC10 is 120 days when used as a best available technology for compliance with the maximum contaminant level locational running annual average for total trihalomethanes and haloacetic acids.

"GAC20" means granular activated carbon filter beds with an empty-bed contact time of 20 minutes based on average daily flow and a carbon reactivation frequency of every 240 days.

"Lake/reservoir" refers to a natural or man made basin or hollow on the Earth's surface in which water collects or is stored that may or may not have a current or single direction of flow.

"Locational running annual average (LRAA)" is the average of the analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.

"Membrane filtration" is a pressure or vacuum driven separation process in which particulate matter larger than 1 micrometer is rejected by an engineered barrier, primarily through a size-exclusion mechanism, and which has a measurable removal efficiency of a target organism that can be verified through the application of a direct integrity test. This definition includes the common membrane technologies of microfiltration, ultrafiltration, nanofiltration, and reverse osmosis.

"Nontransient noncommunity water system" or "NTNC" means a public water system other than a community water system which 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 public water systems which 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 employ 25 or more people and are open regularly serve at least 25 or more of the same employees persons for four or more hours per day, for four or more days per week, for 26 or more weeks of the year.

"Plant intake" refers to the works or structures at the head of a conduit through which water is diverted from a surface water source (e.g., river, reservoir, or lake) into the treatment plant.

"Presedimentation" is a preliminary treatment process used to remove gravel, sand, and other particulate material from the source water through settling before the water enters the primary clarification and filtration processes in a treatment plant.

"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.

"Ten States Standards" means the "Recommended Standards for Water Works," 2003 2007 edition as adopted by the Great Lakes—Upper Mississippi River Board of State Sanitary Engineers and Provincial Public Health and Environmental Managers.

"Two-stage lime softening" is a process in which chemical addition and hardness precipitation occur in each of two distinct unit clarification processes in series prior to filtration.

"Uncovered finished water storage facility" is a tank, reservoir, or other facility used to store water that will undergo no further treatment to reduce microbial pathogens except residual disinfection and is directly open to the atmosphere. Such facilities are prohibited.

"Wholesale system" is a public water system that treats source water as necessary to produce finished water and then delivers some or all of that finished water to another public water system. Delivery may be through a direct connection or through the distribution system of one or more consecutive systems.

Item 3. Amend the rule 40.3(455B) as follows:

567—40.3(17A,455B) Forms. The following forms are used by the public to apply for department approvals and to report on activities related to the public water supply program of the department. All forms may be obtained from the Environmental Services Division, Administrative Support Station, Department of Natural Resources, Henry A. Wallace Building, 502 East Ninth Street, Des Moines, Iowa 50319-0034. Properly completed application forms shall be submitted to the Water Supply Section, Environmental Services Division. Water Supply System Monthly and Other Operation Reporting forms shall be submitted to the appropriate field office (see 567—subrule 42.4(3)). Properly completed laboratory forms (reference 567—Chapter 83) shall be submitted to the University State Hygienic Laboratory or as otherwise designated by the department.

Item 4. Amend line "2c" in the subrule 40.3(1) as follows:

<u>Schedule No.</u>	<u>Name of Form</u>	<u>Form Number</u>
"2c"	Notification <u>Notification of Minor Water Main Construction</u>	542-3152

Item 5. Amend subparagraph 41.2(1) "c"(1)(2) as follows:

2. The public water supply system must collect samples at regular time intervals throughout the month, except that a system which uses only groundwater (~~except groundwater under the direct influence of surface water, as defined in 567—paragraph 43.5(1) "b"~~) and serves 4,900 persons or fewer, that is not under the direct influence of surface water, and is required to collect five or fewer routine coliform bacteria samples per month, may collect all required samples on a single day if they are taken from different sites. A system that uses only groundwater and adds a chemical disinfectant or provides water with a disinfectant must measure the residual disinfectant concentration at the same points in the distribution system and at the same time as total coliform bacteria samples are collected. A system that uses surface water or IGW must comply with the

requirements specified in 567—paragraph 43.5(4)“b”(2)“2.” 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 42.4(3).

Item 6. Amend the table and footnotes in subparagraph 41.2(1)“e”(3) as follows:

(3) Total coliform bacteria analytical methodology. Public water supply systems must conduct total coliform analyses in accordance with one of the analytical methods in the following table:

Organism	Methodology ¹²	Citation ¹
Total Coliforms ²	Total Coliform Fermentation Technique ^{3,4,5}	9221A, B
	Total Coliform Membrane Filter Technique ⁶	9222A, B, C
	Presence–Absence (P–A) Coliform Test ^{5,7}	9221D
	ONPG–MUG Test ⁸	9223
	Colisure Test ⁹	
	E*Colite Test ¹⁰	
	m–ColiBlue24 Test ¹¹	
	Readycult Coliforms 100 Presence/Absence Test ¹³	
	Membrane Filter Technique Using Chromocult Coliform Agar ¹⁴	
	Colitag Test ¹⁵	

The procedures shall be done in accordance with the documents listed below. The incorporation by reference of the following documents listed in footnotes 1, 6, 8, 9, 10, 11, 13, ~~and 14~~, and 15 was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR Part 51. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426–4791. Documents may be inspected at EPA’s Drinking Water Docket, EPA West, 1301 Constitution Avenue NW, Room B102, Washington, DC 20460, telephone (202)566–2426; or at the Office of Federal Register, 800 North Capitol Street NW, Suite 700, Washington, DC 20408.

¹ Methods 9221A, B; 9222A, B, C; 9221D; and 9223 are contained in Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992, 19th edition, 1995, or 20th edition, 1998, American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005. The cited methods published in any of these three editions may be used.

² The time from sample collection to initiation of the analysis may not exceed 30 hours. Systems are encouraged but not required to hold samples below 10 degrees Celsius during transit.

³ Lactose broth, as commercially available, may be used in lieu of lauryl tryptose broth, if the system conducts at least 25 parallel tests between this medium and lauryl tryptose broth using the water normally tested, and this comparison demonstrates that the false–positive rate and false–negative rate for total coliforms, using lactose broth, is less than 10 percent.

⁴ If inverted tubes are used to detect gas production, the media should cover these tubes at least one–half to two–thirds after the sample is added.

⁵ No requirement exists to run the completed phase on 10 percent of all total coliform–positive confirmed tubes.

⁶ MI agar also may be used. Preparation and use of MI agar is set forth in the article, “New medium for the simultaneous detection of total coliform and *Escherichia coli* in water,” by Brenner, K.P., et al., 1993, Applied Environmental Microbiology 59:3534–3544. Also available from the Office of Water Resource Center (RC–4100), 401 M Street SW, Washington, DC 20460, EPA 600/J–99/225.

⁷ Six–times formulation strength may be used if the medium is filter–sterilized rather than autoclaved.

⁸ The ONPG–MUG Test is also known as the Autoanalysis Colilert System.

⁹ The Colisure Test may be read after an incubation time of 24 hours. A description of the Colisure Test, February 28, 1994, may be obtained from IDEXX Laboratories, Inc., One IDEXX Drive, Westbrook, ME 04092.

¹⁰ A description of the E*Colite Test, “Presence/Absence for Coliforms and *E. Coli* in Water,” December 21, 1997, is available from Charm Sciences, Inc., 25 Franklin Street, Malden, MA 02148–4120.

¹¹ A description of the m–ColiBlue24 Test, August 17, 1999, is available from the Hach Company, 100 Dayton Avenue, Ames, IA 50010.

¹² The department strongly recommends that laboratories evaluate the false–positive and false–negative rates for the method(s) they use for monitoring total coliforms. It also encourages laboratories to establish false–positive and false–negative rates within their own laboratory and sample matrix (drinking water or source water) with the intent that if the method chosen has an unacceptable false–positive or false–negative rate, another method may be used. The department suggests that laboratories perform these studies on a minimum of 5 percent of all total coliform–positive samples, except for those methods for which verification/confirmation is already required, e.g., the M–Endo and LES Endo Membrane Filter Tests, Standard Total Coliform Fermentation Technique, and Presence–Absence Coliform Test. Methods for establishing false–positive and false–negative rates may be based on lactose fermentation, the rapid test for beta–galactosidase and cytochrome oxidase, multitest identification systems, or equivalent confirmation tests. False–positive and false–negative information is often available in published studies or from the manufacturer(s).

¹³ The Readycult Coliforms 100 Presence/Absence Test is described in the document, “Readycult Coliforms 100 Presence/Absence Test for Detection and Identification of Coliform Bacteria and *Escherichia coli* in Finished Waters,” November 2000, Version 1.0, available from EM Science, 480 S. Democrat Road, Gibbstown, NJ 08027–1297, telephone: (800)222–0342, E–mail address: adellenbusch@emscience.com.

¹⁴ Membrane Filter Technique using Chromocult Coliform Agar is described in the document, “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, available from EM Science, 480 S. Democrat Road, Gibbstown, NJ 08027–1297, telephone: (800)222–0342, E–mail address: adellenbusch@emscience.com.

¹⁵ Colitag product for the determination of the presence/absence of total coliforms and *E. coli* is described in “Colitag Product as a Test for Detection and Identification of Coliforms and *E. coli* Bacteria in Drinking Water and Source Water as Required in National Primary Drinking Water Regulations,” August 2001, available from CPI International, Inc., 5580 Skylane Blvd., Santa Rosa, CA 95403, telephone: (800)878-7654, Internet address: www.cpiinternational.com.

Item 7. Adopt the following **new** subparagraph 41.2(1)“e”(6)(10):

10. Colitag, as described in footnote 15 of the Total Coliform Methodology Table in 41.2(1)“e”(3).

Item 8. Amend subparagraph 41.3(1)“b” as follows:

(1) IOC MCLs. The following table specifies the MCLs for IOCs:

Contaminant	EPA Contaminant Code	Maximum Contaminant Level (mg/L)
Antimony	1074	0.006
Arsenic*	1005	0.05 (until January 23, 2006) 0.010 (beginning January 23, 2006)
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 arsenic MCL changed from 0.05 mg/L to 0.010 mg/L on January 23, 2006.

**The recommended fluoride level is 1.1 milligrams per liter or the level as calculated from “Water Fluoridation, a Manual for Engineers and Technicians” Table 2-4 published by the U.S. Department of Health and Human Services, Public Health Service (September 1986). At this optimum level in drinking water fluoride has been shown to have beneficial effects in reducing the occurrence of tooth decay.

Item 9. Amend the introductory paragraph in subrule 41.5(1) as follows:

41.5(1) *MCLs and other requirements for organic chemicals.* Maximum contaminant levels for ~~three~~ two classes of organic chemical contaminants specified in 41.5(1)“b” apply to community water systems and nontransient noncommunity water systems as specified herein. The ~~three~~ two referenced organic chemical classes are volatile organic chemicals (VOCs); and synthetic organic chemicals (SOCs); and trihalomethanes.

The requirements also contain analytical method requirements and monitoring requirements referenced in 41.5(1)“b” and “c.” Best available technology (BAT) for control of these organic contaminants is referenced in 567—paragraph 43.3(10)“a.”

Item 10. Amend paragraph 41.5(1)“a” as follows:

a. Applicability. The maximum contaminant levels for volatile and synthetic organic contaminants apply to community and nontransient noncommunity water systems. Compliance with the volatile and synthetic organic contaminant maximum contaminant level is calculated pursuant to 41.5(1)“b.” ~~The maximum contaminant level of 0.10 mg/L for total trihalomethanes (the sum of the concentrations of bromodichloromethane, tribromomethane (bromoform), dibromoethane, and trichloromethane (chloroform)) applies to all surface water community public water systems (CWS) serving 10,000 or more persons and all IGW CWS serving 10,000 or more persons until December 31, 2001, after which time the systems must comply with 41.6(455B). This 0.10 mg/L MCL also applies to all groundwater CWS serving 10,000 or more persons until December 31, 2003, after which time the systems must comply with 41.6(455B). Compliance with the maximum contaminant level for total trihalomethanes is calculated pursuant to 41.5(1)“e”(4).~~

Item 11. Amend paragraph 41.5(1)“b” as follows:

b. Maximum contaminant levels (MCLs) and analytical methodology for organic compounds. The maximum contaminant levels for organic chemicals are listed in the following table.

Analyses for the contaminants in this subrule shall be conducted using the following methods, or their equivalent as approved by EPA.

(1) Table:

ORGANIC CHEMICAL 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	0.0005
Carbon tetrachloride	2982	0.005	502.2, 524.2, 551.1	0.0005
Chlorobenzene (mono)	2989	0.1	502.2, 524.2	0.0005
1,2-Dichlorobenzene (ortho)	2968	0.6	502.2, 524.2	0.0005
1,4-Dichlorobenzene (para)	2969	0.075	502.2, 524.2	0.0005
1,2-Dichloroethane	2980	0.005	502.2, 524.2	0.0005
1,1-Dichloroethylene	2977	0.007	502.2, 524.2	0.0005
cis-1,2-Dichloroethylene	2380	0.07	502.2, 524.2	0.0005
trans-1,2-Dichloroethylene	2979	0.1	502.2, 524.2	0.0005
Dichloromethane	2964	0.005	502.2, 524.2	0.0005
1,2-Dichloropropane	2983*	0.005	502.2, 524.2	0.0005
Ethylbenzene	2992	0.7	502.2, 524.2	0.0005
Styrene	2996	0.1	502.2, 524.2	0.0005
Tetrachloroethylene	2987	0.005	502.2, 524.2, 551.1	0.0005
Toluene	2991	1	502.2, 524.2	0.0005
1,1,1-Trichloroethane	2981	0.2	502.2, 524.2, 551.1	0.0005
Trichloroethylene	2984	0.005	502.2, 524.2, 551.1	0.0005
1,2,4-Trichlorobenzene	2378	0.07	502.2, 524.2	0.0005
1,1,2-Trichloroethane	2985	0.005	502.2, 524.2, 551.1	0.0005
Vinyl chloride	2976	0.002	502.2, 524.2	0.0005
Xylenes (total)	2955*	10	502.2, 524.2	0.0005
Synthetic Organic Chemicals (SOCs):				
Alachlor ³	2051	0.002	505, 507, 508.1, 525.2, 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, 525.2, 551.1, Syngenta AG-625	0.0001
Benzo(a)pyrene	2306	0.0002	525.2, 550, 550.1	0.00002
Carbofuran	2046	0.04	531.1, 531.2, 6610	0.0009
Chlordane ³	2959	0.002	505, 508, 508.1, 525.2	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	0.0001
Dalapon	2031	0.2	515.1, 515.3, 515.4, 552.1, 552.2	0.001
1,2-Dibromo-3-chloropropane (DBCP)	2931	0.0002	504.1, 551.1	0.00002
Di(2-ethylhexyl)adipate	2035	0.4	506, 525.2	0.0006
Di(2-ethylhexyl)phthalate	2039	0.006	506, 525.2	0.0006
Dinoseb ⁶⁵	2041	0.007	515.1, 515.2, 515.3, 515.4, 555	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, 551.1	0.00001
Ethylene dibromide (EDB)	2946	0.00005	504.1, 551.1	0.00001
Glyphosate	2034	0.7	547, 6651	0.006
Heptachlor ³	2065	0.0004	505, 508, 508.1, 525.2, 551.1	0.00004
Heptachlor epoxide ³	2067	0.0002	505, 508, 508.1, 525.2, 551.1	0.00002
Hexachlorobenzene ³	2274	0.001	505, 508, 508.1, 525.2, 551.1	0.0001
Hexachlorocyclopentadiene ³	2042	0.05	505, 508, 508.1, 525.2, 551.1	0.0001
Lindane (gamma BHC) ³	2010	0.0002	505, 508, 508.1, 525.2, 551.1	0.00002
Methoxychlor ³	2015	0.04	505, 508, 508.1, 525.2, 551.1	0.0001
Oxamyl	2036	0.2	531.1, 531.2, 6610	0.002
Pentachlorophenol	2326	0.001	515.1, 515.2, 515.3, 515.4, 525.2, 555, D5317-93	0.00004
Picloram ^{3,65}	2040	0.5	515.1, 515.2, 515.3, 515.4, 555, D5317-93	0.0001
Polychlorinated biphenyls ⁴ (as decachlorobiphenyl)	2383	0.0005	508A	0.0001

Contaminant	EPA Contaminant Code	MCL (mg/L)	Methodology ¹	Detection Limit (mg/L)
(as Arochlors) ³			505, 508, 508.1, 525.2	
Simazine ³	2037	0.004	505, 507, 508.1, 525.2, 551.1	0.00007
2,3,7,8-TCDD (dioxin)	2063	3x10 ⁻⁸	1613	5x10 ⁻⁹
Contaminant	EPA Contaminant Code	MCL (mg/L)	Methodology ¹	Detection Limit (mg/L)
2,4,5-TP ^{6s} (Silvex)	2110	0.05	515.1, 515.2, 515.3, 515.4, 555, D5317-93	0.0002
Toxaphene ³	2020	0.003	505, 508, 508.1, 525.2	0.001
Total Trihalomethanes (TTHMs)⁵:				
Total Trihalomethanes (the sum of the concentrations of bromodichloromethane, dibromochloromethane, tribromomethane (bromoform), and trichloromethane (chloroform))	2950	-0.10-	502.2, 524.2, 551.1	

*As of January 1, 1999, the contaminant codes for the following compounds were changed from the Iowa Contaminant Code to the EPA Contaminant Code:

Contaminant	Iowa Contaminant Code (Old)	EPA Contaminant Code (New)
1,2 Dichloropropane	2325	2983
Xylenes (total)	2974	2955

¹ Analyses for the contaminants in this section 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, EPA West, 1301 Constitution Avenue NW, Room B102, Washington, DC 20460 (telephone: (202)566-2426); or at the Office of the Federal Register, 800 North Capitol Street NW, Suite 700, Washington, DC. The following methods are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161 (telephone: (800)553-6847).

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.

Method 1613 "Tetra-through Octa-Chlorinated Dioxins and Furans by Isotope-Dilution HRGC/HRMS," EPA-821-B-94-005, October 1994 (NTIS PB95-104774).

The following American Public Health Association (APHA) documents are available from APHA, 1015 Fifteenth Street NW, Washington, DC 20005.

Supplement to the 18th Edition of Standard Methods for the Examination of Water and Wastewater, 1994, Standard Methods for the Examination of Water and Wastewater, 19th edition, 1995, or 20th edition, 1998 (any of the three editions may be used), APHA: Method 6610.

Standard Methods for the Examination of Water and Wastewater, 18th edition, 1992, 19th edition, 1995, or 20th edition, 1998, (any of the three editions may be used), APHA: Method 6651.

The following American Society for Testing and Materials (ASTM) method is available from ASTM International, 100 Barr Harbor Drive, WestConshohocken, PA 19428.

Annual book of ASTM Standards, 1999, Vol. 11.02 (or any edition published after 1993), ASTM: D5317-93.

Methods 515.3 and 549.2 are available from U.S. 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, available at 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 Photocolumn Derivatization," Revision 1.0, September 2001, EPA 815/B-01/002, available at www.epa.gov/safewater/methods/sourcalt.html.

Syngenta AG-625 Method, "Atrazine in Drinking Water by Immunoassay," February 2001, is available from Syngenta Crop Protection, Inc., 410 Swing Road, P.O. Box 18300, Greensboro, NC 27419, telephone (336)632-6000.

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).

² Reserved.

³ Substitution of the detector specified in Method 505, 507, 508, or 508.1 for the purpose of achieving lower detection limits is allowed as follows. Either an electron capture or nitrogen-phosphorus detector may be used provided all regulatory requirements and quality control criteria are met.

⁴ PCBs are qualitatively identified as Arochlors 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.

⁵ The TTHM MCL for surface water or influenced groundwater CWS and NTNC systems serving over 10,000 persons was changed to 0.080 mg/L on January 1, 2002. All remaining CWS and NTNC will be required to comply with the 0.080 mg/L MCL on January 1, 2004. See rule 41.6(455B) for additional requirements.

⁶ Accurate 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.

(2) Organic chemical compliance calculations (~~other than total trihalomethanes~~). Compliance with 41.5(1)“b”(1) shall be determined based on the analytical results obtained at each sampling point. If one sampling point is in violation of an MCL listed in 41.5(1)“b”(1), 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. If the system is in violation of an MCL, the water supplier is required to give notice to the department in accordance with 567—subrule 42.4(1) and to notify the public as required by 567—42.1(455B).

1. Systems monitoring more than once per year for VOC or SOC contaminants. For systems which monitor more than once per year, compliance with the MCL is determined by a running annual average of all samples collected at each sampling point.

2. Systems monitoring annually or less frequently for VOC contaminants. Systems which 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 running annual average to exceed the MCL at any sampling point, the system is immediately out of compliance with the MCL.

3. Systems monitoring annually or less frequently for SOC contaminants. Systems which monitor annually or less frequently and whose SOC sample result exceeds the regulatory detection limit specified in subparagraph 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 running annual average to exceed the MCL at any sampling point, the system is immediately out of compliance with the MCL.

(3) Treatment techniques for acrylamide and epichlorohydrin. Each public water supply system 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 levels specified as follows:

Acrylamide = 0.05% dosed at 1 ppm (or equivalent)

Epichlorohydrin = 0.01% dosed at 20 ppm (or equivalent)

Certifications can rely on information provided by manufacturers or third parties, as approved by the department.

Item 12. Amend paragraph 41.6(1)“a” as follows:

41.6(1) ~~Disinfection byproducts~~ Stage 1 disinfection byproducts requirements.

a. *Applicability.*

(1) This rule establishes criteria under which CWS and NTNC public water supply systems 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 listed in this rule and the maximum residual disinfectant levels (MRDL) and treatment technique requirements for disinfection byproduct precursors listed in 567—43.6(455B).

(2) Rescinded IAB 1/7/04, effective 2/11/04.

(3) 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 compliance with the maximum contaminant level is not required until the dates stated below.

~~1. Surface water and IGW CWS and NTNC. CWS and NTNC systems using surface water or groundwater under the direct influence of surface water in whole or in part and which serve 10,000 or more persons must comply with this rule beginning January 1, 2002. CWS and NTNC systems serving fewer than 10,000 persons must comply with this rule beginning January 1, 2004.~~

~~2. Groundwater CWS and NTNC.~~

~~• Community water systems which use a groundwater source, which serve a population of 10,000 or more individuals, and which add a disinfectant or oxidant to the water in any part of the drinking water treatment process shall monitor for only total trihalomethanes in accordance with 41.6(1)“c”(1) and (4), 41.6(1)“d,” 41.6(1)“e”(1) and (4), and 41.6(1)“f,” until December 31, 2003. The MCL for these systems is 0.010 mg/L until December 31, 2003.~~

~~• Beginning January 1, 2004, all CWS and NTNC systems using only groundwater not under the direct influence of surface water must comply with this rule.~~

1. CWS and NTNC systems using surface water or groundwater under the direct influence of surface water 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 CWS and NTNC systems covered by subparagraph “a”(1) must comply with this rule by January 1, 2004.

3. Rescinded IAB 1/7/04, effective 2/11/04.

(4) Consecutive systems. Consecutive systems that provide water containing a disinfectant or oxidant are required to comply with this rule. ~~A consecutive system may be incorporated into the sampling plan of the supply that produces the water (the primary water supplier), provided:~~

~~1. There is a mutual signed agreement between the primary and consecutive system supplied by that primary system that states the primary system will be responsible for the compliance of its consecutive system with this rule, regardless of additional treatment by the consecutive system.~~

~~2. Beginning with the primary water supply, each successive consecutive system must also be included in the primary supply’s sampling plan, so that there is no system with its own sampling plan between the primary supply and the consecutive supply covered by the primary supply’s plan.~~

~~3. It is understood by the primary and all consecutive systems that, even if only one system in the sampling plan has a violation, all systems in the sampling plan will receive the violation and be required to conduct public notification.~~

~~4. The department receives a copy of the signed agreement and approves the sampling plan prior to the beginning of the compliance period.~~

~~If a mutual agreement is not possible, each system (the primary system and each consecutive system) is responsible for compliance with this rule for its specific system.~~

(5) 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 are required to conduct the monitoring for the applicable disinfectants or oxidants and disinfection byproducts during operation of each source. The system must comply with this rule during the use of each water source.

Item 13. Amend paragraph 41.6(1)“b” as follows:

b. *Maximum contaminant levels for disinfection byproducts.* The maximum contaminant levels (MCLs) for disinfection byproducts are as follows:

Disinfection byproduct	MCL (mg/L)
Bromate	0.010
Chlorite	1.0
Haloacetic acids (HAA5)	0.060
Total trihalomethanes (TTHM)*	0.080 0.10 until December 31, 2003*

*The MCL of 0.10 mg/L only applies to a CWS using groundwater sources that serves at least 10,000 people. Beginning January 1, 2004, the TTHM MCL for all CWS and NTNC systems regardless of source type and system size is 0.080 mg/L. The MCL changed from 0.10 mg/L to 0.080 mg/L effective January 1, 2002 for CWS serving at least 10,000 people and effective January 1, 2004 for all other CWS and NTNC systems which are subject to this rule.

Beginning on the date listed in the following table, a system must comply with the total trihalomethanes MCL and the haloacetic acid MCL as a locational running annual average at each monitoring location.

<u>System Size (number of people served)</u>	<u>Date system must comply with MCL at each sampling location*</u>
<u>Systems that are not part of a combined distribution system and systems that serve the largest population in the combined distribution system</u>	
<u>System serving at least 100,000 people</u>	<u>April 1, 2012</u>
<u>System serving 50,000 – 99,999 people</u>	<u>October 1, 2012</u>
<u>System serving 10,000 – 49,999 people</u>	<u>October 1, 2013</u>
<u>System serving fewer than 10,000 people</u>	<ul style="list-style-type: none"> • <u>October 1, 2013 for all GW systems and for SW/IGW systems that did not collect <i>Cryptosporidium</i> source water samples.</u> • <u>October 1, 2014 for SW/IGW systems that collected <i>Cryptosporidium</i> source water samples.</u>
<u>Other systems that are part of a combined distribution system</u>	
<u>Consecutive or wholesale system</u>	<u>At the same time as the system with the earliest compliance date in the combined distribution system.</u>

*The department may grant up to an additional 24 months for compliance with the MCLs and operational evaluation levels if the system requires capital improvements to comply with an MCL.

Item 14. Amend subparagraph 41.6(1)“c”(1)(6) as follows:

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 surface water or groundwater under the direct influence of surface water 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 at least 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 treatment techniques.
- ~~If providing water to one or more consecutive systems, and the consecutive systems have agreed to the sampling plan by the primary supplier of the water pursuant to 41.6(1)“a”(4), the sampling plan of the primary water supplier must reflect the entire distribution system.~~

Item 15. Amend subparagraph 41.6(1)“c”(2)(2) as follows:

2. Reduced monitoring. ~~The department may allow systems required to analyze for bromate to reduce monitoring from monthly to once per quarter if the system demonstrates that the average source water bromide concentration is less than 0.05 mg/L based upon representative monthly bromide measurements for one year. The system may remain on reduced bromate monitoring until the running annual average source water bromide concentration, computed quarterly, is greater than or equal to 0.05 mg/L based upon representative monthly measurements. If the running annual average source water bromide concentration is greater than or equal to 0.05 mg/L, the system must resume routine monitoring required by 41.6(1)“e”(2)“1.”~~
A system may reduce monitoring from monthly to quarterly, if the system’s running annual average bromate concentration is less than or equal to 0.0025 mg/L based on monthly bromate measurements for the most recent four quarters. If the system previously qualified for reduced bromate monitoring and is on quarterly sampling frequency, it may remain on reduced monitoring as long as the running annual average of the bromate samples is less than or equal to 0.0025 mg/L. If the running annual average 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 Methods 317.0 Revision 2.0, 326.0, or 321.8.

Item 16. Amend subparagraph 41.6(1)“c”(4) as follows:

(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	Four water samples per quarter per treatment plant	At least 25 percent of all samples collected each quarter at locations representing maximum residence time. Remaining samples taken at locations representative of at least average residence time in the distribution system and representing the entire distribution system, taking into account number of persons served, different sources of water, and different treatment methods. ¹
SW/IGW ³ system serving 500 – 9,999 persons	One water sample per quarter per treatment plant	Locations representing maximum residence time. ¹

SW/IGW ³ system serving <500 persons	One sample per year per treatment plant during month of warmest water temperature	Locations representing maximum residence time. 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 maximum residence time in the distribution system, until system meets reduced monitoring criteria in 41.6(1) “c”(4)“2,” fourth <u>second</u> unnumbered paragraph.
System using only non-IGW groundwater using chemical disinfectant and serving ≥10,000 persons	One water sample per quarter per treatment plant ²	Locations representing maximum residence time. ¹
System using only non-IGW groundwater using chemical disinfectant and serving <10,000 persons	One sample per year per treatment plant during month of warmest water temperature	Locations representing maximum residence time. 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 maximum residence time in the distribution system, until system meets reduced monitoring criteria in 41.6(1) “c”(4)“2,” fourth <u>second</u> unnumbered paragraph.

¹ If 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 maximum residence time 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.

² Multiple wells drawing water from a single aquifer may be considered one treatment plant for determining the minimum number of samples required, with department approval.

³ SW/IGW indicates those systems that use either surface water (SW) or groundwater under the direct influence of surface water (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 your . . .	You may reduce monitoring to this level
SW/IGW ¹ system serving ≥10,000 persons which has 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	One sample per treatment plant per quarter at distribution system location reflecting maximum residence time.
SW/IGW ¹ system serving 500 – 9,999 persons that has 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	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
SW/IGW ¹ system serving <500 persons	Any SW/IGW ¹ system serving <500 persons may not reduce its monitoring to less than one sample per treatment plant per year.	
System using only non-IGW groundwater using chemical disinfectant and serving ≥10,000 persons	TTHM annual average ≤0.040 mg/L and HAA5 annual average ≤0.030 mg/L	One sample per treatment plant per year at distribution system location reflecting maximum residence time during month of warmest water temperature.
System using only non-IGW groundwater 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	One sample per treatment plant per three-year monitoring cycle at distribution system location reflecting maximum residence time during month of warmest water temperature, with the three-year cycle beginning on January 1 following quarter in which system qualifies for reduced monitoring.

	year.
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¹ SW/IGW indicates those systems that use either surface water (SW) or groundwater under the direct influence of surface water (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 which must monitor quarterly) or the result of the sample (for systems which must monitor no more frequently than annually) is less than or equal to 0.060 mg/L for TTHMs and is 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 groundwater not under the direct influence of surface water 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 the department’s discretion.

Item 17. Amend subparagraph 41.6(1)“d” as follows:

d. Analytical requirements for disinfection byproducts.

(1) Systems must use only the analytical method(s) specified in this paragraph, or equivalent methods as determined by EPA, to demonstrate compliance with the requirements of this rule.

(2) Systems must measure disinfection byproducts by the methods (as modified by the footnotes) listed in the following table:

Approved Methods for Disinfection Byproduct Compliance Monitoring

Methodology ²	EPA	Standard- Methods	Byproduct measured ¹			
			TTHM	HAA5	Chlorite ⁴	Bromate
P&T/GC/EICD & PID	502.2 ²		X			
P&T/GC/MS	524.2		X			
LLE/GC/ECD	551.1		X			
LLE/GC/ECD		6251-B		X		
SPE/GC/ECD	552.1			X		
LLE/GC/ECD	552.2			X		
Amperometric-Titration		4500-ClO ₂ E			X	
IC	300.0				X	
IC	300.1				X	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. Copies of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426-4791. Documents may be inspected at EPA’s Drinking Water Docket, 401 M Street SW, Washington, DC 20460 (telephone: (202)260-3027); or at the Office of Federal Register, 800 North Capitol Street NW, Suite 700, Washington, DC.

The following method is available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428: Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 1996: Method D 1253-86.

The following methods are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161 (telephone: (800)553-6847):

—“Determination of Inorganic Anions in Drinking Water by Ion Chromatography, Revision 1.0,” EPA-600/R-98/118, 1997 (available through NTIS, PB98-169196): Method 300.1.

—Methods for the Determination of Inorganic Substances in Environmental Samples, EPA-600/R-93/100, August 1993, (NTIS PB94-121811), Method 300.0.

—Methods for the Determination of Organic Compounds in Drinking Water—Supplement II, EPA-600/R-92-129, August 1992 (NTIS PB92-207703): Method 552.1.

—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, 524.2, 551.1, and 552.2.

The following methods are available from the American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005:

—Standard Methods for the Examination of Water and Wastewater, 19th edition, American Public Health Association, 1995: Methods: 4500-Cl-D, 4500-Cl-E, 4500-Cl-F, 4500-Cl-G, 4500-Cl-H, 4500-Cl-I, 4500-ClO₂-D, 4500-ClO₂-E, 6251-B, and 5910-B.

—Standard Methods for the Examination of Water and Wastewater, Supplement to the 19th edition, American Public Health Association, 1996: Methods: 5310-B, 5310-C, and 5310-D.

¹—X indicates method is approved for measuring specified disinfection byproduct.

²—ECD = electron capture detector IC = ion chromatography P&T = purge and trap

—EICD = electrolytic conductivity detector LLE = liquid/liquid extraction PID = photoionization detector

—GC = gas chromatography MS = mass spectrometer SPE = solid phase extractor

³—If TTHMs are the only analytes being measured in the sample, then a PID is not required.

⁴—Amperometric titration may be used for routine daily monitoring of chlorite at the entrance to the distribution system, as prescribed in 41.6(1)“c”(3)“1.” Ion chromatography must be used for routine monthly monitoring of chlorite and additional monitoring of chlorite in the distribution system, as prescribed in 41.6(1)“c”(3)“2” and “3.”

<u>Contaminant and Methodology</u>	<u>EPA Method¹</u>	<u>Standard Method²</u>	<u>ASTM Method³</u>
<u>TTHM</u>			
<u>P&T/GC/EICD & PID</u>	<u>502.2⁴</u>		
<u>P&T/GC/MS</u>	<u>524.2</u>		
<u>LLE/GC/ECD</u>	<u>551.1</u>		
<u>HAA5</u>			
<u>LLE (diazomethane)/GC/ECD</u>		<u>6251 B⁵</u>	
<u>SPE (acidic methanol)/GC/ECD</u>	<u>552.1⁵</u>		
<u>LLE (acidic methanol)/GC/ECD</u>	<u>552.2, 552.3</u>		
<u>Bromate</u>			
<u>Ion chromatography</u>	<u>300.1</u>		<u>D 6581-00</u>
<u>Ion chromatography & post column reaction⁹</u>	<u>317.0 Rev. 2.0⁶, 326.0⁶</u>		
<u>IC/ICP-MS⁹</u>	<u>321.8^{6, 7}</u>		
<u>Chlorite</u>			
<u>Amperometric titration</u>		<u>4500-ClO₂ E⁸</u>	
<u>Spectrophotometry</u>	<u>327.0 Rev. 1.1⁸</u>		
<u>Ion chromatography</u>	<u>300.0, 300.1, 317.0 Rev. 2, 326.0</u>		

ECD = electron capture detector

IC = ion chromatography

P&T = purge and trap

EICD = electrolytic conductivity detector

LLE = liquid/liquid extraction

PID = photoionization detector

GC = gas chromatography

MS = mass spectrometer

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 of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426-4791. Documents may be inspected at EPA’s Drinking Water Docket, 401 M Street SW, Washington, DC 20460 (telephone: (202)260-3027); or at the Office of Federal Register, 800 North Capitol Street NW, Suite 700, Washington, DC.

¹ EPA: The following methods are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161 (telephone: (800)553-6847):

Method 300.0 and 321.8: Methods for the Determination of Organic and Inorganic Compounds in Drinking Water, Volume 1, USEPA, August 2000, EPA 815-R-00-014 (available through 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 (available through 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.” USEPA, 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” USEPA, 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,” USEPA, 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 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,” USEPA, July 2003, EPA-815-B-03-002.

² 4500-ClO₂ E: Standard Methods for the Examination of Water and Wastewater, 19th and 20th editions, American Public Health Association, 1995 and 1998, respectively, which is available from the American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005.

³ Method D 6581-00: American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428: Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 2001 (or any year containing the cited version).

⁴ If TTHMs are the only analytes being measured in the sample, then a PID is not required.

⁵ The samples must be extracted within 14 days of sample collection.

⁶ Ion chromatography and post column reaction or IC/ICP-MS must be used for bromate analysis for purposes of demonstrating eligibility of reduced monitoring.

⁷ Samples must be preserved at sample collection with 50 mg ethylenediamine (EDA)/L of sample and must be analyzed within 28 days.

⁸ Amperometric titration or spectrophotometry may be used for routine daily monitoring of chlorite at the entrance to the distribution system, as prescribed in 41.6(1)“c”(3)“1.” Ion chromatography must be used for routine monthly monitoring of chlorite and additional monitoring of chlorite in the distribution system, as prescribed in 41.6(1)“c”(3)“2” and “3.”

⁹ These are the only methods approved for reduced bromate monitoring under 41.6(1)“c”(2)“2.”

(3) Certified laboratory requirements. Analyses under this rule for disinfection byproducts shall only be conducted by laboratories that have been certified by the department and are in compliance with the requirements of 567-Chapter 83, except as specified under 41.6(1)“d”(4). The performance evaluation sample acceptance limits and minimum reporting levels are listed in 567—83.6(7)“a”(6).

(4) Daily chlorite samples at the entrance to the distribution system must be measured by a Grade II, III or IV operator meeting the requirements of 567—Chapter 81, any person under the supervision of a Grade II, III or IV operator meeting the requirements of 567—Chapter 81, or a laboratory certified by the department to perform analysis under 567—Chapter 83.

Item 18. Amend subrule 41.6(2) as follows:

41.6(2) Reserved. *Stage 2 Initial Distribution System Evaluation.* The department is adopting the requirements for the Stage 2 Initial Distribution System Evaluation (IDSE) listed in 40 CFR 141.600-605 by reference. This regulation establishes monitoring and other requirements for identifying compliance monitoring locations that will be used to determine compliance with maximum contaminants levels for total trihalomethanes and haloacetic acids. All CWS required to comply with 567-41.6(1) and all NTNC serving at least 10,000 people that are required to comply with 567-41.6(1) are required to comply with this subrule. These requirements 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.

Item 19. Adopt the following **new** subrule 41.6(3):

41.6(3) Stage 2 disinfection byproducts requirements. The requirements of this subrule constitute national primary drinking water regulations. This subrule establishes monitoring and other requirements for achieving compliance with MCLs 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 ultraviolet light or deliver water that has been treated with a primary or residual disinfectant other than ultraviolet light must comply with the requirements in this subrule.

(1) *Schedule.* Systems must comply with the dates listed in the appropriate schedule. For the purposes of this subrule, the combined distribution system (CDS) as defined in 567-40.2(455B) 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 combined distribution system. All systems included in a combined distribution system 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 combined distribution system (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	<ul style="list-style-type: none"> • October 1, 2013 for all GW systems and any SW/IGW systems that did not conduct <i>Cryptosporidium</i> sampling under 43.11(3)“b”(2)(4) • October 1, 2014 for SW/IGW systems that conducted <i>Cryptosporidium</i> sampling under 43.11(3)“b”(2)(4)

(2) *Initiation of compliance monitoring under Stage 2.* Systems will switch from Stage 1 compliance monitoring (41.6(1)) to Stage 2 monitoring as follows.

1. Systems required to conduct quarterly monitoring must start monitoring in the first full calendar quarter that includes the compliance date in the previous table.

2. Systems that conducted IDSE monitoring and have an approved report that are required to conduct monitoring 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 to the department for approval 6 months prior to the compliance date in the previous table.

(3) *Timing of initial determination of compliance under Stage 2.*

1. Systems required to conduct quarterly monitoring must make compliance calculations at the end of the fourth calendar quarter that follows the compliance date, or earlier of the LRAA calculated based on fewer than four quarters of data would cause the MCL to be exceeded regardless of the results of subsequent sampling. Compliance determination must continue at the end of each subsequent quarter.

2. Systems required to conduct monitoring 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, the system must calculate the compliance with the MCL 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 monitoring 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 the requirements of 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 system 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 disinfection byproduct monitoring plan to 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) report, that report contains all of the plan elements and meets this requirement.

(2) If the system does not have an approved IDSE-SMP report and does not have sufficient monitoring locations from its initial disinfection byproduct sampling plan, the system 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 report and has more monitoring locations from its initial Stage 1 disinfection byproduct sampling plan than what is required under the Stage 2 compliance monitoring, the system 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) If the system has an approved IDSE-SMP report, that report contains all of the plan elements and meets this requirement.

(5) All plans must be reviewed by the system every three years and updated as system conditions change (such as changes in water quality or hydraulics, etc.).

1. A system may revise its monitoring plan to reflect changes in treatment, distribution system operations, and layout (including new service areas), or other factors that may affect TTHM or HAA5 formation, or for department-approved reasons.

2. The system must consult with the department regarding the need for changes and the appropriateness of changes. The system must replace existing compliance monitoring locations with 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 the system’s monitoring plan.

(6) Systems are also required to maintain the disinfectant and MRDL elements of the Stage 1 monitoring plan per 43.6(1)“c”(1)(5) and 41.6(1)“c”(1)(6).

(7) All systems are required to have a valid disinfection byproducts 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 disinfection byproducts monitoring plan and on the schedule specified in 41.6(3)“a”(1). Each system must monitor the disinfection byproducts at the minimum number of locations identified in the following table.

Routine Monitoring

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
Groundwater	<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 disinfection byproduct concentrations.

(2) Systems on quarterly monitoring frequency must collect samples for TTHM and HAA5 every 90 days at each monitoring location, except SW/IGW systems serving 500 – 3,300 people. Each sample collected at each location is analyzed for both TTHM and HAA5 components.

(3) Systems on annual monitoring and SW/IGW systems serving 500-3,300 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. Only one location is required if the highest TTHM concentration and highest HAA5 concentration occurs at the same location.

(4) Analytical methods. Systems must use an approved method listed in 41.6(1)“d”(2) for TTHM and HAA5 analyses in this subrule. Analyses must be conducted by laboratories certified for disinfection byproducts analyses under IAC 567-Chapter 83.

d. Reduced monitoring. A system may reduce monitoring to the level specified in the Reduced Monitoring Table any time the locational running annual average 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 the provisions of this rule may be used to qualify for reduced monitoring.

Reduced Monitoring

Source water type	Population size category	Monitoring frequency¹	Distribution system monitoring location sites per monitoring period²
SW/IGW	<500	per year	Monitoring may not be reduced
	500-3,300	per year	1 sample per year at the 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: one at the location and during the quarter with the highest TTHM single measurement; one at the location and during the quarter with the highest HAA5 single measurement
	10,000-49,999	per quarter	2 samples: one at the highest TTHM LRAA location and one at the highest HAA5 LRAA location
	50,000-249,999	per quarter	4 samples: one sample each at the highest two TTHM LRAA locations and one sample each at the highest two HAA5 LRAA locations
Groundwater	<500	every third year	1 sample per year at the 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 the 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: one at the location and during the quarter with the highest TTHM single measurement; one at the location and during the quarter with the highest HAA5 single measurement
	100,000-499,999	per quarter	2 samples: one at the highest TTHM LRAA location and one at the highest HAA5 LRAA location

¹Systems on quarterly monitoring 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 running annual average TOC level, before any treatment, must be less than or equal to 4.0 mg/L at each treatment plant treating surface water or influenced groundwater, based on the monitoring conducted under 43.6(2)“b”, in order to qualify for reduced monitoring.

(2) Continued reduced monitoring frequency. Systems may remain on 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 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 annual or less frequent monitoring 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. 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 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 annual or less frequent monitoring 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 running annual average 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.

(5) Remaining on reduced monitoring from Stage 1 to Stage 2 transition. A system may remain on reduced monitoring after the dates listed in 41.6(3)“a”(1) if all of the following criteria are met:

1. The system qualified for a 40/30 certification or received a very small system waiver under the IDSE;

2. The system meets the reduced monitoring criteria of this paragraph; and

3. The system has not changed or added locations for disinfection byproduct monitoring from those used under the Stage 1 rule.

If the three criteria are not met, the system must return to routine monitoring.

e. Increased monitoring.

(1) Systems that are monitoring annually or less frequently 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 less frequently 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. The 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 less frequently that is in violation of the MCL for TTHM or HAA5, based upon the LRAA, must increase monitoring to quarterly at all locations. The quarterly samples must be analyzed for both TTHM and HAA5 components. The LRAA is calculated on four consecutive quarters of

monitoring or based on fewer quarters of data if the MCL would be exceeded regardless of the monitoring results of subsequent quarters.

(2) Systems on quarterly monitoring 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. 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. The system may not have any monitoring violations during the period.

f. Operational evaluation level.

(1) TTHM operational evaluation level. The TTHM operational evaluation level is determined by the sum of the two previous quarters’ TTHM results plus twice the current quarter’s TTHM result, divided by 4 to determine an average. If that average exceeds 0.080 mg/L, the system has exceeded the TTHM operational evaluation level.

(2) HAA5 operational level. The HAA5 operational evaluation level is determined by the sum of the two previous quarters’ HAA5 results plus twice the current quarter’s HAA5 result, divided by 4 to determine an average. If that average exceeds 0.060 mg/L, the system has exceeded the HAA5 operational evaluation level.

(3) A system must calculate the operational evaluation level 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) Requirements when the operational evaluation level is exceeded. The system must conduct an operational evaluation and submit a written report of the evaluation to the department within 90 days after being notified of the analytical result that caused the system to exceed the operational evaluation level. The written report must be made available to the public upon request. The report must include an examination of system treatment and distribution operational practices, including storage tank operations, excess storage capacity, distribution system flushing, changes in sources or source water quality, and treatment changes or problems that may contribute to disinfection byproduct formation, and what steps could be considered to minimize future exceedances.

1. The system may make a request to the department to limit the scope of the examination if it is able to identify the cause of the operational evaluation level exceedance. The 90-day deadline for submitting the written report cannot be extended.

2. The department must approve the limited scope of the examination in writing and the written approval must be kept with the completed report.

g. Reporting. All systems required to comply with this rule must meet the reporting requirements as required by 42.4(3)“d”.

h. Recordkeeping. All systems required to comply with this rule must retain the monitoring plans and analytical results as required by 42.5(1)“h”.

Item 20. Amend subparagraph 41.8(1)“c”(1)(2) as follows:

2. To determine compliance with 41.8(1)“b”(1), 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	Reserve <u>1 µg/L</u>

Item 21. Amend subparagraph 41.8(1)“e”(4)(2) as follows:

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 that contaminant, the system must collect and analyze for that contaminant using at least one sample at that source/entry point every six years. The analytical results for radium–226 and radium–228 must be added together to yield the combined result.

Item 22. Amend subparagraph 41.8(1)“f”(3)(2) as follows:

2. Reduced monitoring. If the gross beta particle activity minus the naturally occurring potassium–40 beta particle activity at a sampling point has a running annual average (computed quarterly) less than or equal to 15 pCi/L (screening level), the department may reduce the frequency of monitoring at that sampling point to every three years. Systems must collect all samples required in 41.8(1)“f”(3) during the reduced monitoring period.

Item 23. Amend subparagraph 41.8(1)“f”(6) as follows:

(6) If the gross beta particle activity minus the naturally occurring potassium–40 beta particle activity exceeds the appropriate screening level, an analysis of the sample 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 combined for measured levels of tritium and strontium to determine compliance.

Item 24. Amend subparagraph 41.8(1)“f”(7) as follows:

(7) Monitoring after an MCL violation. Systems must monitor monthly at the sampling point(s) which exceed the maximum contaminant level in 41.8(1)“b”(2) beginning the month after the exceedance occurs. Systems must continue monthly monitoring until the 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 set forth in ~~41.8(1)“f”(2)“3”~~ 41.8(1)“f”(1)“3” or ~~41.8(1)“f”(3)“1,” first bulleted paragraph~~ 41.8(1)“f”(3)“2”.

Item 25. Adopt the following new paragraph 42.1(7)“d”:

d. Special notice for repeated failure to conduct monitoring of the source water for Cryptosporidium.

(1) Applicability. The owner of operator of any public water system that is required to monitor source water under 567-43.11 must notify persons served by the water system that monitoring has not been completed as specified no later than 30 days after the system has failed to collect any three months of monitoring as specified in 43.11(3)“a”. The notice must be repeated as specified in 42.1(3).

(2) Form and manner of notice. The form and manner of the public notice must follow the Tier 2 public notice requirements in 42.1(3) and be presented as required in 42.1(5)“b”.

(3) Mandatory language. The public notice 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 deadline required [date].

For more information, please call [name of water system contact] of [name of water system] at [telephone number].”

(4) Each special notice must also 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.

Item 26. Adopt the following new paragraph 42.1(7)“e”:

e. Special notice for failure to determine bin classification or mean Cryptosporidium level.

(1) Applicability. The owner or operator of a public water system that is required to determine a bin classification under 43.11(5) must notify persons served by the water system that the determination has not been made as required no later than 30 days after the system has failed to report the determination as specified in 43.11(5)“c”. The notice must be repeated as specified in 42.1(3). The notice is not required if the system is in compliance with a department-approved schedule to address the violation.

(2) Form and manner of notice. The form and manner of the public notice must follow the Tier 2 public notice requirements in 42.1(3) and be presented as required in 42.1(5)“b”.

(3) Mandatory language. The public notice 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 [name of water system contact] of [name of water system] at [phone number].”

(4) Each special notice must also 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.

Item 27. Amend introductory paragraph of paragraph 42.3(3)“c” as follows:

c. Information on detected contaminants. This paragraph specifies the requirements for information to be included in each report for contaminants subject to mandatory monitoring (except *Cryptosporidium*, which is listed in 42.3(3)“c”(2)) as follows: contaminants subject to an MCL, action level, MRDL, or treatment technique (regulated contaminants); contaminants for which monitoring is required by CFR Title 40, Part 141.40 (unregulated contaminants), 567—subrule 41.11(1) (sodium monitoring), and 567—41.15(455B) (other contaminants); and

disinfection by-products or microbial contaminants for which monitoring is required by 567—Chapters 40 to 43, except as provided under 42.3(3)“e”(1), and which are detected in the finished water. The ammonia monitoring conducted pursuant to 567—subrule 41.11(2) is not subject to this paragraph. For the purposes of this subrule, “detected” means at or above the levels prescribed by the following: inorganic contaminants in 567—subparagraph 41.3(1)“e”(1); volatile organic contaminants in 567—paragraph 41.5(1)“b”; synthetic organic contaminants in 567—paragraph 41.5(1)“b”; radionuclide contaminants in 567—paragraph 41.9(1)“c”; disinfection byproducts in 567-subparagraph 83.6(7)“a”(6)(3); and other contaminants with health advisory levels, as assigned by the department.

Item 28. Amend subparagraph 42.3(3)“c”(1)(3) as follows:

3. For contaminants subject to an MCL, except turbidity and total coliforms, the table must contain the highest contaminant level used to determine compliance with a primary drinking water standard and the range of detected levels, as follows:

- When compliance with the MCL is determined annually or less frequently: the highest detected level at any sampling point and the range of detected levels expressed in the same units as the MCL (such as inorganic compounds).

- When compliance with the MCL is determined by calculating a running annual average of all samples taken at a sampling point: the highest average of any of the sampling points and the range of all sampling points expressed in the same units as the MCL (such as organic compounds and radionuclides). For TTHM and HAA5 MCLs, systems must include the highest locational running annual average for TTHM and HAA5 and the range of individual sample results for all monitoring locations expressed in the same units as the MCL. If more than one location exceeds the TTHM or HAA5 MCL, the system must include the locational running annual averages for all locations that exceed the MCL.

- When compliance with an MCL is determined on a systemwide basis by calculating a running annual average of all samples at all sampling points: the average and range of detection expressed in the same units as the MCL (~~such as total trihalomethane compounds~~).

NOTE: When rounding of results to determine compliance with the MCL is allowed by the regulations, rounding should be done prior to multiplying the results by the factor listed in Appendix C.

Item 29. Amend subparagraph 42.4(3)“d”(2) as follows:

(2) Disinfection byproducts. Systems must report the information specified in the following table:

Disinfection Byproducts Reporting Table

If you are a . . .	You must report . . .
System monitoring for TTHMs and HAA5 under the requirements of 567—subparagraph 41.6(1)“c”(4) on a quarterly or more frequent basis	<ol style="list-style-type: none"> 1. The number of samples taken during the last quarter. 2. The location, date, and result of each sample taken during the last quarter. 3. The arithmetic average of all samples taken in the last quarter. 4. The annual arithmetic average of the quarterly arithmetic averages for the last four quarters.* 5. Whether the MCL was exceeded. 6. <u>Under Stage 2, any operational evaluation levels that were exceeded during the quarter, and if so, the location and date, and the calculated TTHM and HAA5 levels.</u>

System monitoring for TTHMs and HAA5 under the requirements of 567—subparagraph 41.6(1) “c”(4) less frequently than quarterly, but at least annually	<ol style="list-style-type: none"> 1. The number of samples taken during the last year. 2. The location, date, and result of each sample taken during the last monitoring period. 3. The arithmetic average of all samples taken over the last year.* 4. Whether the MCL was exceeded.
System monitoring for TTHMs and HAA5 under the requirements of 567—subparagraph 41.6(1) “c”(4) less frequently than annually	<ol style="list-style-type: none"> 1. The location, date, and result of the last sample taken. 2. Whether the MCL was exceeded.
System monitoring for chlorite under the requirements of 567—subparagraph 41.6(1) “c”(3)	<ol style="list-style-type: none"> 1. The number of samples taken each month for the last 3 months. 2. The location, date, and result of each sample taken during the last quarter. 3. For each month in the reporting period, the arithmetic average of all samples taken in each three sample set taken in the month. 4. Whether the MCL was exceeded, and in which month it was exceeded.
System monitoring for bromate under the requirements of 567—subparagraph 41.6(1) “c”(2)	<ol style="list-style-type: none"> 1. The number of samples taken during the last quarter. 2. The location, date, and result of each sample taken during the last quarter. 3. The 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 running annual average will transition from a system-wide RAA calculation under Stage 1 to a locational running annual average (LRAA) under Stage 2. The transition will commence according to the system schedule listed in 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.

Item 30. Amend subparagraph 42.4(3) “d”(4) as follows:

(4) Disinfection byproduct precursors and enhanced coagulation or enhanced softening. Systems must report the information specified in the following table:

Disinfection Byproduct Precursors and Enhanced Coagulation or Enhanced Softening Reporting Table

If you are a . . .	You must report . . .
System monitoring monthly or quarterly for TOC under the requirements of 567—subparagraph 43.6(1) “c”(2) and required to meet the enhanced coagulation or enhanced softening requirements in 567—	<ol style="list-style-type: none"> 1. The number of paired (source water and treated water, prior to continuous disinfection) samples taken during the last quarter. 2. The 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, the arithmetic average of the percent reduction of TOC for each paired sample and the required TOC percent removal. 4. Calculations for determining compliance with the TOC percent

<p>subparagraph 43.6(3)“b”(2) or (3).</p>	<p>removal requirements, as provided in 567—subparagraph 43.6(3)“c”(1).</p> <p>5. Whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in 567—paragraph 43.6(3)“b” for the last four quarters.</p>
<p>System monitoring monthly or quarterly for TOC under the requirements of 567—subparagraph 43.6(1)“c”(2) and meeting one or more of the alternative compliance criteria in 567—subparagraph 43.6(3)“a”(2) or (3).</p>	<ol style="list-style-type: none"> 1. The alternative compliance criterion that the system is using. 2. The number of paired samples taken during the last quarter. 3. The location, date, and result of each paired sample and associated alkalinity taken during the last quarter. 4. The running annual arithmetic average based on monthly averages (or quarterly samples) of source water TOC for systems meeting a criterion in 567—numbered paragraph 43.6(3)“a”(2)“1” or “3” or of treated water TOC for systems meeting the criterion in 567—numbered paragraph 43.6(3)“a”(2)“2.” 5. The running annual arithmetic average based on monthly averages (or quarterly samples) of source water SUVA for systems meeting the criterion in 567—numbered paragraph 43.6(3)“a”(2)“5” or of treated water SUVA for systems meeting the criterion in 43.6(3)“a”(2)“6.” 6. The running annual average of source water alkalinity for systems meeting the criterion in 567—numbered paragraph 43.6(3)“a”(2)“3” and of treated water alkalinity for systems meeting the criterion in 43.6(3)“a”(3)“1.” 7. The running annual average for both TTHM and HAA5 for systems meeting the criterion in 567—numbered paragraph 43.6(3)“a”(2)“3” or “4.” 8. The running annual average for the amount of magnesium hardness removal (as CaCO₃, in mg/L) for systems meeting the criterion in 567—numbered paragraph 43.6(3)“a”(3)“2.” 9. Whether the system is in compliance with the particular alternative compliance criterion in 567—subparagraph 43.6(3)“a”(2) or (3).
<p><u>SW/IGW system on reduced monitoring for TTHM/HAA5 under the requirements of 567—41.6(3)“d”.</u></p>	<p><u>For each treatment plant that treats surface or IGW source water, report the following:</u></p> <ol style="list-style-type: none"> 1. <u>The number of source water TOC samples taken each month during the last quarter.</u> 2. <u>The date and result of each sample taken during the last quarter.</u> 3. <u>The quarterly average of monthly samples taken during the last quarter or the result of the quarterly sample.</u> 4. <u>The RAA of quarterly averages from the past four quarters.</u> 5. <u>Whether the TOC RAA exceeded 4.0 mg/L.</u>

Item 31. Amend subparagraph 42.5(1)“a”(2)(1) as follows:

1. ~~Bacteria. Records of bacteriological analyses made pursuant to this subrule shall be kept for not less than five years.~~ Microbiological and Turbidity: Records of microbiological analyses and turbidity analyses made pursuant to 567-Chapters 41 and 43 shall be kept for not less than five years.

Item 32. Adopt the following new paragraph 42.5(1)“h”:

h. Monitoring plans. Copies of monitoring plans developed pursuant to Chapters 41, 42, 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.

Item 33. Amend entry “Haloacetic Acids” in Appendix C to Chapter 42 as follows:

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
Haloacetic Acids (HAA) (ppb)	0.060	1000	60	n/a (footnote 4)	Byproduct of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Item 34. Amend entry “Trihalomethanes” in Appendix C to Chapter 42 as follows:

Contaminant (CCR units)	MCL, in mg/L	To convert for CCR, multiply by	MCL in CCR units	MCLG in CCR units	Major sources in drinking water	Health effects language
TTHMs [total trihalomethanes] (ppb)	0.10 or 0.080 (footnote 4)	1000	100 or 80	n/a (footnote 4)	Byproduct of drinking water disinfection	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer.

Item 35. Amend footnote 4 in Appendix C to Chapter 42 as follows:

¹ MCL (for systems that collect >40 samples per month): 5% of monthly samples are positive. MCL (for systems that collect <40 samples per month): 1 positive monthly sample.

² Uranium MCL is effective on December 8, 2003. Until then, there is no MCL.

³ Beginning on January 23, 2006, the arsenic MCL is 0.010 mg/L and the MCLG is 0. Until then, the MCL is 0.05 mg/L, and there is no MCLG.

⁴ ~~Beginning on January 1, 2002, for surface water and influenced groundwater systems serving at least 10,000 persons, the TTHM MCL is 0.080 mg/L. For all other systems, the TTHM MCL is 0.10 mg/L until January 1, 2004, at which time the TTHM MCL is 0.080 mg/L for all systems required to monitor under 567—41.6(455B).~~

The MCLGs for total trihalomethanes and haloacetic acids:

Disinfection Byproduct	MCLG, mg/L	MCLG in CCR units
<u>Bromodichloromethane</u>	<u>0</u>	<u>0</u>
<u>Bromoform</u>	<u>0</u>	<u>0</u>
<u>Chloroform</u>	<u>0.07</u>	<u>70</u>
<u>Dibromochloromethane</u>	<u>0.06</u>	<u>60</u>
<u>Dichloroacetic acid</u>	<u>0</u>	<u>0</u>
<u>Monochloroacetic acid</u>	<u>0.07</u>	<u>70</u>
<u>Trichloroacetic acid</u>	<u>0.02</u>	<u>20</u>

Item 36. Amend introductory paragraph in subrule 43.1(5) as follows:

43.1(5) Requirement for certified operator. The department maintains a list of operators who are certified 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, and IV), and is periodically updated during the year.

Item 37. Amend paragraph 43.3(2)“a” as follows:

a. The standards for a project are the Ten States Standards as adopted through 2007 and the American Water Works Association (AWWA) Standards as adopted through ~~2003~~ 2010 and 43.3(7) to 43.3(9). To the extent of any conflict between the Ten States Standards and the American Water Works Association Standards and 43.3(7) to 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 (PE) pipe shall be determined based on a safety factor of ~~2.5~~ 2.0 and a surge allowance of no less than two feet per second (2 fps).

(2) For CWS groundwater 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 groundwater systems, a single well is acceptable.

(3) Separation of water mains from sanitary sewers and storm sewers shall be in accordance with the Iowa Wastewater Facilities Design Standards, chapter 12, section 5.8, “Protection of Water Supplies.” Where the water main either crosses under or is less than 18 inches above the sewer, one full length of water main shall be located so that both joints are as far as possible from the sewer. The sewer and water pipes must be adequately supported. A low permeability soil shall be used for backfilling material within ten feet of the point of crossing. No water pipe shall pass through or come in contact with any part of a sewer manhole.

Item 38. Amend paragraph 43.3(3)“a” as follows:

a. *Construction permit issuance conditions.* A permit to construct shall be issued by the director if the director concludes from the application and specifications submitted pursuant to 43.3(4) and 567—40.4(455B) that the project will comply with the rules of the department. The construction of the project must begin within one year from the date the permit was issued; if it is not, the permit is no longer valid. If construction is ongoing and continuous (excepting winter delays) and the permitted project cannot be completed within one year, the permit shall remain valid until the project is completed. The department may grant an extension of the permit for segmented projects, for a maximum two additional years, provided the department's design and construction standards have not changed during the intervening period.

Item 39. Amend subparagraph 43.3(10)“b”(1) as follows:

(1) Inorganic compounds. The department identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the inorganic contaminants listed in 567—paragraph 41.3(1)“b,” except arsenic and fluoride.

INORGANIC CHEMICAL	BAT(s)
Antimony	2, 7

INORGANIC CHEMICAL	BAT(s)
Arsenic ^d	1, 2, 5, 6, 7, 9, 11 ^e
Asbestos	2, 3, 8
Barium	5, 6, 7, 9
Beryllium	1, 2, 5, 6, 7
Cadmium	2, 5, 6, 7
Chromium	2, 5, 6 ^b , 7
Cyanide	5, 7, 10 <u>12</u>
Mercury	2 ^a , 4, 6 ^a , 7 ^a
Nickel	5, 6, 7
Nitrate	5, 7, 9
Nitrite	5, 7
Selenium	1, 2 ^c , 6, 7, 9
Thallium	1, 5

Key to BATs

1=Activated Alumina	5=Ion Exchange	9=Electrodialysis
2=Coagulation/Filtration*	6=Lime Softening*	10=Chlorine
3=Direct and Diatomite Filtration	7=Reverse Osmosis	11=Oxidation/Filtration
4=Granular Activated Carbon	8=Corrosion Control	<u>12= Alkaline Chlorination (pH greater than or equal to 8.5)</u>

*not BAT for systems with less than 500 service connections

^aBAT only if influent Hg concentrations are less than or equal to 10 micrograms/liter.

^bBAT for Chromium III only.

^cBAT for Selenium IV only.

^dBAT for Arsenic V. Preoxidation may be required to convert Arsenic III to Arsenic V.

^eTo obtain high removals, iron to arsenic ratio must be at least 20:1.

Item 40. Amend paragraph 43.3(10)“c” as follows:

c. BATs for disinfection byproducts and disinfectants. The department identifies the following as the best technology, treatment techniques, or other means available for achieving compliance with the maximum contaminant levels for the disinfection byproducts listed in 567—paragraph 41.5(2)“b,” and the maximum residual disinfectant levels listed in 567—paragraph 41.5(2)“c.”

DBP MCL or MRDL	Best Available Technology
Bromate MCL	Control of ozone treatment process to reduce production of bromate
Chlorite MCL	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels
HAA5 and TTHM MCL RAA	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant
HAA5 and TTHM MCL LRAA	<ul style="list-style-type: none"> • <u>Non-consecutive system: Enhanced coagulation or enhanced softening, plus GAC10; or nanofiltration with a molecular weight cutoff that is less than or equal to 1000 Daltons; or GAC20.</u> • <u>Consecutive system serving at least 10,000 persons*: Improved distribution system and storage tank management to reduce</u>

	<u>residence time, plus the use of chloramines for disinfectant residual maintenance.</u> <ul style="list-style-type: none"> • <u>Consecutive system serving fewer than 10,000 persons*: Improved distribution system and storage tank management to reduce residence time.</u>
TTHM MCL	Enhanced coagulation or enhanced softening or GAC10, with chlorine as the primary and residual disinfectant
MRDL	Control of treatment processes to reduce disinfectant demand and control of disinfection treatment processes to reduce disinfectant levels

* Applies only to the disinfected water that consecutive systems buy or otherwise receive.

Item 41. Amend paragraph 43.5(2) “a” as follows:

a. *Disinfection treatment criteria.* The disinfection treatment must be sufficient to ensure that the total treatment processes of that system achieve at least 99.9 percent (3-log) inactivation or removal of *Giardia lamblia* cysts and at least 99.99 percent (4-log) inactivation or removal of viruses, acceptable to the department. At least, 0.5 log inactivation of *Giardia lamblia* cysts must be achieved through disinfection treatment, even if the required inactivation or removal is met or exceeded through physical treatment processes. Each system is required to calculate the total inactivation ratio ($CT_{\text{calculated}}/CT_{\text{required}}$) each day the treatment plant is in operation. The system’s total inactivation ratio must be equal to or greater than 1.0 in order to ensure the minimum inactivation and removal requirements have been achieved.

Item 42. Amend subparagraph 43.6(1) “a”(5) as follows:

(5) Consecutive systems. Consecutive systems that provide water containing a disinfectant or oxidant are required to comply with this rule. ~~A consecutive system may be incorporated into the sampling plan of the supply that produces the water (the primary water supplier), provided:~~

~~1. There is a mutual signed agreement between the primary and consecutive system supplied by that primary system that states the primary system will be responsible for the compliance of its consecutive system with this rule, regardless of additional treatment by the consecutive system.~~

~~2. Beginning with the primary water supply, each successive consecutive system must also be included in the primary supply’s sampling plan, so that there is no system with its own sampling plan between the primary supply and the consecutive supply covered by the primary supply’s plan.~~

~~3. It is understood by the primary and all consecutive systems that even if only one system in the sampling plan has a violation, all systems in the sampling plan will receive the violation and be required to conduct public notification.~~

~~4. The department receives a copy of the signed agreement and approves the sampling plan prior to the beginning of the compliance period.~~

~~If a mutual agreement is not possible, each system (the primary system and each consecutive system) is responsible for compliance with this rule for its specific system.~~

Item 43. Amend subparagraph 43.6(1) “d”(1) as follows:

(1) Analytical methods. Systems must measure residual disinfectant concentrations 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	Standard Methods	ASTM- Other Method	Residual measured ¹			
			Free Chlorine	Combined Chlorine	Total Chlorine	Chlorine Dioxide
Amperometric Titration	4500-CI D	ASTM: D 1253-86 (96), 03	X	X	X	
Low Level Amperometric Titration	4500-CI E				X	
DPD Ferrous Titrimetric	4500-CI F		X	X	X	
DPD Colorimetric	4500-CI G		X	X	X	
Syringaldazine (FACTS)	4500-CI H		X			
Iodometric Electrode	4500-CI I				X	
DPD	4500-CIO ₂ D					X
Amperometric Method II	4500-CIO ₂ E					X
<u>Lissamine Green Spectrophotometric</u>		<u>EPA: 327.0 Rev. 1.1</u>				<u>X</u>

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 of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426-4791. Documents may be inspected at EPA's Drinking Water Docket, 401 M Street SW, Washington, DC 20460 (telephone: (202)260-3027); or at the Office of Federal Register, 800 North Capitol Street NW, Suite 700, Washington, DC.

The following method is available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428:

Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 1996: Method D 1253-86.

The following methods are available from the American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005:

Standard Methods for the Examination of Water and Wastewater, 19th and 20th edition, American Public Health Association, 1995 and 1998, respectively (both editions are acceptable): Methods: 4500-CI D, 4500-CI E, 4500-CI F, 4500-CI G, 4500-CI H, 4500-CI I, 4500-CIO₂ D, 4500-CIO₂ E.

The following methods are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161 (telephone: (800)553-6847):

"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." USEPA, May 2005, EPA 815-R-05-008.

¹ X indicates method is approved for measuring 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.

Item 44. Amend subparagraph 43.6(2) "b"(1) as follows:

(1) Routine monitoring for total organic carbon (TOC).

1. Surface water and groundwater under the direct influence of surface water systems which use conventional filtration treatment must monitor each treatment plant for total organic carbon (TOC) no later than the point of combined filter effluent turbidity monitoring and representative of the treated water.

~~All systems required to monitor under this paragraph~~ 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 source water and treated water samples and one source water alkalinity sample per month per plant at a time representative of normal operating conditions and influent water quality.

2. Surface water and groundwater under the direct influence of surface water systems which do not use conventional filtration treatment must conduct the TOC monitoring under 43.6(2) "b"(1)(1) in order to qualify for reduced disinfection byproduct monitoring for TTHM and HAA5 under 41.6(1) "c"(4)(2). The source water TOC running annual average 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 monitoring for TTHM and HAA5. Once qualified for reduced monitoring for TTHM and HAA5, a system may reduce source water TOC monitoring to quarterly TOC samples taken every 90 days at a location prior to any treatment.

Item 45. Amend subparagraph 43.6(2) “c”(1) as follows:

(1) Analytical methods. Systems required to monitor disinfectant byproduct precursors must use the following methods, which must be conducted by a certified laboratory pursuant to 567—Chapter 83, unless otherwise specified.

Approved Methods for Disinfection Byproduct Precursor Monitoring¹

Analyte	Methodology	EPA	Standard Methods	ASTM	Other
Alkalinity ⁶	Titrimetric		2320B	D 1067–92B	
	Electrometric titration				I-1030–85
Bromide	Ion chromatography	300.0			
		300.1			
		<u>317.0</u> <u>Rev.</u> <u>2.0</u>			
		<u>326.0</u>			
				<u>D 6581-00</u>	
Dissolved Organic Carbon ²	High temperature combustion		<u>5310B or 5310B-00</u>		
	Persulfate–UV or heated–persulfate oxidation		<u>5310C or 5310C-00</u>		
	Wet oxidation		<u>5310D or 5310D-00</u>		
		<u>415.3</u> <u>Rev.</u> <u>1.1</u>			
pH ³	Electrometric	150.1	4500–H ⁺ –B	D 1293–84	
		150.2			
Total Organic Carbon ⁴	High temperature combustion		<u>5310B or 5310B-00</u>		
	Persulfate–UV or heated–persulfate oxidation		<u>5310C or 5310C-00</u>		
	Wet oxidation		<u>5310D or 5310D-00</u>		
		<u>415.3</u> <u>Rev.</u> <u>1.1</u>			
Ultraviolet Absorption at	UV absorption		<u>5910B or 5910B-00</u>		

254 nm ⁵					
		<u>415.3</u>			
		<u>Rev.</u>			
		<u>1.1</u>			

¹ 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 of the documents may be obtained from the sources listed below. Information regarding obtaining these documents can be obtained from the Safe Drinking Water Hotline at (800)426-4791. Documents may be inspected at EPA's Drinking Water Docket, 401 M Street SW, Washington, DC 20460 (telephone: (202)260-3027); or at the Office of Federal Register, 800 North Capitol Street NW, Suite 700, Washington, DC.

The following methods are available from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428:

Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 1996: Method D 1067-92B and Method D1293-84.

Annual Book of ASTM Standards, Volume 11.01, American Society for Testing and Materials, 2001 (or any year containing the cited version): Method D 6581-00.

The following methods are available from the National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, VA 22161 (telephone: (800)553-6847):

Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, March 1983, (NTIS PB84-128677): Methods 150.1 and 150.2.

"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 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." USEPA, 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" USEPA, 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." USEPA, February 2005, EPA/600/R-05/055: Method 415.3 Revision 1.1.

The following methods are available from the American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005:

Standard Methods for the Examination of Water and Wastewater, 19th edition, American Public Health Association, 1995: Methods: 2320B (20th edition, 1998, is also accepted for this method), 4500-H⁻B, and 5910B.

Standard Methods for the Examination of Water and Wastewater, Supplement to the 19th edition, American Public Health Association, 1996: Methods: 5310B, 5310C, and 5310D.

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 is available from the Books and Open-File Reports Section, U.S. Geological Survey, Federal Center, Box 25425, Denver, CO 80225-0425.

² Dissolved Organic Carbon (DOC). DOC 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, DOC samples must be filtered 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. Inorganic carbon must be removed 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. DOC samples must be filtered through the 0.45 μ pore-diameter filter prior to acidification. DOC samples must either be analyzed or must be acidified to achieve pH less than 2.0 by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed 48 hours. Acidified DOC samples must be analyzed within 28 days.

³ pH must be measured by a laboratory certified by the department to perform analysis under 567—Chapter 83; a Grade II, III or IV operator meeting the requirements of 567—Chapter 81; or any person under the supervision of a Grade II, III or IV operator meeting the requirements of 567—Chapter 81.

⁴ Total Organic Carbon (TOC). Inorganic carbon must be removed from the samples prior to analysis. TOC samples may not be filtered prior to analysis. TOC samples must either be analyzed or must be acidified to achieve pH less than 2.0 by minimal addition of phosphoric or sulfuric acid as soon as practical after sampling, not to exceed 24 hours. 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.

⁵ Ultraviolet Absorption at 254 nm (UV₂₅₄). DOC 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. UV absorption must be measured at 253.7 nm (may be rounded off to 254 nm). Prior to analysis, UV₂₅₄ samples must be filtered 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.

⁶ Alkalinity must be measured by a laboratory certified by the department to perform analysis under 567—Chapter 83; a Grade II, III or IV operator meeting the requirements of 567—Chapter 81; or any person under the supervision of a Grade II, III or IV operator meeting the requirements of 567—Chapter 81. Only the listed titrimetric methods are acceptable.

Item 46. Adopt the following new subparagraph 43.6(2)“c”(3) as follows:

(3) Magnesium. All methods approved for magnesium in 41.3(1)“e”(1) are approved for use in measuring magnesium under this rule.

Item 47. Amend subparagraph 43.7(4)“d”(1) as follows:

(1) Notification of residents. At least 45 days prior to commencing with the partial replacement of a lead service line, the water system 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 exposure to lead. The department may allow the water system to provide this notice less than 45 days prior to commencing partial lead service line replacement where such replacement is in conjunction with emergency repairs. In addition, the water system shall inform the resident(s) served by the line that the system will, at the system’s expense, collect from each partially replaced lead service line a sample that is representative of the water in the service line for analysis of lead content, as prescribed under 567—subparagraph ~~41.4(1)“b”(3)~~ 41.4(1)“c”(2)(3), within 72 hours after the completion of the partial replacement of the service line. The system shall collect the sample and report the results of the analysis 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.”

Item 48. Amend paragraph 43.9(1)“c” as follows:

c. Prohibition of uncovered intermediate or finished water ~~reservoirs~~ storage facilities. ~~Systems are not permitted to begin construction of uncovered intermediate or finished water storage facilities. Systems that are 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.~~

Item 49. Amend paragraph 43.10(1)“b” as follows:

b. Prohibition of uncovered intermediate or finished water reservoirs. Systems that are 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.

Item 50. Amend subparagraph 43.10(2)“b”(2)(1) as follows:

1. If the system uses only one point of disinfectant application, it must determine:
 - One inactivation ratio (CT calc/CT_{99,9}) before or at the first customer during peak hourly flow, or
 - Successive (CT 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. Under this alternative, the system must calculate the total inactivation ratio by determining (CT calc/CT_{99,9}) for each sequence and then adding the (CT calc/CT_{99,9}) values together to determine (\sum CT calc/CT_{99,9}).

Item 51. Adopt the following new rule 43.11(455B):

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 treatment technique requirements in lieu of maximum contaminant levels for *Cryptosporidium*. These requirements are in addition to the filtration and disinfection requirements of 567-43.5, 43.9, and 43.10, and apply to all Iowa public water systems supplied by surface water or influenced groundwater sources.

a. Wholesale systems. Wholesale systems must comply with the requirements based on the population of the largest system in the combined distribution system.

b. Filtered systems. The requirements of this rule for filtered systems apply to systems that are required to provide filtration treatment per 567-43.5, whether or not the system is currently operating a filtration system.

43.11(2) General Requirements. Systems subject to this rule must comply with the following requirements:

a. Source water monitoring. Systems must conduct two rounds of source water monitoring for each plant that treats a surface water or influenced groundwater source. This monitoring may include sampling for *Cryptosporidium*, *E. coli*, and turbidity as described in 43.11(3) “a” through 43.11(3) “e”, to determine what level, if any, of additional *Cryptosporidium* treatment they must provide.

b. Disinfection profiles and benchmarks. Systems that plan to make a significant change to their disinfection practice must develop disinfection profiles and calculate disinfection benchmarks, as described in 43.11(4) “a” and 43.11(4) “b”.

c. Cryptosporidium treatment bin determination. Systems must determine their *Cryptosporidium* treatment bin classification and provide additional treatment for *Cryptosporidium*, if required, according to the prescribed schedule.

d. Additional treatment for Cryptosporidium. Systems required to provide additional treatment for *Cryptosporidium* must implement microbial toolbox options that are designed and operated as described in 43.11(8) through 43.11(13).

e. Recordkeeping and reporting. Systems must comply with the applicable recordkeeping and reporting requirements described 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 the system 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.

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 conducts <i>E. coli</i> monitoring	October 2008	October 2017
Serves fewer than 10,000 people and conducts <i>Cryptosporidium</i> monitoring	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) Systems 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) Systems 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 monitoring for *Cryptosporidium* 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. Systems may avoid *E. coli* monitoring if the system notifies the department no later than three months prior to the *E. coli* monitoring start date that it will conduct *Cryptosporidium* monitoring.

3. Systems that either fail to conduct the required *E. coli* monitoring or that cannot meet the *E. coli* annual mean limit are required to conduct *Cryptosporidium* monitoring. The system must sample their 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 it mathematically cannot meet the applicable *E. coli* annual mean limit may discontinue the *E. coli* sampling. 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 surface water or influenced groundwater 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 and that monitor for *Cryptosporidium* must collect at least six samples per year for two years.

(4) New sources. A system that begins using a new surface water or influenced groundwater source after the dates in Table 1 must monitor according to a schedule approved by the department and meet the requirements of this subrule. The system must also meet the requirements of the bin classification and *Cryptosporidium* treatment for the new source on a schedule approved by the department. 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.

(6) Grandfathered monitoring data. Systems were allowed to use source water monitoring *Cryptosporidium* data collected prior to the applicable start date in Table 1 to meet the requirements of the first round of monitoring, a process referred to as grandfathering data. This grandfathered data substituted for an equivalent number of months at the end of the monitoring period and had to meet the requirements of 40 CFR 141.707, which the department is adopting by reference. The department must approve the grandfathered data application.

c. Sampling plan. Systems must submit the sampling plan that specifies the sampling locations in relation to the sources and treatment processes, and the calendar dates when the system will collect each required sample. The specific treatment process locations that must be included are pretreatment, points of chemical treatment, and filter backwash recycle.

(1) The plan must be submitted no later than three months prior to the applicable monitoring date in Table 1. If the department does not respond to a system regarding its sampling plan prior to the start of the monitoring period, the system must sample according to the reported sampling plan.

(2) The plan must be submitted in a form acceptable to the department.

(3) 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 is required to 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 resampling date approved by the department.

(4) Missed sampling dates. Systems that fail to meet the dates in their sampling plan for any source water sample must revise their sampling plan to add dates for collecting all missed samples. The revised schedule 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 surface water or influenced groundwater source.

(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 for the system to collect the sample after chemical treatment. This approval would only be granted if the department determines in writing that collecting the samples 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 analysis of the sample.

(2) Filter backwash recycle return location. Systems that recycle filter backwash water must collect the 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 surface water 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 surface water sources and blended surface water and groundwater sources, must collect samples as specified below.

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 sample from each source must be weighted according to the proportion of the source in the total plant flow at the time the sample is collected.
- Analyze the samples separately and mathematically composite the results. Systems may analyze samples from each source separately and calculate a weighted average of the analytical results for each sampling date. The weighted average must be calculated by multiplying the analytical result for each source by the fraction that source contributed to the total plant flow at the time the sample was collected and then summing the weighted analytical results.

e. Analytical methodology, laboratory certification, and data reporting requirements. Systems must have samples analyzed per the specifications listed in this paragraph. The system must report 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, in a format acceptable to the department.

(1) *Cryptosporidium*. Systems must have *Cryptosporidium* samples analyzed by a laboratory that is approved under EPA’s Laboratory Quality Assurance Evaluation Program for Analysis of *Cryptosporidium* in Water.

1. There are two approved analytical methods for *Cryptosporidium*: “Method 1623: *Cryptosporidium and Giardia in Water by Filtration/IMS/FA*”, 2005, US EPA, EPA-815-R-05-002; and, “Method 1622: *Cryptosporidium in Water by Filtration/IMS/FA*”, 2005, US EPA, EPA-815-R-05-001.

2. Using one of the two approved methods, the laboratory must analyze at least a 10 L sample or a packed pellet volume of at least 2 mL.

3. A matrix spike (MS) sample must be spiked and filtered by the laboratory, per 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 matrix spike samples and the ongoing precision and recovery samples.

5. The following data elements must be reported for each *Cryptosporidium* analysis:

- PWSID
- Facility ID
- Sample collection date
- Sample type (i.e., field or matrix spike)
- Sample volume filtered (L), to the nearest 0.25 L
- Was 100% of the filtered volume examined by the laboratory?
- Number of oocysts counted.
- For matrix spike samples: sample volume spiked and estimated number of oocysts spiked.
- For samples in which less than 10 L is filtered or less than 100% of the sample volume is examined, systems must also report the number of filters used and the packed pellet volume.
- For samples in which less than 100% of sample volume is examined, systems must also report the volume of resuspended concentrate and volume of this resuspension processed through immunomagnetic separation.

(2) *E. coli*. Systems must have the *E. coli* samples 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 analysis of source water.

1. The 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	Standard Methods: 18 th , 19 th , and 20 th editions	Other
Most probable number with multiple tube or multiple well. ^{1,2}		9223 B ³	991.15 ⁴ Colilert ^{3,5} Colilert-18 ^{3,5,6}
Membrane filtration single step ^{1,7,8}	1603 ⁹		mColiBlue-24 ¹⁰

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.

²Samples shall be enumerated by 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 Most Probable Number (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-glucouronidase 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 C rather than the 24 hours required for the Colilert® test.

⁷A 0.45 micron membrane filter or other pore size certified by the manufacturer to fully retain organisms to be cultivated and to be free of extractables which could interfere with their 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.

⁹“Method 1603: *Escherichia coli* (*E. coli*) in Water by Membrane Filtration Using Modified Membrane-Thermotolerant *Escherichia coli* Agar (modified mTEC), USEPA, July 2006.” US EPA, Office of Water, Washington, DC EPA 821-R-06-011.

¹⁰A description of the mColiBlue24® test, Total Coliforms and *E. coli*, is available from Hach Company, 100 Dayton Ave., Ames, IA 50010.

2. The holding time (the time period from sample collection to initiation of analysis) may not exceed 30 hours. The department may approve on a case-by-case basis an extension of the holding time to 48 hours, if the 30 hours is not feasible. If the extension is allowed, the laboratory must use the Colilert® reagent version of the Standard Methods 9223B to conduct the analysis.

3. The samples must be maintained between 0 and 10 degrees C during storage and transit to the laboratory.

4. The following data elements must be reported for each *E. coli* analysis:

- PWSID
- Facility ID
- Sample collection date
- Analytical method number
- Method type
- Source type (flowing stream or river; lake or reservoir; or influenced groundwater)
- Number of *E. coli* per 100 mL
- Turbidity in NTU

(3) Turbidity. The approved analytical methods for turbidity are listed in 43.5(4)“a”(1). Measurements of turbidity 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) Notification to the department. The 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) Definition of “significant change.” Significant changes to disinfection practice are defined as follows:

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 as a significant change to disinfection practice.

b. Developing the disinfection profile. In order 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 monitoring frequency must be evenly spaced. A system that operates for fewer than 12 months per year must monitor weekly during the period of operation. A system 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 protocol approved by the department.

(1) Monitoring requirements. Systems with a single point of disinfectant application prior to the entrance to the distribution system must conduct the monitoring listed below. 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 listed 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 at each residual disinfectant concentration sampling point, or at an alternative location approved by the department, in degrees C.

2. For systems using chlorine, the pH of the disinfected water must be measured at each chlorine residual disinfectant concentration sampling point, or at an alternative location approved by the department.

3. The disinfectant contact time must be determined, in minutes.

4. The residual disinfectant concentrations of the water must be determined before or at the first customer and prior to each additional point of disinfectant application, in mg/L.

5. A system may use existing data to meet the monitoring requirements if the data is substantially equivalent to the required data, the system has not made any significant change to its treatment practice, and has the same source as when the data was 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 the system has not made a significant change to its treatment practice and has the same source as when the profile was developed. The virus profile must be developed using the same data on which the *Giardia lamblia* profile is based.

(2) Calculation of the total inactivation ratio for *Giardia lamblia*.

1. Systems using only one point of disinfectant application may determine the total inactivation ratio ($CT_{calc}/CT_{99.9}$) for the disinfection segment using either of the following methods.

- Determine one inactivation ratio before or at the first customer during peak hourly flow.
- 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 ($CT_{calc}/CT_{99.9}$) 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) Calculation of the total inactivation ratio for viruses. The system must calculate the log of inactivation for viruses using a protocol approved by the department.

c. Calculation of the disinfection benchmark.

(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) Systems that collect at least 48 samples. 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) Systems that collect 24 – 27 samples. 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) Systems serving fewer than 10,000 people and monitor for only one year. 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) Systems with plants operating on a part-time basis. 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 paragraph “a.”

Table 3: Bin Classification Table

System Type	<i>Cryptosporidium</i> Concentration, in oocysts/L	Bin Classification
Systems required to monitor	Fewer than 0.075 oocysts/L	Bin 1

for <i>Cryptosporidium</i> under 43.11(3)“b”(1) or 43.11(3)“b”(2)(3)	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> , per 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 same protocols outlined in paragraphs “a” and “b”.

c. *Reporting bin classification to the department.* The system must report its bin classification to the state for approval within six months of the end of the sampling period. The report must also include a summary of the source water monitoring data and the calculation procedure used to determine bin classification.

d. *Treatment technique violation.* Failure to comply with paragraphs “b” and “c” is a violation of the treatment technique requirement.

43.11(6) Additional *Cryptosporidium* treatment requirements. A system must provide the level of additional treatment for *Cryptosporidium* 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 *Cryptosporidium* treatment requirements.* Using Table 4, a system must determine any additional treatment requirements based upon its bin classification. The Bin 1 classification does not require any additional treatment. Bins 2 – 4 require additional *Cryptosporidium* 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. *Bin 2 through 4 treatment requirements.* A system that is classified as Bin 2, 3, or 4 must use one or more of the treatment and management options listed in 43.11(8) to comply with the additional *Cryptosporidium* treatment. Systems classified in Bins 3 and 4 must achieve at least 1-log of the additional *Cryptosporidium* treatment required 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. *Treatment technique 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 paragraph “a” is a violation of the treatment technique requirement.

d. *Significant changes to the watershed.* If the department determines during a sanitary survey or an equivalent source water assessment that significant changes occurred in the system’s watershed after completing its source water monitoring (either round), which could lead to increased contamination of the source water by *Cryptosporidium*, the system must take actions specified by the department to address the contamination. These actions may include additional source water monitoring and implementing microbial toolbox options listed in 43.11(8).

43.11(7) *Schedule for compliance with Cryptosporidium treatment requirements.* Following initial bin classification under 43.11(5), systems must provide the level of treatment for *Cryptosporidium* required in 43.11(6), according to the schedule in Table 5.

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.

If the bin classification of a system changes following the second round of source water monitoring, the system must provide the level of treatment for *Cryptosporidium* required in 43.11(6), on a schedule approved by the department.

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). The following table 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
Source Protection and Management Options		
Watershed control program	43.11(9)	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	43.11(9)“b”	No prescribed credit. Systems may conduct simultaneous monitoring for treatment bin classification at alternative intake locations or under alternative intake management strategies.
Pre-Filtration Toolbox Options		
Presedimentation basin with coagulation	43.11(10)“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	43.11(10)“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	43.11(10) "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	43.11(11) "a"	0.5-log credit for combined filter effluent turbidity less than or equal to 0.15 NTU in at least 95 percent of measurements each month.
Individual filter performance	43.11(11) "b"	0.5-log credit (in addition to the 0.5-log combined filter performance credit) if individual filter effluent 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	43.11(11) "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)	43.11(12) "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)	43.11(12) "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	43.11(12) "b"	Log credit equivalent to removal efficiency demonstrated in challenge test for device if supported by direct integrity testing.
Second stage filtration	43.11(12) "c"	0.5-log credit for second separate granular media filtration stage if treatment train includes coagulation prior to first filter.
Slow sand filters	43.11(12) "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	43.11(13)	Log credit based on measured CT in relation to CT table.
Ozone	43.11(13)	Log credit based on measured CT in relation to CT table.
Ultraviolet light (UV)	43.11(13)	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. Systems receive 0.5-log *Cryptosporidium* treatment credit for implementing a watershed control program that meets the requirements of this paragraph.

(1) Notification. Systems that intend to apply for the watershed control program credit must notify the department of this intent no later than two years prior to the treatment compliance date applicable to the system in 43.11(7).

(2) Proposed watershed control plan. Systems must submit to the department a proposed watershed control plan no later than one year before the applicable treatment compliance date in 43.11(7). The department must approve the watershed control plan for the system to receive watershed control program treatment credit. The watershed control plan must include the elements listed below.

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 identified in the plan.

(3) Existing watershed control programs. Systems with watershed control programs that were in place on January 5, 2006, are eligible to seek this credit. Their watershed control plans must meet the criteria in paragraph 43.11(9)“a”(2) and must specify ongoing and future actions that will reduce source water *Cryptosporidium* levels.

(4) Department response to submitted 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 watershed control program 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 watershed control program status report to the department. The annual watershed control program status report must describe the system’s implementation of the approved plan and assess the adequacy of the plan to meet its goals. It 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 changes that have occurred in the watershed since the last watershed sanitary survey. If a system determines during implementation that making a significant change to its approved watershed control program is necessary, the system must notify the department prior to making any such changes. If any change is likely to reduce the level of source water protection, the system must also list in its notification the actions the system will take to mitigate this effect.

2. Undergo a watershed sanitary survey every three years for community water systems and every five years for noncommunity water systems, and submit the survey report to the department. The survey must be conducted according to department guidelines and by persons the department approves.

- The watershed sanitary survey must meet the following criteria: 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 date specified by the department, which may be earlier than the regular schedule of three or five year frequency.

3. The system 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 a plain language style and include criteria by which to evaluate the success of the program in achieving plan goals. The department may approve systems to withhold portions of the annual status report, watershed control plan, and watershed sanitary survey from the public, based on water supply security considerations.

(6) Withdrawal of watershed control program treatment credit. If the department determines that a system is not carrying out the approved watershed control plan, the department may withdraw the watershed control program treatment credit.

b. Alternative source. A system 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)“a”.

(2) Alternative source monitoring must meet the requirements for source monitoring to determine bin classification, as described in 43.11(3)“a” through “e”. Systems must report the alternative source monitoring results to the department, along with supporting information documenting the operating conditions under which the samples were collected.

(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 procedures for managing the timing or level of withdrawal from the source, the system 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) Pre-filtration 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 surface water or influenced groundwater source.

(2) The system must continuously add a coagulant to the presedimentation basin.

(3) The presedimentation basin must achieve the performance criteria in either of the following subparagraphs.

1. Demonstrates at least 0.5-log mean reduction of influent turbidity. This reduction must be determined using daily turbidity measurements in the presedimentation process influent and effluent and must be calculated as follows: $\text{LOG}_{10}(\text{monthly mean of daily influent turbidity}) - \text{LOG}_{10}(\text{monthly mean of daily effluent turbidity})$.

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 surface water or influenced groundwater 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 they begin 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 groundwater flow path of at least 25 feet receive 0.5-log treatment credit; wells with a groundwater flow path of at least 50 feet receive 1.0-log treatment credit. The groundwater flow path must be determined as specified in “c”(4).

(2) Granular aquifers only. Only 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) Horizontal and vertical wells only. Only horizontal and vertical wells are eligible for treatment credit.

(4) Measurement of groundwater flow path. For vertical wells, the groundwater 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 groundwater flow path is the measured distance from the bed of the river under normal flow conditions to the closest horizontal well lateral screen.

(5) 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, the department may revoke treatment credit until the system implements corrective actions approved by the department to remediate the problem.

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. Combined filter effluent (CFE) turbidity must be less than or equal to 0.15 NTU in at least 95% 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, which can be in addition to the CFE 0.5-log credit from the previous paragraph. 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 the previous two paragraphs during any month does not receive a treatment technique 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 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 that meets 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) Approval by the department 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.* Systems receive *Cryptosporidium* treatment credit of up to 2.0-log for individual bag or cartridge filters and up to 2.5-log for bag or cartridge filters operated in series by meeting the criteria in this paragraph. To be eligible for this credit, systems must report the results of challenge testing that meets the requirements of subparagraphs 2-9 to the department. The filters must treat the entire plant flow taken from a surface water or influenced groundwater source.

(1) The *Cryptosporidium* treatment credit awarded to bag or cartridge filters must be based on the removal efficiency demonstrated during challenge testing that is conducted in accordance with the criteria in subparagraphs 2-9. 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. Systems may use results from challenge testing conducted prior to January 5, 2006, if the prior testing was consistent with the criteria specified in this paragraph.

(2) Challenge testing must be performed on full-scale bag or cartridge filters, and the associated filter housing or pressure vessel, 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) Challenge testing must be conducted 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 concentration of the challenge particulate must be determined using a method capable of discretely quantifying the specific microorganisms or surrogate used in the test; gross measurements such as turbidity may 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:

$$\text{Maximum Feed Concentration} = 10,000 \times \text{Filtrate Detection Limit}$$

(5) Challenge testing must be conducted at the maximum design flow rate for the filter as 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 establishes the maximum pressure drop under which the filter may be used to comply with the requirements of 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 using 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 = the feed concentration measured during the challenge test; and

C_p = the filtrate concentration measured during the 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, challenge testing to demonstrate the removal efficiency of the modified filter must be conducted and submitted to the department.

b. Membrane filtration.

(1) Systems receive *Cryptosporidium* treatment credit for membrane filtration that meets the criteria of this paragraph. Membrane cartridge filters that meet the definition of membrane filtration in 567-40.2 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 subparagraphs:

1. The removal efficiency demonstrated during challenge testing conducted under the criteria in subparagraph “b”(2).

2. The maximum removal efficiency that can be verified through direct integrity testing used with the membrane filtration process under the conditions in subparagraph “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 results of challenge testing to the department. Challenge testing must be conducted according to the criteria listed in this subparagraph. Systems may use data from challenge testing conducted prior to January 5, 2006 if the prior testing was consistent with the criteria listed in this subparagraph.

1. Challenge testing must be conducted 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. Challenge testing must be conducted 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 may 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:

$$\text{Maximum Feed Concentration} = 3,160,000 \times \text{Filtrate Detection Limit}$$

4. Challenge testing must be conducted 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. Removal efficiency of a membrane module must be calculated from the challenge test results and expressed as a log removal value 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 = the feed concentration measured during the challenge test; and

C_p = the filtrate concentration measured during the 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 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 $\text{LRV}_{\text{C-Test}}$ is equal to the lowest of the representative LRVs among the modules tested. If 20 or more modules are tested, then $\text{LRV}_{\text{C-Test}}$ 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 non-destructive performance test that demonstrates the *Cryptosporidium* removal capability of the membrane filtration module. This performance test must be applied to each production membrane module used by the system that was not directly challenge tested in order to verify *Cryptosporidium* removal capability. 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 non-destructive performance test and associated QCRV, additional challenge testing to demonstrate the removal efficiency of the modified membrane must be conducted and submitted to the department, along with determination of a new QCRV.

(3) *Direct integrity testing.* Systems must conduct direct integrity testing in a manner that demonstrates a removal efficiency equal to or greater than the removal credit awarded to the membrane filtration process and meets the requirements described in this subparagraph. A direct integrity test 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. The direct integrity test 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 direct integrity 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 direct integrity test.

3. The direct integrity test must have a sensitivity sufficient to verify the log treatment credit awarded to the membrane filtration process by the department, where sensitivity is defined as the maximum log removal value that can be reliably verified by a direct integrity test. Sensitivity must be determined using the approach in either of the following paragraphs as applicable to the type of direct integrity test the system uses.

- For direct integrity tests that use an applied pressure or vacuum, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = \text{LOG}_{10} [Q_p / (\text{VCF} \times Q_{\text{breach}})]$$

Where:

LRV_{DIT} = the sensitivity of the direct integrity test;

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 direct integrity tests that use a particulate or molecular marker, the direct integrity test sensitivity must be calculated according to the following equation:

$$LRV_{DIT} = \text{LOG}_{10} (C_f) - \text{LOG}_{10} (C_p)$$

Where:

LRV_{DIT} = the sensitivity of the direct integrity test;
C_f = the typical feed concentration of the marker used in the test; and
C_p = the filtrate concentration of the marker from an integral membrane unit.

4. Systems must establish a control limit within the sensitivity limits of direct integrity test that is indicative of an integral membrane unit capable of meeting the removal credit awarded by the department.

5. If the result of a direct integrity test exceeds the control limit established under the previous subparagraph, the system must remove the membrane unit from service. Systems must conduct a direct integrity test to verify any repairs, and may return the membrane unit to service only if the direct integrity test is within the established control limit.

6. Systems must conduct direct integrity testing 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 direct integrity testing of membrane units in accordance with the criteria in 43.11(12)"b"(3)(1) through (5) is not subject to the requirements for continuous indirect integrity monitoring. 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. Unless the department approves an alternative parameter, continuous indirect integrity monitoring must include continuous filtrate turbidity monitoring.

2. Continuous monitoring must be conducted at a frequency of no less than once every 15 minutes.

3. Continuous monitoring must be separately conducted on each membrane unit.

4. 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), direct integrity testing must immediately be performed on the associated membrane unit as specified in 43.11(12)"b"(3)(1) through (5).

5. 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, direct integrity testing 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 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 surface water or influenced groundwater 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 a slow sand filtration process that follows a separate stage

of filtration if both filtration stages treat entire plant flow taken from a surface water or influenced groundwater 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 to 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 paragraphs “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 measureable 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.

(1) Systems receive the *Cryptosporidium* treatment credit listed in Table 1 of Appendix B by meeting the corresponding chlorine dioxide CT value for the applicable water temperature, as described in paragraph “a”.

(2) Systems receive the *Cryptosporidium* treatment credit listed in Table 2 of Appendix B by meeting the corresponding ozone CT values for the applicable water temperature, as described in paragraph “a”.

c. Site-specific study. The department may approve alternative chlorine dioxide or ozone CT values to those listed in paragraph “b” on a site-specific basis. The department must base this approval on a site-specific study a system conducts that follows a department-approved protocol.

d. Ultraviolet light. Systems receive *Cryptosporidium*, *Giardia lamblia*, and virus treatment credits for ultraviolet (UV) light reactors by achieving the corresponding UV dose values shown in Table 3 of Appendix B. Systems must validate and monitor UV reactors to demonstrate that they are achieving a particular UV dose value for treatment credit, using the following procedures.

(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 inlet and outlet piping or channel configurations of the UV reactor.

2. Validation testing must include the following: 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 paragraph “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 must recalibrate sensors in accordance with a protocol approved by the department.

2. To receive treatment credit for UV light, systems must treat at least 95% 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 the monitoring required under “d”(2)(1).

43.11(14) Reporting requirements.

a. *Sampling schedules and monitoring results.* Systems must report source water sampling schedules and monitoring results under 567-43.11(3)“c” and 567-43.11(3)“e”, unless they notify the department that they will not conduct source water monitoring due to meeting the criteria of 5.5 log treatment for *Cryptosporidium* under 567-43.11(3)“a”.

b. *Cryptosporidium bin classification.* Systems must report their *Cryptosporidium* bin classification determined under 567-43.11(5).

c. *Disinfection profiles and benchmarks.* Systems must report disinfection profiles and benchmarks to the department as described in 43.11(4)“a” and “b” prior to making a significant change in disinfection practice.

d. *Microbial toolbox options.* Systems must report to the department in accordance with Table 7 for any microbial toolbox options used to comply with treatment requirements under 567-43.11(6).

Table 7: Microbial Toolbox Reporting Requirements

Toolbox Option	Systems must submit this information	Information must be submitted on this schedule
1. Watershed Control Program	Notice of intention to develop a new or continue an existing watershed control program	No later than two years before the applicable treatment compliance date in 567-43.11(7).
	Watershed control plan	No later than one year before the applicable treatment compliance date in 567-43.11(7).
	Annual watershed control program status report	Every 12 months, beginning one year after the applicable treatment compliance date in 567-43.11(7).
	Watershed sanitary survey report	For community water systems, every three years beginning three years after the applicable treatment compliance date in 567-43.11(7). For noncommunity water systems, every five years beginning five years after the applicable treatment compliance date in 567-43.11(7).
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 treatment compliance date in 567-43.11(7).
3. Presedimentation	Monthly verification of the following:	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
	- Continuous basin operation	
	- Treatment of 100% of the flow	
	- Continuous addition of a coagulant	
	- At least 0.5-log mean reduction of influent turbidity or compliance with	

	alternative department-approved performance criteria.	
4. Two-stage lime softening	Monthly verification of the following:	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
	- Chemical addition and hardness precipitation occurred in two separate and sequential softening stages prior to filtration	
	- Both stages treated 100% of plant flow	
5. Bank filtration	Initial demonstration of the following:	No later than the applicable treatment compliance date in 567-43.11(7).
	- Unconsolidated, predominantly sandy aquifer	
	- Setback distance of at least 25 feet for 0.5-log credit or 50 feet for 1.0-log credit	
	If monthly average of daily max turbidity is greater than 1 NTU then system must report result and submit an assessment of the cause.	Report within 30 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
6. Combined filter performance	Monthly verification of combined filter effluent (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 in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
7. Individual filter performance	Monthly verification of the following:	Monthly reporting within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
	- Individual filter effluent (IFE) turbidity levels less than or equal to 0.15 NTU in at least 95 percent of samples each month in each filter	
	- No individual filter effluent turbidity levels greater than 0.3 NTU in two consecutive readings 15 minutes apart.	
8. Demonstration of performance	Results from testing following a department approved protocol.	No later than the applicable treatment compliance date in 567-43.11(7).
	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 in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
9. Bag filters and cartridge filters	Demonstration that the following criteria are met	No later than the applicable treatment compliance date in 567-43.11(7).
	- Process meets the definition of bag or cartridge filtration	
	- Removal efficiency established through challenge testing that meets criteria in this subpart	
	Monthly verification that 100% of plant flow was filtered.	Within 10 days following the month in which the monitoring was

		conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
10. Membrane filtration	Results of verification testing demonstrating the following:	No later than the applicable treatment compliance date in 567-43.11(7).
	- Removal efficiency established through challenge testing that meets criteria	
	- Integrity test method and parameters, including resolution, sensitivity, test frequency, control limits, and associated baseline.	
	Monthly report summarizing the following:	
	- All direct integrity tests above the control limit	
	- If applicable, any turbidity or alternative depart-approved indirect integrity monitoring results triggering direct integrity testing and the corrective action that was taken.	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
11. Second stage filtration	Monthly verification that 100% of flow was filtered through both stages and that first stage was preceded by coagulation step.	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
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% of the flow from surface or influenced groundwater sources.	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
13. Chlorine dioxide	Summary of CT values for each day as described in 43.11(13).	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
14. Ozone	Summary of CT values for each day as described in 43.11(13).	Within 10 days following the month in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).
15. Ultraviolet Light (UV)	Validation test results demonstrating operating conditions that achieve required UV dose.	No later than the applicable treatment compliance date in 567-43.11(7).
	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 in which the monitoring was conducted, beginning on the applicable treatment compliance date in 567-43.11(7).

43.11(15) Recordkeeping requirements.

a. Source water monitoring records. 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 treatment for Cryptosporidium. Systems must keep records of any notification to the department that they will meet the 5.5 log *Cryptosporidium* treatment requirements and avoid source water monitoring, for three years.

c. Microbial toolbox treatment monitoring records. Systems must keep the results of treatment monitoring associated with microbial toolbox options under 43.11(8) through 43.11(13).

Item 52. Adopt the following new rule 43.12(455B):

567—43.12(455B) Optimization Goals

43.12(1) Turbidity optimization goals. Surface water and IGW systems must meet the requirements listed in 43.5, 43.9, and 43.10. To encourage operational optimization, the department has also adopted the following goals for systems using surface water or influenced groundwater 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 the rules in 43.5, 43.9, 43.10, or 43.11 unless the optimization data are identical to the compliance data.

a. Sedimentation performance goals. The sedimentation performance goals are based upon the average annual raw water turbidity levels.

(1) When the annual average raw water turbidity is 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% 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.

(2) When the annual average raw water turbidity is 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% 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. Individual filter performance goals. The individual filter performance goals depend upon the system’s capability of filtering to waste.

(1) 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% 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 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 less than or equal to 0.10 NTU.

(2) 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% 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 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.

c. Combined filter performance goals. The combined filter performance goal has two components.

(1) Combined filter effluent turbidity should be less than or equal to 0.10 NTU in at least 95% 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.

(2) The maximum individual filter turbidity must not exceed 0.30 NTU at any time.

43.12(2) Disinfection optimization goals. (Reserved)

Item 53. Adopt the following new Appendix B in Chapter 43:

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	118	122
3.0	1912	1830	1675	1534	1286	1079	830	536	347	226	147

¹ Systems 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	44	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

¹ Systems 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 Table 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
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¹The treatment credits listed in this table 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.

Item 54. Amend paragraph 83.1(3)“a” as follows:

a. *Water supply (drinking water).* The requirements of this chapter apply to all laboratories conducting drinking water analyses pursuant to 567—Chapters 40, 41, 42, and 43, ~~and 47~~. Routine, on-site monitoring for alkalinity, calcium, conductivity, residual disinfectant, orthophosphate, pH, silica, temperature, turbidity and on-site operation and maintenance-related analytical monitoring are excluded from this requirement, and 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 a Grade I, II, III, or IV certified operator meeting the requirements of 567—Chapter 81, or a laboratory certified by the department to perform water supply analyses under this chapter.

Item 55. Amend paragraph 83.6(4)“a” as follows:

a. *Certification of the ~~University~~ State of Iowa Hygienic Laboratory.* The department has designated the ~~University~~ State of Iowa Hygienic Laboratory (~~UHL~~ SHL) as its appraisal authority for laboratory certification. ~~The U.S. Environmental Protection Agency is responsible for the certification of UHL for the SDWA program, and The SHL is responsible for attaining and maintaining laboratory certification for the SDWA program that is acceptable to the U.S. Environmental Protection Agency (EPA).~~ ~~the UHL~~ The SHL quality assurance officer is responsible for the certification of ~~UHL~~ SHL for those programs with no available EPA certification program, including wastewater, underground storage tank, solid waste, and contaminated site programs. The ~~UHL~~ SHL quality assurance officer reports directly to the office of the ~~UHL~~ SHL director and operates independently of all areas of the laboratory generating data to ensure complete objectivity in the evaluation of laboratory operations. The quality assurance officer will schedule a biennial on-site inspection of the ~~UHL~~ SHL and review results for acceptable performance. Inadequacies or unacceptable performance shall be reported by the quality assurance officer to the ~~UHL~~ SHL and the department for correction. The department shall be notified if corrective action is not taken.

Item 56. Amend subparagraph 83.6(6)“a”(1) as follows:

(1) Certified laboratories must report to the department, or its designee such as ~~UHL~~ SHL, all analytical test results for all public water supplies, using forms provided or approved by the department or by electronic means acceptable to the department. If a public water supply 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. It is the responsibility of the laboratory to correctly assign and track the sample identification number as well as 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 which includes samples collected for compliance purposes from such locations as the source/entry point and in the distribution system, at various sampling frequencies;

- Repeat: a sample which must be collected after a positive result from a routine or previous repeat total coliform sample, per 567—41.2(455B). Repeat samples must be analyzed at the same laboratory from which the associated original routine sample was analyzed;
- Confirmation: a sample which verifies a routine sample, normally used in determination of compliance with a health-based standard, such as nitrate;
- 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 which is collected at the maximum residence time location in the distribution system, usually for disinfection byproduct measurement; and
- Replacement: a sample which 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:

- Monthly Operation Report (MOR) data which has been specifically required by the department to demonstrate compliance with public health standards;
- Chemical results not required to be analyzed but which are detected during analysis, such as detection of a synthetic organic chemical during a routine analysis of that related analytical series for compliance reporting; 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 the laboratory to the department:

- Routine MOR data;
- Distribution samples for the Total Coliform Rule for water main repair or installation; or
- Results for contaminants that are not required by the department to be analyzed, which are below detection level.

4. The sample type cannot be changed after submittal to the laboratory, without written approval by the department. The prescreening, splitting, or selective reporting of compliance samples is not allowed.

Item 57. Amend subparagraph 83.6(7)“a”(6) as follows:

(6) Disinfection byproducts. To obtain certification to conduct analyses for disinfection byproducts listed in 567—paragraph 41.6(1)“b,” laboratories must:

1. Analyze PE samples approved by EPA, the department, or a third-party provider acceptable to the department at least once a year during each consecutive 12 month period by each method for which the laboratory desires certification;

2. ~~Achieve quantitative results within the acceptance limit on a minimum of 80 percent of the analytes included in each PE sample. The acceptance limit is defined as the 95 percent confidence interval calculated around the mean of the PE study data. However, the acceptance limit range shall not exceed plus or minus 50 percent or be less than plus or minus 15 percent of the study mean; and~~

3. ~~Be currently certified by EPA or the department to perform analyses to the specifications described in 567—paragraph 41.6(1)“d.”~~ Achieve quantitative results on the PE sample analyses that are within the following acceptance limits:

<u>Disinfection Byproduct</u>	<u>Acceptance limits (plus or minus this percent of true value)</u>	<u>Comments</u>
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<u>TTHM</u>		Laboratory must meet all four individual THM acceptance limits in order to successfully pass a PE sample for TTHM.
<u>Bromoform</u>	<u>20</u>	
<u>Bromodichloromethane</u>	<u>20</u>	
<u>Chloroform</u>	<u>20</u>	
<u>Dibromomethane</u>	<u>20</u>	
<u>HAA5</u>		Laboratory must meet the acceptance limits for 4 of the 5 HAA5 compounds in order to successfully pass a PE sample for HAA5.
<u>Monobromoacetic Acid</u>	<u>40</u>	
<u>Dibromoacetic Acid</u>	<u>40</u>	
<u>Monochloroacetic Acid</u>	<u>40</u>	
<u>Dichloroacetic Acid</u>	<u>40</u>	
<u>Trichloroacetic Acid</u>	<u>40</u>	
<u>Chlorite</u>	<u>30</u>	
<u>Bromate</u>	<u>30</u>	

3. Report quantitative data for concentrations at least as low as the levels listed in the following table for all disinfection byproduct samples analyzed for compliance with 567-41.6 (455B).

<u>Disinfection Byproduct</u>	<u>Minimum reporting level, mg/L¹</u>	<u>Comments</u>
<u>TTHM²</u>		
<u>Bromoform</u>	<u>0.0010</u>	
<u>Bromodichloromethane</u>	<u>0.0010</u>	
<u>Chloroform</u>	<u>0.0010</u>	
<u>Dibromomethane</u>	<u>0.0010</u>	
<u>HAA5²</u>		
<u>Monobromoacetic Acid</u>	<u>0.0010</u>	
<u>Dibromoacetic Acid</u>	<u>0.0010</u>	
<u>Monochloroacetic Acid</u>	<u>0.0020</u>	
<u>Dichloroacetic Acid</u>	<u>0.0010</u>	
<u>Trichloroacetic Acid</u>	<u>0.0010</u>	
<u>Chlorite</u>	<u>0.020</u>	Applicable to chlorite monitoring conducted by a certified laboratory required under 41.6(1)“c”(3)(2) and 41.6(1)“c”(3)(3).
<u>Bromate</u>	<u>0.0050 or 0.0010</u>	Laboratories that use EPA Methods 317.0 Revision 2, 321.8, or 326.0 must meet a 0.0010 mg/L MRL for bromate.

¹The calibration curve must encompass the regulatory minimum reporting level (MRL) concentration. Data may be reported for concentrations lower than the regulatory MRL as long as the precision and accuracy criteria are met by analyzing an MRL check standard at the lowest reporting limit chosen by the laboratory. The laboratory must verify the accuracy of the calibration curve at the MRL concentration by analyzing an MRL check standard with a concentration less than or equal to 100 percent of the MRL with each batch of samples. The measured concentration for the MRL check standard must be plus or minus 50 percent of the expected value, if any field sample in the batch has a concentration less than five times the regulatory MRL. Method requirements to analyze higher concentration check standards and meet tighter acceptance criteria for them must be met in addition to the MRL check standard requirement.

²When adding the individual trihalomethanes or haloacetic acid concentrations to calculate the TTHM or HAA5 concentrations, respectively, a zero is used for any analytical result that is less than the MRL concentration for that DBP, unless otherwise specified by the department.

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

ITEM

10

DECISION

TOPIC

**Contract – University of Iowa – Water Assessment Services Staff
Support**

Recommendation:

The Department requests Commission approval of amendment #4 of this contract for an amount not to exceed \$82,953 to provide one full time employee from September 1, 2011 through August 31, 2012.

Funding Source:

The source of funds for the contact is a combination of storm water permit fees and clean water SRF administration funds.

Purpose:

This employee will continue to replace Corey McCoid who is currently deployed by the Iowa National Guard. Corey's deployment has been extended for an additional 12 months. The employee will support the Water Quality Bureau and the Iowa Geology and Water Survey Bureau.

Scope of Work:

The employee's duties include managing bureau budgets and inventory, coordinating the development of rules for the WQ Bureau, coordinating development of strategic plans and reporting on bureau performance and completing technical projects as assigned by Bureau Chief

Sharon Tahtinen, Acting Bureau Chief
Water Quality Bureau
Environmental Services Division

July 20, 2011

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

ITEM

11

DECISION

TOPIC

Contract with Council Bluffs Department of Public Health for Filter and Sampler Data Collection & Transmittal

Recommendations:

Commission approval is requested for a four (4) year-service contract with the Council Bluffs Department of Public Health of Council Bluffs, IA. The contract will begin on October 1, 2011 and terminate on September 30, 2015. The total amount of this contract shall not exceed \$56,056.

Funding Source:

This contract will be funded through cost reimbursable payments funded by Title V program fees (not to exceed \$2,803), Environmental First funds (not to exceed \$44,845), and 103 federal grant dollars (not to exceed \$8,408).

The statutory authority for the DNR to enter into this contract is 455B.103.

Background:

Ambient air monitoring filters and samplers are in various locations throughout the state. The data collected in these filters/samplers is used by the DNR in determining the levels of air pollutants in the specific locations where the samples are collected. The DNR contracts with the State of Iowa Hygienic Laboratory (SHL) to collect a majority of the filter/sampler data and to then analyze the collected data. The DNR also employs local contractors to collect filters and sampler data in areas of the state where it would be cost prohibitive to include the area as part of a routine route for filter pickup to be conducted by SHL.

Purpose:

The parties propose to enter into this Contract for the purpose of retaining the Council Bluffs Department of Public Health to collect filter and sampler data from ambient air monitoring samplers for transmittal to the State of Iowa Hygienic Laboratory (SHL). Data collection will take place from ambient air monitoring sites in/near Council Bluffs, IA.

Contractor Selection Process:

The DNR is allowed to contract with the Council Bluffs Department of Public Health without using a competitive selection process pursuant to state law.

The DNR has chosen to continue to contract with the Council Bluffs Department of Public Health for this project because 1) Council Bluffs has previous experience with handling air monitoring filter and sampler data and transmittal of data to SHL, 2) Council Bluffs already has a working relationship with SHL, meets the requirements as deemed necessary by the DNR to complete the work, and has received training in the past.

Christina Iiams
Program Planner 2
Air Quality Bureau – Environmental Services Division
August 16, 2011

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

ITEM

12

DECISION

TOPIC

**Contract with Polk County for Execution of the State of Iowa Air
Pollution Control Implementation Plan: Polk County**

Recommendations:

Commission approval is requested for a ten (10) month service contract with the county government of Polk County; Des Moines, IA. The contract will begin on September 1, 2011 and terminate on June 30, 2012. The total amount of this contract shall not exceed \$766,919. This contract is an Iowa Code Chapter 28E agreement.

Funding Source:

The statutory authority for the DNR to enter into this contract is 455B.145. This contract will be funded through cost reimbursable payments funded by Title V program fees (not to exceed \$545,575), 105 federal grant dollars (not to exceed \$208,344), and 103 federal grant dollars (not to exceed \$13,000). Polk County has a funding commitment of \$200,646.00.

There is a state contribution increase of \$104,419 from SFY 2011 mainly due to personnel/benefit costs and a one-time expense for a near-road monitoring site.

Background:

The Polk County Air Quality Division will be responsible for the ongoing implementation of an air program within Polk County, as established under the requirements of this contract. The Polk County Air Quality Division has a certificate of acceptance pursuant to Iowa Code Section 455B.145, as implemented in 567 IAC Chapter 27.

In June 2011, the Commission approved a two month amendment to the SFY 2011 contract that would allow Polk County to continue work until a SFY 2012 contract could be negotiated. The total state contribution of the amendment was not to exceed \$148,685.00. Under both the SFY 2012 contract being recommended for approval and the two month amendment, the DNR will pay Polk County a combined total of \$913,979 for SFY 2012 activities.

Purpose:

The parties propose to enter into this Contract to ensure that Polk County meets the conditions necessary to retain a Local Program as specified in Iowa Code § 455B.145 and 567 Iowa Administrative Code (IAC) Chapter 27 and to specify the extent and manner of cooperation between the two agencies in conducting programs for the abatement, control, and prevention of air pollution within Polk County. Particular emphasis is placed on the collection and assessment of information regarding air quality, the permitting of sources of air emissions, the enforcement of emission limits, and the attainment and maintenance of ambient air quality standards.

Contractor Selection Process:

The DNR is allowed to contract with Polk County without using a competitive selection process pursuant to state law.

The DNR has chosen to continue to contract with Polk County for this project because 1) Successful implementation of an air program has been demonstrated by the continued attainment of air quality standards in Polk County, 2) Sources appreciate the local access they have available to them, and 3) Polk County had a local program (including ordinances and enforcement in place) prior to the DNR's delegation from EPA for an air program

Christina Iiams
Program Planner 2
Air Quality Bureau – Environmental Services Division
August 16, 2011

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

ITEM

12b

DECISION

TOPIC

**Contract with Linn County for Execution of the State of Iowa Air
Pollution Control Implementation Plan: Linn County**

Recommendations:

Commission approval is requested for a ten (10) month service contract with the county government of Linn County; Cedar Rapids, IA. The contract will begin on September 1, 2011 and terminate on June 30, 2012. The total amount of this contract shall not exceed \$683,019. This contract is an Iowa Code Chapter 28E agreement.

Funding Source:

The statutory authority for the DNR to enter into this contract is 455B.145. This contract will be funded through cost reimbursable payments funded by Title V program fees (not to exceed \$564,962), 105 federal grant dollars (not to exceed \$106,307), and 103 federal grant dollars (not to exceed \$11,750). Linn County has a funding commitment of \$180,506.00.

There is a state contribution increase of \$11,605 from SFY 2011 mainly due to personnel/benefit costs.

Background:

The Linn County Air Quality Division will be responsible for the ongoing implementation of an air program within Linn County, as established under the requirements of this contract. The Linn County Air Quality Division has a certificate of acceptance pursuant to Iowa Code Section 455B.145, as implemented in 567 IAC Chapter 27.

In June 2011, the Commission approved a two month amendment to the SFY 2011 contract that would allow Linn County to continue work until a SFY 2012 contract could be negotiated. The total state contribution of the amendment was not to exceed \$137,350.00. Under both the SFY 2012 contract being recommended for approval and the two month amendment, the DNR will pay Linn County a combined total of \$813,626 for SFY 2012 activities.

Purpose:

The parties propose to enter into this Contract to ensure that Linn County meets the conditions necessary to retain a Local Program as specified in Iowa Code § 455B.145 and 567 Iowa Administrative Code (IAC) Chapter 27 and to specify the extent and manner of cooperation between the two agencies in conducting programs for the abatement, control, and prevention of air pollution within Linn County. Particular emphasis is placed on the collection and assessment of information regarding air quality, the permitting of sources of air emissions, the enforcement of emission limits, and the attainment and maintenance of ambient air quality standards.

Contractor Selection Process:

The DNR is allowed to contract with Linn County without using a competitive selection process pursuant to state law.

The DNR has chosen to continue to contract with Linn County for this project because 1) Successful implementation of an air program has been demonstrated by the continued attainment of air quality standards in Linn County, 2) Sources appreciate the local access they have available to them, and 3) Linn County had a local program (including ordinances and enforcement in place) prior to the DNR's delegation from EPA for an air program

Christina Iiams; Program Planner 2
Air Quality Bureau – Environmental Services Division
August 16, 2011

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

ITEM

13

DECISION

TOPIC

**Notice of Intended Action - Chapters 22 and 33:
Air Quality Program Rules – PSD and Title V Programs: Three-
Year Deferral of Biogenic CO₂ Emissions**

The Department is requesting permission from the Commission to proceed with the rulemaking process and publish a Notice of Intended Action to amend Chapter 22, “Controlling Pollution,” and Chapter 33, “Special Regulations and Construction Permit Requirements for Major Stationary Sources—Prevention of Significant Deterioration (PSD) of Air Quality,” of the Iowa Administrative Code.

The purpose of this rulemaking is to assure that certain stationary sources of carbon dioxide (CO₂) emissions in Iowa are regulated in the same manner as specified in recently amended federal regulations.

EPA recently finalized regulations deferring for a three-year period the counting of CO₂ emissions from biogenic sources towards PSD and Title V applicability. EPA defines biogenic CO₂ emissions as emissions of CO₂ from a stationary source directly resulting from the combustion or decomposition of biologically-based materials other than fossil fuels and mineral sources of carbon. Biogenic emissions of CO₂ include fermentation processes at ethanol plants and combustion of biomass such as wood or other vegetative matter at power plants or industrial facilities.

During this three-year deferral period, EPA states that it “will conduct a detailed examination of the science associated with biogenic CO₂ emissions from stationary sources. This study will consider technical issues that [EPA] must resolve in order to account for biogenic CO₂ emissions in ways that are scientifically sound and also manageable in practice.” At the end of the deferral period, EPA either may decide to exempt CO₂ emissions from biogenic sources, or may instead decide to include these emissions. If EPA decides to include CO₂ emissions from biogenic sources, it has indicated in the preamble to the federal regulations that it will not conduct a “look-back” at facilities that, during the deferral period, did not count CO₂ emissions from biogenic sources towards PSD applicability.

More information on EPA’s planned study, the signed, final amendments and fact sheet for the three-year deferral, as well as background information on the federal regulations, is available on EPA’s website at [EPA PSD regulations](#). More information about the state rules for greenhouse gases is available on the Department’s website at [DNR GHG regulations](#).

If the Department does not proceed at this time, state rules for PSD and Title V will be inconsistent with federal regulations, and will be more stringent than federal regulations, which is prohibited by state code (Iowa Code Section 455B.133(4)).

The Department has seven permitting projects in-house that are potentially affected by this rulemaking. If biogenic emissions are not deferred, at least six of these projects would very likely need to go through PSD review for greenhouse gas emissions.

Proposed Department Rulemaking and Implementation

The Department is proposing a rulemaking to amend the state's Title V and PSD air quality rules such that the state rules match the recent federal amendments affecting CO₂ emissions from biogenic sources.

The attached Notice of Intended Action includes three proposed amendments, one for the Title V Program and two for the PSD program. The amendment to the Title V rules revises the definition of "subject to regulation" to indicate that counting CO₂ emissions from biogenic sources for Title V applicability is deferred for three years, until July 21, 2014. The first amendment to the PSD rules simply updates the introductory paragraph for the federal amendment date being implemented through this rulemaking. The second amendment to the PSD rules amend the definition of "subject to regulation" to similarly indicate that counting CO₂ emissions from biogenic sources for PSD applicability is deferred for three years, until July 21, 2014.

If the Commission approves the proposed rulemaking, the Notice of Intended Action will be published in the Iowa Administrative Bulletin on September 7, 2011. A public hearing will be held on Tuesday, October 11, 2011, at 2:00 p.m. at the Department's Air Quality Bureau offices. The Department will accept written public comments until 4:30 p.m. on Tuesday, October 11, 2011.

An administrative rule jobs impact statement and fiscal impact statement are attached.

Christine Paulson
Environmental Specialist Senior
Program Development Section, Air Quality Bureau
Memo date: July 25, 2011

ENVIRONMENTAL PROTECTION COMMISSION [567]

Notice of Intended Action

Pursuant to the authority of Iowa Code section 455B.133, the Environmental Protection Commission hereby gives Notice of Intended Action to amend Chapter 22, “Controlling Pollution,” and Chapter 33, “Special Regulations and Construction Permit Requirements for Major Stationary Sources—Prevention of Significant Deterioration (PSD) of Air Quality,” Iowa Administrative Code.

The purpose of this rulemaking is to assure that certain stationary sources of carbon dioxide (CO₂) emissions in Iowa are regulated in the same manner as specified in recently amended federal regulations.

EPA recently finalized regulations deferring for a three-year period the counting of CO₂ emissions from biogenic sources towards PSD and Title V applicability. EPA defines biogenic CO₂ emissions as emissions of CO₂ from a stationary source directly resulting from the combustion or decomposition of biologically-based materials other than fossil fuels and mineral sources of carbon. Biogenic emissions of CO₂ include fermentation processes at ethanol plants and combustion of biomass such as wood or other vegetative matter at power plants or industrial facilities.

During this three-year deferral period, EPA states that it “will conduct a detailed examination of the science associated with biogenic CO₂ emissions from stationary sources. This study will consider technical issues that [EPA] must resolve in order to account for biogenic CO₂ emissions in ways that are scientifically sound and also manageable in practice.” At the end of

the deferral period, EPA either may decide to exempt CO₂ emissions from biogenic sources, or may instead decide to include these emissions. If EPA decides to include CO₂ emissions from biogenic sources, it has indicated in the preamble to the federal regulations that it will not conduct a “look-back” at facilities that, during the deferral period, did not count CO₂ emissions from biogenic sources towards PSD applicability.

More information on EPA’s planned study, the signed, final amendments and fact sheet for the three-year deferral, as well as background information on the federal regulations, is available on EPA’s website at [EPA PSD regulations](#). More information about the state rules for greenhouse gases is available on the Department’s website at [DNR GHG regulations](#).

If the Department does not proceed at this time, state rules for PSD and Title V will be inconsistent with federal regulations, and will be more stringent than federal regulations, which is prohibited by state code (Iowa Code Section 455B.133(4)).

The Department has seven permitting projects in-house that are potentially affected by this rulemaking. If biogenic emissions are not deferred, at least six of these projects would very likely need to go through PSD review for greenhouse gas emissions.

Item 1 amends rule 567—22.100(455B), the definitions for the Title V program.

Title V requires that an affected facility obtain a Title V operating permit. The Title V operating permit, which is renewed every five years, contains all air emission control requirements that apply to the facility, including the requirements established through construction permitting.

Specifically, Item 1 revises the definition of “subject to regulation.” The amendment to state rules is identical to the federal amendments (see 40 CFR 70.2, definition of “subject to

regulation,” as amended on July 20, 2011). The amendment states that CO₂ emissions from biogenic sources (explained in the rule text) are deferred from counting toward Title V program applicability for a period of three years, until July 21, 2014.

Item 2 amends rule 567—33.1(455B) to update the introductory paragraph in Chapter 33 for the date of the new federal PSD amendments being implemented through this rulemaking.

Item 3 amends subrule 33.3(1) the definitions for the PSD Program.

New source review (NSR) is a federal term for review and preconstruction permitting of new or modified stationary sources of air pollution. The PSD program is a component of NSR that includes procedures to ensure that air quality standards are maintained. In general, the PSD program requires that an affected facility obtain a PSD permit specifying how the facility will control emissions. The permit requires the facility to apply Best Available Control Technology (BACT), which is determined on a case-by-case basis taking into account, among other factors, the cost and effectiveness of the control. The specific nature of the project determines if it is subject to PSD requirements for GHGs.

Specifically, Item 3 amends the definition of “subject to regulation” for the PSD program. The definition includes the definition for “tpy CO₂ equivalent emissions (CO₂e).” The amendment to state rules is identical to the federal amendment for Tailoring Rule (see 40 CFR 52.21(b)(49), as amended on July 20, 2011). The amendment states that CO₂ emissions from biogenic sources (explained in the rule text) are deferred from counting toward PSD program applicability for a period of three years, until July 21, 2014.

The jobs impact of this rulemaking cannot be determined. Insufficient information exists to determine what impact the proposed rule will have on private sector jobs and employment opportunities in the State. The Department requested stakeholder input and did not receive any

information regarding jobs impacts in the state because of this rulemaking. However, the Department estimates that affected facilities will experience reduced regulatory burden as a result of this rulemaking because they will not be subject to the PSD or Title V programs during the deferral period. Therefore, facilities affected by this rulemaking should experience a positive impact on jobs.

Because of the urgency expressed by stakeholders to expedite this rulemaking, the Department is also proposing that the adopted and filed rules would become effective upon the date of filing with the Administrative Rules Coordinator, because the rulemaking confers a benefit or removes a restriction on a segment of the public, according to the provisions of Iowa Code section 17A.5(2)(b)(2). Under this schedule, the Department will accept comments for 30 days following publication of this Notice of Intended Action, through October 11, 2011. The Department plans to present final rules for approval to the Environmental Protection Commission on November 15, 2011. This will allow the Department to file the Adopted and Filed Notice for the rules with the Code Editor no later than November 16, 2011, at which time the adopted rules would become effective.

Any person may make written suggestions or comments on the proposed amendments on or before October 11, 2011. Written comments should be directed to Christine Paulson, Department of Natural Resources, Air Quality Bureau, 7900 Hickman Road, Suite 1, Windsor Heights, Iowa, 50324, fax (515) 242-5094, or by E-mail to christine.paulson@dnr.iowa.gov.

A public hearing will be held on Tuesday, October 11, 2011 at 2:00 p.m. in the conference rooms at the Department's Air Quality Bureau office located at 7900 Hickman Road, Windsor Heights, Iowa. All comments must be received no later than 4:30 p.m. on Tuesday, October 11, 2011.

Any person who intends to attend the public hearing and has special requirements such as those related to hearing or mobility impairments should contact Christine Paulson at (515) 242-5154 , or by E-mail at christine.paulson@dnr.iowa.gov to advise of any specific needs.

These amendments are intended to implement Iowa Code section 455B.133.

The following amendments are proposed.

ITEM 1. Amend **567—22.100(455B)**, the definition of “subject to regulation,” numbered paragraph “2,” as follows:

2. The term “tpy CO₂ equivalent emissions (CO₂e)” shall represent an amount of GHGs emitted and shall be computed by multiplying the mass amount of emissions (tpy) for each of the six greenhouse gases in the pollutant GHGs by the associated global warming potential of the gas published at 40 CFR Part 98, Subpart A, Table A-1, “Global Warming Potentials,” (as amended on October 30, 2009) and summing the resultant value for each to compute a tpy CO₂e. For purposes of this paragraph, prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms (including products, by-products, residues and waste from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material).

ITEM 2. Amend rule **567—33.1 (455B)** as follows:

567—33.1 (455B) Purpose. This chapter implements the major New Source Review (NSR) program contained in Part C of Title I of the federal Clean Air Act as amended on November 15, 1990, and as promulgated under 40 CFR 51.166 and 52.21 as amended through ~~November 29, 2005~~July 20, 2011. This is a preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under Part C of the Clean Air Act as amended on November 15, 1990. In areas that do not meet the national ambient air quality standards (NAAQS), the nonattainment NSR program applies. The requirements for the nonattainment NSR program are set forth in 567—22.5(455B) and 567—22.6(455B). In areas that meet the NAAQS, the PSD program applies. Collectively, the nonattainment NSR and PSD programs are referred to as the major NSR program.

ITEM 3. Amend subrule **33.3(1)**, definition of “subject to regulation,” numbered paragraph “2,” as follows:

2. For purposes of paragraphs “3,” “4,” and “5,” the term “tpy CO₂ equivalent emissions (CO₂e)” shall represent an amount of GHGs emitted and shall be computed as follows:

(a) Multiply the mass amount of emissions (tpy) for each of the six greenhouse gases in the pollutant GHGs by the associated global warming potential of the gas published at 40 CFR Part 98, Subpart A, Table A-1, “Global Warming Potentials,” (as amended on October 30, 2009), ~~and~~. For purposes of this paragraph, prior to July 21, 2014, the mass of the greenhouse gas carbon dioxide shall not include carbon dioxide emissions resulting from the combustion or decomposition of non-fossilized and biodegradable organic material originating from plants, animals, or micro-organisms (including products, by-products, residues and waste

from agriculture, forestry and related industries as well as the non-fossilized and biodegradable organic fractions of industrial and municipal wastes, including gases and liquids recovered from the decomposition of non-fossilized and biodegradable organic material).

(b) Sum the resultant value from paragraph (a) for each gas to compute a tpy CO₂e.

Date

Roger L. Lande, Director

**Administrative Rules
JOBS IMPACT STATEMENT**

1. BACKGROUND INFORMATION

Agency:	Iowa Department of Natural Resources
IAC Citation:	567 IAC Chapters 22and 33
Agency Contact:	Christine Paulson at (515) 242-5154
Statutory Authority:	Iowa Code, Section 455B.133 and United States Clean Air Act (CAA) Title I Part C (CAA §160-169b; USC § 7470-7492) and (CAA §501-507; USC §7661a)

Objective:	The purpose of this proposed rulemaking is to assure that certain sources of greenhouse gases (GHG) in Iowa are regulated in the same manner as specified in recently finalized federal regulations.
Summary:	EPA recently finalized regulations deferring for a three-year period the counting of carbon dioxide CO ₂ emissions from biogenic sources towards PSD and Title V applicability. Biogenic emissions of CO ₂ include fermentation processes at ethanol plants and combustion of biomass such as wood or other vegetative matter at power plants or industrial facilities. The proposed rulemaking will amend the state's Title V and PSD air quality rules for GHG emissions such that the state rules are identical to the federal amendments. The Department estimates that affected facilities will experience reduced regulatory burden as a result of this rulemaking because they will not be subject to the PSD or Title V programs during the deferral period.

2. JOB IMPACT ANALYSIS

<input checked="" type="checkbox"/> <i>Fill in this box if impact meets these criteria:</i>
<input type="checkbox"/> No Job Impact on private sector jobs and employment opportunities in the State.
<input checked="" type="checkbox"/> Job Impact cannot be determined.
Explanation: Insufficient information exists to determine what impact the proposed rule will have on private sector jobs and employment opportunities in the State.

<input type="checkbox"/> <i>Fill in this box if impact meets either of these criteria:</i>
<input type="checkbox"/> Positive Job Impact on private sector jobs and employment opportunities in the State.
<input type="checkbox"/> Negative Job Impact on private sector jobs and employment opportunities in the State.
Description and quantification of the nature of the impact the proposed rule will have on private sector jobs and employment opportunities:

Categories of jobs and employment opportunities that are affected by the proposed rule:
Number of jobs or potential job opportunities:
Regions of the state affected:
Additional costs to the employer per employee due to the proposed rule: (if not possible to determine, write "Not Possible to Determine.")

3. COST-BENEFIT ANALYSIS

The Agency has taken steps to minimize the adverse impact on jobs and the development of new employment opportunities before proposing a rule. See the following Cost-Benefit Analysis:

<p>No other less intrusive or expensive method exists for achieving the purpose of the proposed rule.</p>

4. FISCAL IMPACT

Please see the Fiscal Impact Statement for an identification and description of costs the Department anticipates state agencies, local governments, the public, and the regulated entities, including regulated businesses and self-employed individuals, will incur from implementing and complying with the proposed rule.

Administrative Rule Fiscal Impact Statement

Date: July 7, 2011

Agency: Department of Natural Resources

IAC Citation: 567 IAC 22 and 33

Agency Contact: Anne Preziosi

Summary of the Rule: The purpose of this proposed rulemaking is to assure that certain sources of greenhouse gases (GHG) in Iowa are regulated in the same manner as specified in recently finalized federal regulations.

EPA recently finalized regulations deferring for a three-year period the counting of CO₂ emissions from biogenic sources towards PSD and Title V applicability. EPA defines biogenic CO₂ emissions as emissions of CO₂ from a stationary source directly resulting from the combustion or decomposition of biologically-based materials other than fossil fuels and mineral sources of carbon. Biogenic emissions of CO₂ include, but are not limited to, fermentation processes at ethanol plants and combustion of biomass such as wood or other vegetative matter at power plants or industrial facilities.

The proposed rulemaking will amend the state's Title V and PSD air quality rules for GHG emissions such that the state rules are identical to the federal amendments.

Fill in this box if the impact meets these criteria:

No Fiscal Impact to the State.

Fiscal Impact of less than \$100,000 annually or \$500,000 over 5 years.

Fiscal Impact cannot be determined.

Brief Explanation: These amendments will likely provide a positive fiscal impact to the state because fewer facilities will need to go through PSD and Title V review.

Fill in the form below if the impact does not fit the criteria above:

Fiscal Impact of \$100,000 annually or \$500,000 over 5 years.

* Fill in the rest of the Fiscal Impact Statement form.

Assumptions:

Describe how estimates were derived:

Estimated Impact to the State by Fiscal Year

	<u>Year 1 (FY 2011)</u>	<u>Year 2 (FY 2012)</u>
Revenue by Each Source:		
GENERAL FUND	0\$	0\$
FEDERAL FUNDS	0\$	0\$
Other (specify)	0\$	0\$
	<hr/>	<hr/>
	0\$	0\$
TOTAL REVENUE		
Expenditures:		
GENERAL FUND	0\$	0\$
FEDERAL FUNDS	0\$	0\$
Other (specify) Air Contaminant Fee		
	<hr/>	<hr/>
TOTAL EXPENDITURES		

NET IMPACT

This rule is required by State law or Federal mandate.

Please identify the state or federal law:

Iowa Code, Section 455B.133 and United States Clean Air Act (CAA) Title I Part C (CAA §160-169b; USC § 7470-7492) and (CAA §501-507; USC §7661a), as codified in 40 Code of Federal Regulations 51.166, 52.21 and 70.2

Funding has been provided for the rule change.

Please identify the amount provided and the funding source:

Funding has not been provided for the rule.

Please explain how the agency will pay for the rule change:

The Department will utilize existing resources at this time.

Fiscal impact to persons affected by the rule:

It is difficult to estimate the fiscal impact to businesses and/or individuals based on the uncertainties listed above. However, the Department estimates that facilities will experience reduced regulatory burden as a result of this rulemaking because a part of the regulatory requirements of the PSD and Title V Programs will be deferred for three years.

Fiscal impact to Counties or other Local Governments (required by Iowa Code 25B.6):

There is no expected fiscal impact to counties or other local governments.

* If additional explanation is needed, please attach extra pages.

Agency Representative preparing estimate: Christine Paulson

Telephone Number: 515-242-5154

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

ITEM

14

DECISION

TOPIC

Contract – Source Water Protections Technical Assistance

Recommendation:

The Department requests Commission approval of a contract in the amount of \$80,000 with a yet-unknown contractor for 12 months.

The purpose of this RFP is to obtain the services of a contractor to provide technical assistance to DNR-selected community water systems to complete their Source Water Protection plans. The amount set aside for this contract shall not exceed \$80,000, and the duration will not be greater than 12 months.

Funding Source:

This project will be funded through federal funds, specifically the Environmental Protection Agency's Source Water Program. This program is paid out of the Drinking Water State Revolving Fund.

Background:

Iowa code **455B.183A** requires the Department of Natural Resources to enforce the federal Safe Drinking Water Act, and to support local public water supplies with operation and construction of their system. The federal Source Water Protection Program is designed to protect water in the natural environment, before treatment. This protection saves money for the local system and protects the drinking water of the local water supply.

Purpose:

The outcome of this contract is expected to be the successful completion of Source Water Protection plans for eight unique community water systems. Each of these plans will meet the standards of the Iowa Source Water Advisory Group and follow the Iowa Source Water guidelines. Among other benefits, the communities completing these plans will have a better understanding of their drinking water source(s), updated Emergency Response Plans, updated maps of their water system, and funding opportunities made more available to them.

Consulting Firm Selection Process:

A contractor has not been chosen. The Request for Proposals was let out to the general public on Thursday, August 04, 2011.

Chad Fields, Geologist
Geological and Water Survey
Environmental Services Division
Iowa Department of Natural Resources

Memo Date July 27, 2011

Obligation	Task Milestone Date
<p>Task 1: Project Oversight</p> <p>Description: The contractor shall provide staff members qualified to conduct project activities on a total of eight unique community water supplies.</p> <p>Deliverables:</p> <ol style="list-style-type: none"> 1. Staff member name(s) conducting all Source Water task activities. 2. A certificate of insurance, which indicates coverage and notice provisions as required by this contract. <p>DNR responsibility: The DNR shall approve or modify the list of staff members</p>	<p>No later than September 19, 2011</p> <p>No later than 2 business days after receipt.</p>
<p>Task 2: Pre-Planning</p> <p>Description:</p> <ul style="list-style-type: none"> • Before starting each Source Water Protection plan, the contractor shall work with the Iowa DNR to ensure: <ul style="list-style-type: none"> ○ that, for the selected communities, each community water supply has the most accurate source water area, wells, and contaminant sources included in the source water assessment. ○ Each community water supply has the most recent sanitary survey for each of the communities. ○ The contractor shall inform the Iowa DNR of the selected eight community water systems. The selected community water systems must be approved by the Iowa DNR before starting Source Water planning. Communities that have completed a Source Water Plan in the past five years are not eligible. ○ The contractor shall attend the GIS/Source Water Training Seminar, held in conjunction with the Iowa Groundwater Association fall meeting in Iowa City, October 26, 2011. <p>Deliverables: 1) List of a minimum of eight community water systems contractor will work with 2) Accurate Phase 1 assessment for each system; 3) most recent Iowa DNR Sanitary Survey for each system. (4) List shall be presented to DNR electronically and in hardcopy.</p> <p>DNR responsibility: The DNR shall approve or modify the list of communities.</p>	<p>No later than November 30, 2011</p> <p>No later than 2 business days after receipt</p>
<p>Task 3: Monthly status report and meeting with Chad Fields, Source Water Coordinator for Non-Targeted Systems at the Iowa DNR-Geologic and Water Survey offices in Trowbridge Hall, Iowa City.</p> <p>Description: The meeting date and time to be decided by the Source Water Coordinator. If meeting is cancelled, written or electronic communication between the SWP coordinator and detailing the reasons for the meeting cancelation must take place beforehand.</p> <p>Deliverables: 1) Minimum once per month meetings with the Source Water Protection Coordinator. 2) A monthly status report detailing the seven Source Water Protection steps on each of the eight communities. (3) Report shall be presented to DNR electronically and in hardcopy.</p> <p>Report shall include:</p> <ul style="list-style-type: none"> • Itemization of all eight selected communities and progress report on the seven source water protection steps. • All past meetings/conferences with selected communities. • Major accomplishments. • Source Water Advisory Group submittal and approval. 	<p>Continuous, every month for the duration of the contract.</p>
<p>Task 4: Completed Source Water Protection Plans for eight selected communities.</p> <p>Description: For each of the eight selected community water supplies, the contractor shall complete a source water plan that includes all of the following seven steps. Further details describing each of the steps are in the Iowa Source Water Guidebook (Attachment 6), and Workbook (Attachment 7).</p> <p>Step 1: Organize a source water team</p> <p>Step 2: Identify source water areas</p> <p>Step 3: Inventory well and contaminant sources</p> <p>Step 4: Assess and rank contaminant sources</p> <p>Step 5: Develop an action plan</p> <p>Step 6: Construct or update the community's emergency response plan</p> <p>Step 7: Submit SWP Plan to the Source Water Advisory Group</p> <p>Deliverables: (1) Minimum of eight completed Source Water Protection plans that follow each of the above steps. (2) Each plan shall be presented to DNR electronically and in hardcopy.</p>	<p>No later than September 18, 2012</p>
<p>Task 5: Presentation of each community's Source Water Protection Plan to the Source Water Advisory Group.</p> <p>Description: After completion of each community's Source Water Protection plan, the contractor shall present each Plan to the Source Water Advisory Group listed in the SWP workbook, Attachment 7, at one of their meetings. To determine the meeting date contact Chad Fields (chad.fields@dnr.iowa.gov). The contractor's presentation shall highlight each of the seven steps required for plan approval in Iowa, including an in-depth review of the action plan and ranking of potential contaminant sources.</p> <p>Deliverables: (1) Minimum of eight PowerPoint presentations highlighting each selected community's Source Water Protection plan, outlining all seven of the essential steps. (2) Presentation shall be presented to DNR electronically and in hardcopy.</p>	<p>No later than September 18, 2012</p>

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

ITEM

15

DECISION

TOPIC

Referrals to the Attorney General

The Director requests the referral of the following to the Attorney General for appropriate legal action. Litigation reports have been provided to the commissioners and are confidential pursuant to Iowa Code section 22.7(4). The parties have been informed of this action and may appear to discuss this matter. If the Commission needs to discuss strategy with counsel on any matter where the disclosure of matters discussed would be likely to prejudice or disadvantage its position in litigation, the Commission may go into closed session pursuant to Iowa Code section 21.5(1)(c).

- William Schmidt and Rockingham-Lunex Co. (Scott County) – Air Quality / Solid Waste

Edmund J. Tormey, Chief
Legal Services Bureau

July 26, 2011

LITIGATION REPORT for WILLIAM SCHMIDT and
ROCKINGHAM-LUNEX CO.
August 2011 EPC Meeting

LITIGATION REPORT

Prepared by: Kelli Book
Date: July 27, 2011

I. Summary

The DNR seeks referral of William Schmidt and Rockingham-Lunex Co. (Rockingham) to the Attorney General's Office for appropriate enforcement action, due to asbestos National Emission Standards for Hazardous Air Pollutants (NESHAP) violations, open burning violations, and improper disposal of solid waste violations in connection with demolition of buildings, open burning, and improper disposal at the Rockingham property located at 7551 State Street in an unincorporated area of Bettendorf, Iowa. This referral includes the following violations: failure to conduct a thorough asbestos inspection, failure to submit a notification of demolition to the DNR, failure to remove all regulated asbestos containing material prior to demolition, failure to keep all regulated asbestos containing material adequately wet; failure to have a trained supervisor on site during the demolition, open burning, and improper disposal of solid waste.

II. Alleged Violator

William Schmidt
Rockingham-Lunex Co.
PO Box B
Pleasant Valley, Iowa 52767

III. Description of Facility

The Rockingham property is located at 7551 State Street in an unincorporated area of Bettendorf, Iowa. The Scott County Assessor's Office indicates that the owner of the property is Rockingham Machine Co. Rockingham was formerly known as Rockingham Machine Co. The property is a former manufacturing facility with 8.397 acres. As of September 1, 2011, Rockingham ceased operations. The property is currently vacant with the exception of some buildings and outdoor areas that are rented to other businesses. Rockingham owns the buildings and property where the violations occurred and Mr. Schmidt is the president of Rockingham and admitted to demolishing Buildings 15 and 19 and starting Building 19 on fire.

LITIGATION REPORT for WILLIAM SCHMIDT and
ROCKINGHAM-LUNEX CO.
August 2011 EPC Meeting

IV. Alleged Violations (including facts and applicable law)

Asbestos is a known cause of lung disease, asbestosis, and cancer, specifically mesothelioma. Asbestos is a hazardous air pollutant. Failure to follow proper removal and disposal techniques of the regulated asbestos containing material creates an environmental hazard to the workers and general public through the likely release of asbestos fibers. Proper removal and disposal of asbestos containing material is required pursuant to the Clean Air Act's asbestos NESHAP regulations. Open burning of solid waste results in the release of large amounts of particulates, carbon monoxide, and hydrocarbons. Such open burning may violate ambient air standards. Open burning releases toxins which pollute the air, may pollute groundwater, and pose a risk to human health and the environment. Improper disposal of solid waste creates nuisance conditions for surrounding property owners and the potential contamination of soil and groundwater. Violations of the asbestos, open burning, and solid waste regulations threaten the integrity of the air quality and solid waste regulatory programs.

A. FACTS

On March 29, 2011, DNR Field Office 6 received a complaint regarding open burning at the Rockingham property. The complaint stated that open burning was occurring at night.

On March 31, 2011, Jon Ryk, DNR Field Office 6 environmental specialist, investigated the complaint. Upon his arrival at the Rockingham property, Mr. Ryk observed burning occurring at the south end of the property. There was a large pile of demolition waste on fire. The demolition waste included wood, fiberglass insulation, asphalt shingles, metal debris, and other building materials. In addition to the demolition waste there was also some landscape waste included in the burn pile.

Mr. Ryk then communicated with a Rockingham employee. The employee informed Mr. Ryk that the property owner was William Schmidt and provided Mr. Schmidt's telephone number. The employee informed Mr. Ryk that the adjacent business owner, Sean Terrell, and a renter of a portion of the property had been involved in the burning.

Mr. Ryk spoke to William Schmidt and Sean Terrell on the telephone and both stated they would meet him at the property. Mr. Ryk first met with Mr. Terrell. Mr. Terrell explained that he rented some of the buildings on the northeast portion of the property and some open area where mulch is stored. Mr. Terrell stated that there was a building on the southwest portion of the property (Building 19) that had caved in and that he helped Mr. Schmidt take the building down and move it to the south end of the property. Mr. Terrell stated the

**LITIGATION REPORT for WILLIAM SCHMIDT and
ROCKINGHAM-LUNEX CO.
August 2011 EPC Meeting**

building was approximately 126 feet by 45 feet. It was later confirmed that the building was 4,624 square feet. He did not know if an asbestos inspection had occurred prior to the demolition and burning. Mr. Terrell stated that he did not start the fire but that he did add some demolition debris to the pile. He added that some of the debris in the pile may have also been added by others.

Mr. Ryk collected a sample of suspect material from the area where Building 19 had been. The sample was part of a rock wall (a form of cement wall board) and similar debris was scattered around the building footprint leading to the burn pile. The sample result indicated that the material contained 30% Chrysotile asbestos.

Mr. Ryk then met with Mr. Schmidt. He stated that the Building 19 was a wood frame building that had deteriorated last winter and that he and Mr. Terrell demolished the building and moved it to the burn site. He confirmed that no asbestos inspection had occurred and no notification was submitted prior to the demolition. Mr. Schmidt stated that he started the fire on March 29, 2011. He stated that asphalt shingles were burned, but that no tires were burned. Mr. Schmidt also indicated that he collapsed the walls of another building on the northeast portion of the property (Building 15) and the demolition debris had not been burned and most of the debris remained on the ground under the roof of the structure. Mr. Schmidt indicated that some of the debris from Building 15 was disposed of in an 8 cubic yard dumpster on the property.

On April 7, 2011, Mr. Ryk contacted Mr. Schmidt regarding Building 15. Mr. Schmidt was informed that unless the debris could be tested that all the material would have to be disposed of as regulated asbestos containing material. It was later confirmed that the building was 20 feet by 70 feet.

On April 7, 2011, DNR issued a Notice of Violation letter to Mr. Schmidt and Rockingham. The letter included the asbestos and open burning violations discovered by Mr. Ryk on March 29, 2011. The letter required that Mr. Schmidt and Rockingham employ a licensed asbestos abatement contractor to remove the burned and unburned demolition debris associated with the two demolished structures and dispose of the material as regulated asbestos containing material. This was to be done by May 20, 2011. (The deadline was later extended to June 30, 2011). The letter also informed Mr. Schmidt that the matter was being referred for further enforcement that could include the requirement to clean up the site and a monetary penalty up to \$10,000.

On May 12, 2011, DNR notified Mr. Schmidt and Rockingham that the DNR would be requesting referral of this matter to the Attorney General's Office. On May 31, 2011, DNR's attorney spoke to Rockingham's attorney and explained the referral process. It was explained that the matter was being referred because it appeared that the penalty, including economic benefit exceeded \$10,000.

LITIGATION REPORT for WILLIAM SCHMIDT and
ROCKINGHAM-LUNEX CO.
August 2011 EPC Meeting

Rockingham's attorney was given until June 20, 2011 to submit information to the DNR regarding the economic benefit. On July 26, 2011, DNR received a letter from the attorney that provided information regarding potential cleanup costs.

On June 30, 2011, Mr. Ryk met with Mr. Schmidt's contractor and observed that the demolition debris had been removed from the Building 19 footprint, the debris pile, the area between Building 19 and the burn pile, and the Building 15 footprint. The invoices from the contractor were received by DNR Field Office 6 on July 25, 2011. The invoices indicated that 180 cubic yards of demolition debris was disposed of.

B. APPLICABLE LAW

Iowa Code section 455B.133 provides for the Environmental Protection Commission (Commission) to establish rules governing the quality of air and emission standards. Pursuant to Iowa Code section 455B.133, 567 Iowa Administrative Code (IAC) section 23.1(3) was established, which adopts by reference the federal regulations regarding asbestos removal. The United States Environmental Protection Agency has delegated to the State of Iowa the authority to implement and enforce the demolition and renovation portions of the federal asbestos NESHAP, found at 40 CFR part 61, subpart M.

40 CFR section 61.145(a) specifies that the owner or operator of a demolition or renovation activity shall thoroughly inspect a regulated facility for the presence of asbestos prior to the commencement of demolition or renovation. The DNR has no evidence that an asbestos inspection was ever completed prior to the demolition of the two structures at Rockingham's property and Mr. Schmidt confirmed that the inspections had not occurred. The above facts indicate violations of this provision.

40 CFR section 61.145(b)(1) requires written notification of demolition to be submitted to the DNR prior to beginning renovation. The specific requirements for this notification are contained in the subsection. The DNR has no evidence that a notification was ever submitted prior to the demolition of the two structures at Rockingham's property. The above facts indicate violations of this provision.

40 CFR section 61.145(c) details the procedures for asbestos emission control and states that each owner or operator to whom the provisions apply shall comply with the procedures. The facts in this case indicate that Mr. Schmidt and Rockingham were not in compliance with these provisions when the demolition occurred.

40 CFR 61.145(c)(1) provides that all regulated asbestos containing material shall be removed from a regulated facility before any activity begins that would

LITIGATION REPORT for WILLIAM SCHMIDT and
ROCKINGHAM-LUNEX CO.
August 2011 EPC Meeting

break up, dislodge, or similarly disturb the material or preclude access to the material for subsequent removal. During Mr. Ryk's inspection he observed dry broken asbestos containing material in the footprint of Building 19 that had been demolished. The facts in this case indicate violations of this provision.

40 CFR 61.145(c)(6)(i) provides that all regulated asbestos containing material, including material that has been removed or stripped, shall be adequately wet and shall remain wet until collected and contained. During Mr. Ryk's inspection he observed dry broken asbestos containing material in the footprint of Building 19 that had been demolished. The facts in this case indicate violations of this provision.

40 CFR 61.145(c)(8) provides that effective one year after promulgation of this regulation, no regulated asbestos containing material shall be stripped, removed, or otherwise handled or disturbed at a facility regulated by this section unless at least one on-site representative, such as a foreman or management level person or other authorized representative, trained in the provisions of this regulation and the means of complying with them, is present. The facts in this case indicate there was not a trained supervisor on site during the demolition of the building. The above facts indicate noncompliance with this provision.

Iowa Code section 455B.133 provides that the Commission shall establish rules governing the quality of air and emission standards. The Commission has adopted 567 IAC chapters 20-35 relating to air quality.

567 IAC 23.2(1) prohibits any person from allowing, causing, or permitting open burning of combustible materials, except as provided in 23.2(2) (variances) and 23.2(3) (exemptions). During DNR Field Office 6's inspection, Mr. Ryk observed the open burning of demolition debris. Mr. Schmidt admitted that he demolished the building, transported the debris to the pile, and started the fire. The above facts demonstrate noncompliance with this provision.

Iowa Code section 455B.304 provides that the Commission shall establish rules governing the handling and disposal of solid waste. The Commission has adopted such rules at 567 IAC chapters 100-123.

567 IAC 100.4 prohibits a private or public agency from dumping or depositing or allowing the dumping or depositing of any solid waste at any place other than a sanitary disposal project approved by the Director. During DNR Field Office 6's inspection, Mr. Ryk observed the open burning of demolition debris. The demolition debris was burned rather than being disposed of at an approved landfill. In addition, Mr. Schmidt stated that he had demolished a second building and that the debris was being stored on site rather than being disposed of at an approved landfill. The above facts demonstrate noncompliance with this provision.

LITIGATION REPORT for WILLIAM SCHMIDT and
ROCKINGHAM-LUNEX CO.
August 2011 EPC Meeting

V. Past History

Rockingham and Mr. Schmidt have a history of past environmental violations. On December 8, 2009, Rockingham and Mr. Schmidt were issued a Notice of Violation letter for failing to maintain the proper air quality records at the facility. On November 13, 2011, Rockingham and Mr. Schmidt were issued a Notice of Violation letter for failing to apply for an air quality voluntary operating permit. On October 23, 1989, Rockingham was issued a Notice of Violation letter for failing to obtain an air quality construction permit prior to construction.

On January 18, 2002, Rockingham and Mr. Schmidt were convicted in Federal District Court for the discharge of pollutants without a permit. On August 5, 2003, Rockingham was issued a Notice of Violation for effluent limit violations. On April 12, 2005, Rockingham was issued a Notice of Violation letter for failing to timely submit monthly operating reports and failure to report all permitted parameters. On March 6, 2007, Rockingham was issued a Notice of Violation letter for failing to timely submit monthly operating reports and for effluent limit violations. On November 16, 2009, Rockingham was issued a Notice of Violation letter for failing to timely submit monthly operating reports and for failing to report all permitted parameters. On March 19, 2010, Rockingham was issued a Notice of Violation letter for failing to timely submit monthly operating reports and for failing to report all permitted parameters. In September 2010, DNR and Rockingham entered into an administrative consent order to resolve the above-mentioned wastewater violations.

VI. Witnesses

Jon Ryk will be available during the EPC meeting to answer additional questions.

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

ITEM

16

DECISION

TOPIC Commission Schedule

The department has received a request to move the September EPC tour and meeting in Humboldt County to October and host the September meeting in Des Moines. The Iowa Association of Business and Industry along with the Iowa Department of Economic Development is hosting the annual Iowa Environmental Conference on September 20th. ABI and IDED would like to extend an invitation to commissioners to attend the 9:15-10:15 a.m. Keynote Speaker, Karl Brooks, Administrator of EPA Region 7.

The commission is asked to review and vote on changing the EPC tour and meeting schedule to host only a business meeting September 20th in Des Moines and a tour October 17th and business meeting October 18th in Humboldt County or other modifications as the commission sees fit.

Jerah Sheets
Environmental Services Division

**DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION COMMISSION
ATTORNEY GENERAL REFERRALS
July/August, 2011**

Name, Location and Region Number	Program	Alleged Violation	DNR Action	New or Updated Status	Date
Affordable Housing Network, Inc. Cedar Rapids (1)	Air Quality	Asbestos -	Referred to Attorney General	Referred	3/15/11
Bachman, Lane Lake City (3)	Animal Feeding Operation	Failure to Update Plan	Order/Penalty	Referred Petition Filed Trial Date	8/17/10 12/23/10 10/28/11
Branstad, Monroe Hancock Co. (2)	Animal Feeding Operation		Referred to Attorney General	Referred	7/20/10
Callaway Farms, Inc.; Eugene Callaway; Blake Callaway, Sr. Radcliffe (2)	Animal Feeding Operation	Prohibited Discharge	Referred to Attorney General	Referred Petition Filed	4/20/10 12/30/10
Chamness Technology, Inc. Eddyville (6)	Solid Waste	Unauthorized Discharge	Referred to Attorney General	Referred	11/16/10
General Development LC Palo Alto Co. (3) UPDATED	Animal Feeding Operation	Failure to Submit Update, Fees	Referred to Attorney General	Referred Petition Filed State's Resistance to Jury Demand Defendant's Reply to Resistance State's Brief in Resistance Hearing on Jury Demand Ruling Denying Jury Demand Trial Date Defendant's Motion for Summary Judgment	8/18/09 2/03/10 6/25/10 7/12/10 7/19/10 9/10/10 11/19/10 9/14/11 7/14/11
Grain Processing Corporation Muscatine (6)	Air Quality Wastewater	Operation Without (PSD) Permit; Emission Standards – Particulate; Failure to Comply - MON; Construction Without WW Permit	Referred to Attorney General	Referred	4/19/11
Haverhals, Peter; Haverhals Farms, Inc. Hawarden (3)	Animal Feeding Operation	Prohibited Discharge – Open Feedlot; Water Quality Violations – General Criteria	Referred to Attorney General	Referred	8/17/10

**DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION COMMISSION
ATTORNEY GENERAL REFERRALS
July/August, 2011**

Name, Location and Region Number	Program	Alleged Violation	DNR Action	New or Updated Status	Date
Iowa Farm Bureau Federation et. al. Polk Co. (5)	Wastewater	Judicial Review of Antidegradation Rules	Attorney General	Petition Filed	10/04/10
				State's Answer	10/27/10
				Motion to Intervene by Sierra Club	11/03/10
				Motion to Intervene by Iowa Environmental Council and Environmental Law & Policy Center	12/15/10
				Hearing on Intervention	1/20/11
				Ruling Granting Intervention	2/03/11
				State's Motion for Summary Judgment; Undisputed Facts; Affidavits; Appendix and Memorandum	4/29/11
K & L Landscape & Construction, Inc. Pottawattamie Co. (4)	Solid Waste; Hazardous Condition	Illegal Disposal; Failure to Notify	Referred to Attorney General	Referred	2/16/10
				Petition Filed	10/13/10
				Trial Date	10/11/11
				Order Granting Intervention by Harvey's Iowa	4/18/11
Klyn, Edward Dale Corydon (5)	Animal Feeding Operation	Prohibited Discharge – Open Feedlot	Order/Penalty	Referred Petition Filed	2/16/10 1/10/11
Knudsen, Anders St. Ansgar (2)	UPDATED Animal Feeding Operation	Prohibited Discharge	Referred to Attorney General	Referred	4/20/10
				Criminal Charges Filed	9/27/10
				Guilty Plea - Negligent Disposal of Pollutant	5/24/11
				Sentence - \$10,000 Fish Restitution; \$315 Fine	5/24/11
Kollasch Land and Livestock, Inc. Whittemore (2) (3)	UPDATED Animal Feeding Operation	Failure to Submit Update, Fees	Referred to Attorney General	Referred	8/18/09
				Petition Filed	2/03/10
				State's Resistance to Jury Demand	6//25/10
				Defendant's Reply to Resistance	7/12/10
				State's Brief in Resistance	7/19/10
				Hearing on Jury Demand	9/10/10
				Ruling Denying Jury Demand	11/19/10
				Trial Date	9/14/11
Defendant's Motion for Summary Judgment	7/14/11				
Passehl, Jerry Latimer (2)	Solid Waste; Wastewater; Hazardous Condition	Illegal Disposal; Operation Without Permit; Pollution Prevention Plan Violations; Failure to Notify	Order/Penalty	Referred	3/16/10
				Petition Filed	12/27/10
				Trial Date	12/15/11

**DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION COMMISSION
ATTORNEY GENERAL REFERRALS
July/August, 2011**

Name, Location and Region Number	Program	Alleged Violation	DNR Action	New or Updated Status	Date
Pieper, Inc.; Mike Pieper Lee Co. (6) UPDATED	Animal Feeding Operation	Prohibited Discharge; Water Quality Violations – General Criteria; Improper Land Application; Uncertified Applicators	Referred to Attorney General	Referred Petition Filed State’s Resistance to Jury Demand Defendant’s Reply to Resistance Hearing on Jury Demand Order Granting Jury Demand Ruling Granting Jury Demand Trial Date State’s Motion for Summary Judgment Statement of Undisputed Facts; Affidavits, Appendix and Memorandum of Authorities Defendant’s Motion for Summary Judgment Statement of Undisputed Facts; Memorandum of Authorities State’s Cross-Motion for Summary Judgment Statement of Undisputed Facts; Affidavits, Appendix and Memorandum of Authorities	8/18/09 5/17/10 6/08/10 6/14/10 7/27/10 7/27/10 8/06/10 8/08/11 6/08/11 6/08/11 6/24/11
Renken, Rick LeMars (3)	Animal Feeding Operation	Failure to Update Plan	Order/Penalty	Referred Petition Filed	4/20/10 1/07/11
Sebergan Pigs, Inc. West Point (6)	Animal Feeding Operation	Failure to Update Plan; Recordkeeping; Prohibited Discharge – Confinement; General Criteria	Referred to Attorney General	Referred Petition Filed	3/16/10 12/30/10
Sharkey, Dennis Dubuque Co. (1)	Air Quality Solid Waste	Open Burning; Illegal Disposal	Referred to Attorney General	Referred Petition Filed Defendant’s Jury Demand State’s Resistance to Jury Demand Amendment Resistance to Jury Demand Ruling Denying Jury Demand Trial Date	4/03/07 9/20/07 9/13/10 9/20/10 10/04/10 11/19/10 5/24/11
Sioux Pharm, Inc. Sioux County (3) UPDATED	Wastewater	Operational Violations	Referred to Attorney General	Referred Petition Filed Consent Decree (\$20,000/Civil; Injunction; Order to Close Lagoon)	3/11/08 3/09/09 7/11/11
Ward, Randy Iowa City (6) UPDATED	Air Quality	Asbestos	Referred to Attorney General	Referred Criminal Charges Filed Guilty Plea to Count 1 Order (\$220,000/civil; \$40,000 to Environmental Crimes Investigation and Prosecution Fund; Deferred Judgment With 2 Years Probation)	8/18/09 12/28/10 6/22/11 6/22/11

**DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION COMMISSION
ATTORNEY GENERAL REFERRALS
July/August, 2011**

Name, Location and Region Number	Program	Alleged Violation	DNR Action	New or Updated Status	Date
Yentes, Clifford Council Bluffs (4)	Solid Waste	Illegal Disposal	Referred to Attorney General	Referred	4/03/07
				Petition Filed	9/21/07
				Contempt Application Filed	9/21/07
				Contempt Hearing	11/05/07
				Ruling on Contempt Application	11/29/07
				(90 days jail suspended/\$500 fine)	2/18/08
				Compliance Hearing	4/27/08
				Compliance Hearing	5/28/08
				Compliance Hearing Date	6/30/08
				Compliance Hearing	8/04/08
				Compliance Hearing Date	9/08/08
				Compliance Hearing Date	12/05/08
				Trial Date	8/16/11

**DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION COMMISSION
CONTESTED CASES
July/August, 2011**

DATE RECEIVED	NAME OF CASE	F.O.	ACTION APPEALED	PROGRAM	ASSIGNED TO	STATUS
11/27/01	Dallas County Care Facility	5	Order/Penalty	WW	Hansen	10/03 – Letter to County attorney regarding appeal resolution. 1/04 – Letter to attorney regarding appeal. 4/04 – Dept. letter to attorney regarding appeal. 9/04 – Dept. letter to attorney regarding appeal. 6/26/07 – Appeal resolved. Facility connected to City WWTF. Consent order to be issued.
4/08/04	Silver Creek Feeders	4	Permit Conditions	AFO	Clark	2/9/11 – Met with Silver Creek’s attorney. Agreed have a meeting with Silver Creek officials, DNR staff and attorneys.
9/25/07	Winneshiek County Conservation Board (Kendallville Park)	1	Permit Revision	WS	Hansen	6/2011- Settlement offer to close out appeal.
7/22/08	Nichols Aluminum	6	Permit Conditions	AQ	Preziosi	Settlement discussions ongoing. Last communication 8/28/10. Last communication 11/24/10.
10/01/08	Green Brier Subdivision	1	Permit Conditions	WS	Hansen	6/2011- Settlement offer to close out appeal.
10/15/08	SSAB Iowa Inc.	6	Permit Conditions	AQ	Preziosi	Settlement discussions ongoing. Last discussion 4/14/11.
11/15/08	SSAB Iowa Inc.	6	Permit Conditions	AQ	Preziosi	Settlement discussions ongoing. Last discussion 4/14/11.
1/05/09	River Highlands Homeowner’s Association	6	Order/Penalty	WS	Hansen	10/09- WS in partial compliance with order after repair to well in 9/09. 5/11 – Now in compliance with order. Settlement offer to River Highlands. 6/2011- Response received from River Highlands.
5/29/09	Exide Technologies	1	NPDES Permit	WW	Tack	Negotiating before filing.
6/29/09	ADM (Permit 09-A-170-P)	6	Permit Condition	AQ	Preziosi	Negotiating before filing.
8/17/09	Phoenix C & D Recycling, Inc.	5	Permit Revocation	SW	Tack	Proposed Decision issued 5/21/2010. DNR permit revocation upheld. EPC appeal pending.
9/29/09	Iowa Acquisitions, LLC	2	Order/Penalty	SW	Tack	Clean-up underway.
10/29/09	Harlan Rudd; Karen Rudd; dba Rudd Brothers Tires	6	Order/Penalty	UT	Brees	Informal negotiation. CADR was submitted, partially rejected with options. Settlement letter sent 2/24/10.
12/02/09	Table Mound MHP	1	Order/Penalty	WW	Hansen	Negotiating before filing.

* These cases were previously assigned to Mike Murphy.

**DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION COMMISSION
CONTESTED CASES
July/August, 2011**

DATE RECEIVED	NAME OF CASE	F.O.	ACTION APPEALED	PROGRAM	ASSIGNED TO	STATUS
12/16/09	Guy Thomas	4	Order/Penalty	UT	Brees	Oral agreement for tank removal prior to April 1, 2010. Continued negotiation on final settlement.
2/25/10	Higman Sand & Gravel Inc.	3	Order/Penalty	FP	Clark	Negotiating before filing.
3/08/10	Olson Farm, Inc.		Permit Conditions	AFO	Clark	Negotiating before filing.
3/11/10	Bondurant, City of	5	Order/Penalty	WW	Hansen	Negotiating before filing.
5/05/10	Jeff Grooms; Floris One Stop	6	Order/Penalty	UT	Mullen	New consent order issued. Appeal will be dismissed. Awaiting penalty payment.
5/25/10	CBJ Transport, LLC	2	Order/Penalty	AFO	Book	Met with company 1/13/11, negotiations continue.
6/01/10	Kyle Pattison Tire Company, LLC	1	Permit Renewal Denial	SW	Tack	Negotiating before filing.
6/24/10	Raccoon River Bible Camp	4	Variance Denial	WS	Hansen	6/2011- Letter to Raccoon River stating Department's final position; appeal to be set for hearing
8/06/10	West Kimberly MHP; Kendall and Beatrice Miller	3	Order/Penalty	WW	Hansen	Negotiating before filing.
8/31/10	Louis Dreyfus Commodities	4	Permit Conditions	AQ	Preziosi	Negotiating before filing.
9/29/10	Bryant's Mobile Home Park	6	Order/Penalty	WW	Hansen	03/11 - Permit application received from MHP. 06/2011- Permit application fee received by NPDES Permits. NPDES permit renewal being processed.
9/30/10	Ames, City of	5	Permit Conditions	WW	Tack	Hearing continued. Negotiations underway.
10/15/10	Helen and Virgil Homer dba Grandmas Snack Shop; Preston White	2	Order/Penalty	WS	Hansen	6/24/2011- Letter sent to Grandmas regarding use of existing private well as alternate water source.
11/3/2010	Wendall Abkes	2	Order/Penalty	SW	Schoenebaum	Negotiating before filing.
11/5/2010	Flying Eagle, Inc. Will R. Ibeling	2	Order/Penalty	AFO	Schoenebaum	Hearing held 2/22/11. Decision received 5/16/11. Order affirmed and modified penalty to \$4,800. Decision appealed to EPC.

* These cases were previously assigned to Mike Murphy.

**DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION COMMISSION
CONTESTED CASES
July/August, 2011**

DATE RECEIVED	NAME OF CASE	F.O.	ACTION APPEALED	PROGRAM	ASSIGNED TO	STATUS
11/12/10	Twin Valley Lakes Improvement Association	6	Permit Revisions	WS	Hansen	6/2011 - Settlement offer by Department.
12/14/10	Chickasaw County Conservation Board; Twin Ponds West	1	Permit Appeal	WS	Hansen	6/2011- Settlement offer by Department.
12/28/10	Oak Grove Church	1	Permit Conditions	WS	Hansen	Negotiating before filing. 6/2011- Settlement offer to be made before setting for hearing.
12/29/10	Griffin Pipe Products Co., Inc.	4	Permit Conditions	AQ	Preziosi	Negotiating before filing.
1/17/11	Oakwood Park Water Service	5	Permit Conditions	WW	Hansen	Negotiating before filing. 6/28/2011- Letter to Oakwood Park asking for more information.
1/31/11	Griffin Pipe products Co., Inc.	4	Tax Certification Request	AQ	Preziosi	Negotiating before filing.
2/15/11	June Oyer; Parsons Diehl, LLC; Plantation Village MHP	6	Order/Penalty	WW	Hansen	Negotiating before filing.
2/28/11	Manson, City of	3	Order/Penalty	WS	Hansen	4/1/11 – Settlement conference held with City. 6/22/11- Settlement offer received from City attorney. 6/28/11- More information requested from City attorney concerning the settlement proposal.
3/03/11	Keith Durand		Order/Penalty	WW	Tack	To be set for hearing.
5/02/11	Iowa Limestone Company	2	Order/Penalty	AQ	Preziosi	Negotiating before filing.
5/09/11	S & R One, Inc.	6	Order/Penalty	UT	Brees	Negotiating before filing.
6/03/11	Prairie View Estates Homeowners Assoc.	6	Permit Conditions	WS	Hansen	6/2011- Settlement offer by Department.
6/23/11	Vernon Water Company		Permit	WS	Hansen	New case. Negotiating before filing.
7/20/11	Shane Rechkemmer	1	Order/Penalty	SW	Book	Negotiating before filing.
7/20/11	Kenneth W. Less	3	Order/Penalty	AFO	Book	To be set for hearing.

* These cases were previously assigned to Mike Murphy.

DATE: July/August, 2011

TO: EPC

FROM: Ed Tormey

RE: Enforcement Report Update

The following new enforcement actions were taken during this reporting period:

Name, Location and Field Office Number	Program	Alleged Violation	Action	Date
David C. Kuhlemeier Cerro Gordo Co. (2)	Air Quality Solid Waste	Open Burning; Illegal Disposal	Order/Penalty \$2,000	5/31/11
Regency of Iowa, Inc. Johnson Co. (5)	Drinking Water	Compliance Schedule; MCL – Other; Operational Violations	Consent Order \$7,000	6/9/11
Iowa Select Farms, LLP Hines and Pogge Facilities Hamilton Co.; Wright Co. (2)	Animal Feeding Operation	Construction Without Permit	Consent Order \$7,000	6/9/11
SCS Flooring Co. Homestead (6)	Air Quality	Open Burning	Consent Order \$1,500	6/9/11
Darla K. Truman; George O. Ackerson; William J. Foreman Warren Co. (5)	Solid Waste	Illegal Disposal	Order/Penalty \$3,000	6/20/11
Ken Less Plymouth Co. (3)	Animal Feeding Operation	Failure to Update Plan	Order/Penalty \$3,000	6/20/11
Winding Creek Coop Lyon Co. (3)	Animal Feeding Operation	Uncertified Applicator	Consent Order \$1,500	6/20/11
Allen Hoeper Bremer Co. (1)	Animal Feeding Operation	Failure to Submit Plan	Consent Order \$2,500	6/20/11
Phillip Hooyer dba Natural Fertilizer Co. Sioux Co. (3)	Animal Feeding Operation	Uncertified Applicator	Consent Order \$4,500	6/21/11
Lagoon Pumping & Dredging Crawford Co. (4)	Animal Feeding Operation	Water Quality Violations – General Criteria	Consent Order \$3,000	7/07/11
Godbersen-Smith Construction Audubon Co. (4)	Air Quality Solid Waste	Open Burning; Illegal Disposal	Consent Order \$1,000	7/14/11
Gary Elsbernd Winneshiek Co. (1)	Animal Feeding Operation	Prohibited Discharge – Confinement; Water Quality Violations – General Criteria	Consent Order \$1,500	7/19/11

IOWA DEPARTMENT OF NATURAL RESOURCES
 ENVIRONMENTAL PROTECTION COMMISSION
 RULEMAKING STATUS REPORT
 July/August, 2011

PROPOSAL	SENT FOR GOVERNOR'S PRE-APPROVAL (JOB IMPACT STATEMENT)	NOTICE TO EPC	NOTICE PUBLISHED	ARC#	ARRC MTG.	HEARING	COMMENT PERIOD	FINAL SUMMARY TO EPC	RULES ADOPTED	RULES PUBLISHED	ARC#	ARRC MTG.	RULE EFFECTIVE
1. Ch. 20, 22, 25 and 33 – AQ PSD PM 2.5 Rulemaking	7/06/11	*9/20/11	*10/19/11		*11/08/11			*12/20/11	*12/20/11	*1/11/12		*2/07/12	*2/15/12
2. Ch. 22, 33 – Biogenic emissions of CO2	7/19/11 7/21/11	8/16/11	*9/07/11		*10/04/11			*11/15/11	*11/15/11	*12/14/11		*1/03/12	*1/18/12
3. Ch. 22 – AQ Title V Fee Cap		1/18/11	2/09/11	9366B	3/11/11	3/11/11	3/11/11	*8/16/11	*8/16/11	*9/07/11		*10/04/11	*10/12/11
4. Ch. 40-43, 83 -- Drinking Water and Laboratory Certification Programs	7/7/11 7/19/11	8/16/11	*9/07/11		*10/04/11	*9/28/11	*9/29/11	*11/15/11	*11/15/11	*12/14/11		*1/03/12	*1/18/12
5. Ch. 48 – NEW – GHEX Closed Loop, Ground Heat Exchangers; Ch. 38; Ch. 39; Ch. 49; Ch. 82		2/15/11	3/09/11	9425B	*4/05/11	4/4-7, 11, 12/11	4/12/11	*8/16/11	*8/16/11	*9/07/11		*10/04/11	*10/12/11
6. Ch. 61 – Nutrient WQ Standards for Lakes to Support Recreational Use		1/18/11	2/23/11	9371B	3/11/11	3/23/11	3/15/11	*8/16/11	*8/16/11	*9/07/11		*10/04/11	*10/12/11
7. Ch. 64 – WW Construction and Operation Permits		1/18/11	2/09/11	9364B	3/11/11	3/08/11	3/16/11	5/17/11	5/17/11	6/15/11	9553B	7/12/11	7/20/11
8. Ch. 65 – Animal Feeding Operations; Confinement NPDES		11/16/10	12/15/10	9274B	1/04/11	1/04-06, 10, 11/11	1/11/11	TERMINATE 6/21/11	6/21/11	7/13/11	9602B	*8/02/11	*8/17/11
9. Ch. 111 – New Chapter -- Solid Waste Environmental Management Systems	7/20/11	*9/20/11	*10/19/11		*11/08/11	*	*	*12/20/11	*12/20/11	*1/11/12		*2/07/12	*2/15/12

* Projected timeline. Due to the requirement for Governor pre-approval/job impact statement of agency rule making, we can only project the timeline for the rulemaking process. Updates will be made and timelines adjusted as the rule making process moves forward.

IOWA DEPARTMENT OF NATURAL RESOURCES
COMPLIANCE AND ENFORCEMENT BUREAU

DATE: July/August 1, 2011
 TO: Environmental Protection Commission
 FROM: Ed Tormey
 SUBJECT: Summary of Administrative Penalties

The following administrative penalties are due:

NAME/LOCATION	PROGRAM	AMOUNT	DUE DATE
Robert and Sally Shelley (Guthrie Center)	SW	1,000	3-04-91
Daryl & Karen Hollingsworth d/b/a Medora Store(Indianola)	UT	4,778	3-15-96
Greg Morton; Brenda Hornyak (Decatur Co.)	SW/AQ/WW	3,000	11-04-98
R & R Ranch (Osceola)	WW	10,000	8-30-00
James Harter (Fairfield)	WW	1,483	8-01-01
Wisconsin North dba National Petroleum, Inc. (Clinton)	UT	5,000	8-04-01
# Practical Pig Corporation (Clinton Co.)	AFO	2,000	5-26-02
Mobile World, L.C. (Camanche)	WW	2,000	5-27-02
M-F Real Estate; Fred "Butch" Levell (Carter Lake)	HC	1,701	8-18-02
Midway Oil Co.; David Requet (Davenport)	UT	5,355	9-20-02
Dale Schaffer (Union Co.)	AQ/SW	10,000	11-05-02
Midway Oil Co.; David Requet; John Bliss	UT	44,900	2-28-03
Green Valley Mobile Home Park (Mt. Pleasant)	WW	5,000	4-23-03
Midway Oil Company (West Branch)	UT	7,300	5-03-03
Midway Oil Company (Davenport)	UT	5,790	5-03-03
Albert Miller (Kalona)	AQ/SW	9,000	9-26-03
Mark Anderson (Des Moines Co.)	AQ/SW	6,188	3-22-04
Mike Messerschmidt (Martinsburg)	AQ/SW	500	4-13-04
Interchange Service Co., Inc., et.al. (Onawa)	WW	6,000	5-07-04
Iowa Falls Evangelical Free Church (Iowa Falls)	WS	750	6-13-04
Mitchell Town Pump (Mitchell)	WS	2,080	6-16-04
# Dunphy Poultry (Union Co.)	AFO	1,500	6-27-04
# Cash Brewer (Cherokee Co.)	AFO/SW	10,000	8-25-04
Spillway Supper Club (Harpers Ferry)	WS	1,500	9-06-04
# Doorenbos Poultry; Scott Doorenbos (Sioux Co.)	AFO	1,500	10-09-04
T & T Corner Bar (McIntire)	WS	3,000	10-26-04
Rock N Row Adventures (Eldora)	WS	3,000	10-23-04
# Doug Sweeney (O'Brien Co.)	AFO	375	12-21-04
Harold Linnaberry (Clinton Co.)	SW	1,000	5-18-05
# Matt Hoffman (Plymouth Co.)	AFO	750	8-08-05
# Joel McNeill (Kossuth Co.)	AFO	2,500	1 21-06
Affordable Asbestos Removal, Inc. (Monticello)	AQ	7,000	4-28-06
# Mike Elsbernd (Winneshiek Co.)	AFO	3,000	6-29-06
# Troy VanBeek (Lyon Co.)	AFO	3,500	10-16-06
Larry Bergen (Worth Co.)	AQ/SW	257	11-01-06
Mobile World, LC; R. Victor Hanks (Clinton Co.)	WW	22,500	4-01-07
James L. Heal; A-1 Imports (Homestead)	WW/SW	10,000	7-18-07
# Doug Orwig Site #1 (Dickinson Co.)	AFO	3,500	10-01-07
Mark Witt; Witt Auto Salvage (Monroe Co.)	SW/WW	8,000	1-15-08

#Animal Feeding Operation

BOLD Entries Have Been Referred to DRF

# Joshua Van Der Weide (Lyon Co.)	AFO	3,500	2-25-08
Karl Molyneux (What Cheer)	AQ/SW	960	7-19-08
Chad Hoppe; Steve Hoppe; Shady Acres MHP, (Chickasaw Co.)	WW	4,000	8-27-08
Rodney Mandernach; Mandernach Pork (Sac Co.)	AFO	4,000	10-23-08
Kevin & Candace Perry (Shelby Co.)	AQ/SW	10,000	11-07-08
George Kramer (Clinton Co.)	AQ/SW	1,500	11-09-08
Jon Knabel (Clinton Co.)	AQ/SW	2,000	12-16-08
Randy Alm (Franklin Co.)	AQ/SW	10,000	12-16-08
Great River L.C.; River Highlands Homeowners Assoc.;	WS	10,000	2-01-09
River Highlands Water System Assoc. (LeClaire)			
Stuart Yoder (Johnson Co.)	AQ/SW	224	2-11-09
# James Boller (Kalona)	AFO	5,000	2-20-09
Anthony Herman; Mighty Good Used Cars (Polk Co.)	WW	3,000	4-21-09
# Robert Fangmann (Dubuque Co.)	AFO	396	6-01-09
# Rick Renken (LeMars)	AFO	1,524	7-03-09
# Joe Klukow; RK Transport Inc. (Winnebago Co.)	AFO	5,000	7-09-09
# Brian Lill (Sioux Co.)	AFO	3,904	7-18-09
# Wesley Allender (Henry Co.)	AFO	1,500	8-22-09
# Lu-Jen Farms, Inc. (Cedar Co.)	AFO	2,000	8-22-09
Garner, City of	WW	1,500	9-28-09
# Lane Bachman (Calhoun Co.)	AFO	3,885	10-08-09
Denny Geer (New Market)	SW	9,500	10-31-09
Buff's Iris City Truck Plaza (Mt. Pleasant)	UT	2,000	10-31-09
Dunkerton Cooperative Elevator (Dunkerton)	WW/HC	6,000	11-19-09
# Roger Langreck (Fayette Co.)	AFO	1,500	12-11-09
Shrey Petroleum; Palean Oil; Profuel Three (Keokuk)	UT	10,000	3-19-10
Ellis Houk (Adams Co.)	AQ/SW	8,000	2-14-10
# Clinton Reed (Union Co.)	AQ/SW	2,100	3-12-10
Jeff Larabee; J & J Construction	AQ/SW	2,000	4-23-10
Melvin Wellik; Wellik-DeWitt Implement (Britt)	AQ/SW	2,900	4-08-10
Alchemist USA, LLC; Ravinder Singh (Malcom)	UT	8,260	5-03-10
LJ Unlimited, LLC (Franklin Co.)	AFO/AQ/SW	3,500	5-27-10
Bret Cassens; J & J Pit Stop (Columbus Junction)	UT	8,700	6-20-10
# Christopher P. Hardt (Kossuth Co.)	AFO	2,000	7-07-10
AKD Investments, LLC; H.M. Mart, Inc. (Blue Grass)	UT	6,900	8-06-10
Lake Trio Homeowner's Improvement Assn. (Washington)	WW	3,000	8-29-10
# Chris Wessels (Earlville)	AFO	3,500	11-12-10
# Blake Hershberger; Jennifer Hershberger (Washington Co.)	AFO	2,000	11-20-10
Eastern Hills Baptist Church (Council Bluffs)	WS	1,250	11-29-10
James Bailey; James Bailey Construction (Douds)	AQ/SW	3,500	12-01-10
Jeff Grooms; Floris One Stop (Floris)	UT	1,000	12-09-10
Leonard Dolezal (Cedar Rapids)	AQ/SW	2,400	12-14-10
# Joe McNeill (Kossuth Co.)	AFO	2,500	12-23-10
Gaylord Construction, Inc. (Hardin Co.)	WW	4,000	2-13-11
Gonzalez & Sons Express, Inc. (DeSoto)	WW	8,000	4-20-11
Quality Mat Co., Inc. (Waterloo)	AQ	1,500	5-20-11
Simon Fitzpatrick (Harrison Co.)	SW	10,000	6-23-11
David C. Kuhlemeier (Cerro Gordo Co.)	AQ/SW	2,000	6-30-11
# Winding Creek Coop (Lyon Co.)	AFO	1,500	7-20-11
# Lagoon Pumping & Dredging, Inc. (Crawford Co.)	AFO	3,000	8-07-11
Darla Truman; George Ackerson; William Foreman (Warren Co.)	SW	3,000	9-20-11
# Gary Elsbernd (Winneschiek Co.)	AFO	1,500	8-19-11
Elite Fuel Four; Iowa Gas Group; USA Gas Depot; Kavya Corp.; Ish Oberoi (Indianola)	UT	10,000	-----

#Animal Feeding Operation

BOLD Entries Have Been Referred to DRF

Elite Fuel Four; Iowa Gas Group; Liberty Mart; Ish Oberoi (Des Moines)	UT	10,000	-----
Elite Fuel Two; Iowa Gas Group; Ish Oberoi; Mark Kramer; M K Fueltime (New Hampton)	UT	10,000	-----
Elite Fuel Four; Iowa Gas Group; Gas Depot & Minimart; Ish Oberoi (Des Moines)	UT	10,000	-----
Elite Fuel Six; Iowa Gas Group; United Mini-Mart; Ish Oberoi (Des Moines)	UT	10,000	-----
Elite Fuel Six; Iowa Gas Group; United Gas Supply; Ish Oberoi (Des Moines)	UT	10,000	-----
Elite Fuel Six; Elite Fuel Two; Ish Oberoi (Waterloo)	UT	6,375	-----
Elite Fuel Eight; Iowa Gas Group; Sekon Brothers; Ish Oberoi (Des Moines)	UT	6,500	-----
Elite Fuel Eight; Iowa Gas Group; USA Gas Supply; Ish Oberoi (Des Moines)	UT	10,000	-----
	TOTAL	500,485	

The following penalties have been placed on payment plans:

* Reginald Parcel (Henry Co.)	AQ/SW	110	4-23-05
* Country Stores of Carroll, Ltd. (Carroll)	UT	1,408	6-06-05
* Douglas Bloomquist (Webster Co.)	AQ/SW	3,500	12-01-07
* Jack Knudson (Irwin)	UT	10,000	1-15-08
* Craig Burns (Postville)	WW	950	7-15-08
* Fred Knosby (Cumming)	AQ/SW	2,650	3-18-08
#*Richard Steen (Montgomery Co.)	AFO	1,900	2-15-10
* Jacob Nielsen (Newell)	AQ/SW	250	3-25-10
* Land Pros, LLC; Meadow Brooke (Indianola)	WW	2,000	6-30-09
* Ramona Gronbach; Thomas Gronbach	AQ/SW	2,325	11-01-10
# Jerry Passehl (Latimer)	SW/WW/HC	2,695	7-01-09
# Brad Eslick (Webster Co.)	AFO	1,667	8-30-09
# Ted Dickey dba Dickey Farms (Muscatine Co.)	AQ/SW/AFO	162	10-15-09
# Denver Dairy Farm, LLC (Bremer Co.)	AFO	2,664	3-15-10
# HDS Farms, L.L.C. (Sioux Co.)	AFO	1,500	9-01-11
# Winter Feedlots, Inc. (Plymouth Co.)	AFO	651	8-15-11
Jerry Wernimont (Carroll)	AQ/SW	1,500	4-19-10
Pomeroy Rental LLC (Pomeroy)	AQ/SW	1,600	8-15-11
Bob Wright; Wright Excavating & Bulldozing (West Branch)	AQ/SW	1,750	9-30-11
Air Advantage; ANF Air Service (Des Moines Co.)	WW	2,125	2-01-11
Randy Bachman; Bachman Tiling & Excavating (Pomeroy)	AQ/SW	1,800	8-15-11
# Kevin Montgomery (Clinton Co.)	AFO	1,000	7-10-11
James Mathes (Marion Co.)	AFO	2,250	8-15-11
4-Star Pork, LLC (Buena Vista Co.)	AFO	1,700	11-23-10
Rock Bottom Dairy; Bernie Bakker (Rock Valley)	AFO	1,500	1-01-12
Frye Property Management, LLC (Ft. Dodge)	AQ	1,875	4-15-10
Tres M, LLC (Butler Co.)	AFO	1,000	12-15-11
Pam Lehman (Decatur Co.)	SW	2,050	7-30-11
Muller Livestock, L.C.; Jon Kelly Muller (Cass Co.)	WW	3,333	10-01-11
Regency of Iowa, Inc. (Johnson/Story Cos.)	AQ	4,056	9-01-11
# Tony Mertens (Lee Co.)	AFO	3,952	2-15-11
# Gary Riesberg (Carroll Co.)	AFO	2,400	10-01-11
# Guse Family Farm Corp. (Emmet Co.)	AFO	1,500	10-15-11
# Ernest Greiner (Keokuk Co.)	AFO	500	10-10-10
Quad City Drum Recycling Co., Inc. (Davenport)	AQ	500	8-01-11

#Animal Feeding Operation

BOLD Entries Have Been Referred to DRF

TMAC Farms, LLC (Plymouth Co.)	AFO	1,411	8-01-11
Alchemist USA, LLC (Bouton)	UT	2,000	6-01-11
Stott Aerial Spray, Inc. (Jefferson)	AQ/SW	4,025	7-15-11
# J. Ward Farms, LLC; Jeff Ward (Worth Co.) (2 Orders)	AFO	3,750	8-01-11
Brian Anderson dba Northwest Ready Mix (Milford)	AQ	800	7-01-11
Brooklyn Elevator, Inc. (Poweshiek/Iowa Co.)	AQ/SW	2,000	5-01-12
# Ben McKinney (Franklin Co.)	AFO	2,000	6-16-11
	TOTAL	86,809	

The following administrative penalties have been appealed:

NAME/LOCATION	PROGRAM	AMOUNT
Dallas County Care Facility (Adel)	WW	5,000
Iowa Acquisitions, LLC (Floyd Co.)	SW	5,000
River Highlands Homeowner's Association	WS	10,000
Table Mound Park Corp.; Table Mound #1 MHP (Dubuque Co.)	WW	7,500
Guy Thomas (Council Bluffs)	UT	10,000
Harlan Rudd; Karen Rudd; Rudd Bros. Tires (Drakesville)	UT	10,000
Bondurant, City of	WW	10,000
Higman Sand and Gravel, Inc. (Plymouth Co.)	FP	10,000
# CBJ Transport, LLC (Cerro Gordo Co.)	AFO	5,000
Jeff Grooms; Floris One Stop (Floris)	UT	3,500
Kendall Miller; Beatrice Miller; West Kimberly MHP	WW	4,000
Helen and Virgil Homer; Grandmas Snack Shop; Preston White (Aredale)	WS	8,461
June Oyer; Parsons Diehl1, LLC; Plantation Village MHP	WW	2,500
Manson, City of	WS	10,000
Iowa Limestone Co. (Alden)	AQ	10,000
S & R One, Inc. (Burlington)	UT	3,690
# Flying Eagle, Inc.; Will R. Ibeling (Hardin Co.)	AFO	4,800
Lonnie Bryant; Sierra Bryant; Bryant's MHP (Keokuk)	WW	2,000
Jefferson, City of	AQ/SW	2,500
Wendall Abkes (Parkersburg)	SW	7,000
Keith Durand; Durand Construction (Lee Co.)	WW	500
# Ken Less (Plymouth Co.)	AFO	3,000
Shane Rechkemmer (Fayette Co.)	SW	1,000
	TOTAL	135,451

The following administrative penalties have been collected:

NAME/LOCATION	PROGRAM	AMOUNT
# Ted Dickey dba Dickey Farms (Muscatine Co.)	AQ/SW/AFO	700
# Rick Renken (LeMars)	AFO	248
# Ted Dickey dba Dickey Farms (Muscatine Co.)	AQ/SW/AFO	225
# Rick Renken (LeMars)	AFO	89
Active Thermal Concepts, Inc. (Linn Co.)	AQ	1,000
Regency of Iowa, Inc. (Johnson/Story Cos.)	AQ	312
TMAC Farms, LLC (Plymouth Co.)	AFO	83
# Cedar Creek Farms LLC (Sac City)	AFO	1,250
Brian Anderson dba Northwest Ready Mix (Milford)	AQ	100
# John T. Erpelding (Kossuth Co.)	AFO	1,250

#Animal Feeding Operation

BOLD Entries Have Been Referred to DRF

Randy Bachman; Bachman Tiling & Excavating (Pomeroy)	AQ/SW	200
# Winter Feedlots, Inc. (Plymouth Co.)	AFO	93
Tres M, LLC (Butler Co.)	AFO	1,000
Quad City Drum Recycling Co., Inc. (Davenport)	AQ	31
Quad City Drum Recycling Co., Inc. (Davenport)	AQ	31
Pomeroy Rental LLC (Pomeroy)	AQ/SW	400
# HDS Farms, L.L.C. (Sioux Co.)	AFO	1,500
James Mathes (Marion Co.)	AFO	188
# Kevin Montgomery (Clinton Co.)	AFO	400
# Phillip Hooyer dba Natural Fertilizer Co. (Sioux Co.)	AFO	4,500
Rock Bottom Dairy; Bernie Bakker (Rock Valley)	AFO	1,500
TMAC Farms, LLC (Plymouth Co.)	AFO	83
SCS Flooring Co. (Homestead)	AQ	1,500
#*Richard Steen (Montgomery Co.)	AFO	100
Ron and Joanne Kennedy (Council Bluffs)	UT	9,182
# Ted Dickey dba Dickey Farms (Muscatine Co.)	AQ/SW/AFO	112
# Rick Renken (LeMars)	AFO	181
Melvin Wellik; Wellik-DeWitt Implement (Britt)	AQ/SW	100
Pam Lehman (Decatur Co.)	SW	100
Regency of Iowa, Inc. (Johnson/Story Cos.)	AQ	312
Regency of Iowa, Inc. (Johnson Co.)	WS	7,000
James Mathes (Marion Co.)	AFO	187
# Iowa Select Farms, LLP (Hamilton Co./Wright Co.)	AFO	7,000
# Winter Feedlots, Inc. (Plymouth Co.)	AFO	93
# Allen Hoeper (Bremer Co.)	AFO	2,500
# Godbersen-Smith Construction Co. (Audubon Co.)	AQ/SW	1,000
Pomeroy Rental LLC (Pomeroy)	AQ/SW	200
Regency of Iowa, Inc. (Johnson/Story Cos.)	AQ	312
Randy Bachman; Bachman Tiling & Excavating (Pomeroy)	AQ/SW	200
	TOTAL	45,262

#Animal Feeding Operation

BOLD Entries Have Been Referred to DRF

**Iowa Department of Natural Resources
Environmental Services
Report of WW By-passes**

During the period June 1, 2011 through June 30, 2011, 5 reports of wastewater by-passes were received. A general summary and count by field office is presented below. This does not include by-passes resulting from precipitation events.

Month	Total	Avg. Length (days)	Avg. Volume (MGD)	Sampling Required	Fish Kill
January '11	6(8)	0.741	0.109	1	0(0)
February '11	6(6)	0.354	0.065	2	0(0)
March '11	9(20)	0.167	0.032	5	0(0)
April '11	6(20)	1.118	0.038	3	0(0)
May '11	9(12)	0.086	1.835	4	0(0)
June '11	5(8)	0.729	0.183	1	0(0)
July '10	12(6)	0.174	0.031	2	0(0)
August '10	9(6)	0.405	0.161	4	0(0)
September '10	7(4)	0.149	0.028	1	0(0)
October '10	7(6)	0.238	0.001	0	0(0)
November '10	1(6)	0.167	0.000*	0	0(0)
December '10	6(6)	0.859	0.225	5	0(0)

(numbers in parentheses are for same period last year)
*Volume for the November, 2010 event was 240 gallons

Total Number of Incidents Per Field Office This Period:

1	2	3	4	5	6
0	0	1	2	2	0

Environmental Service Division

Variance Report

7/28/2011

Monthly Variance Report
June 2011

Item No.	Facility/City	Program	DNR Reviewer	Subject	Decision	Date
1	Gregory Feedlots Inc	Waste Water	Paul Van Dorpe	Variance request from well separation distances.	Approval	6/1/2011
2	Moser Feedlot	Waste Water	Paul Petitti	Variance request from well separation distances.	Approval	6/1/2011
3	Benton County Nature Center	Water Supply	Mark Moeller	Variance request for use of non-ASME pressure tanks & for volume of pressure tank.	Approval	6/1/2011
4	Iowa State University	Air Quality	Bryan Bunton	Variance request to install temporary boilers	Approval	6/1/2011
5	Absolute Energy	Air Quality	Bryan Bunton	Variance request from operating limits.	Denied	6/3/2011
6	MidAmerican Energy Co.	Solid Waste	Nina Koger	Variance request from the requirement to place CCR in their approved lined area if flooding does occur.	Approval	6/6/2011
7	Cedar Falls Utilities	Air Quality	Reid Bermel	Variance request for a trail burn of biomass fuels	Approval	6/7/2011
8	MidAmerican Energy Co.	Air Quality	Reid Bermel	Variance to increase the maximum number of trucks per day to 125 trucks for flood preparation of the as & flue gas desulfurization piles	Partially Approved	6/7/2011
9	Southern Iowa Rural Water Assoc.	Waste Water	Dinbanhu Gupta	Variance request for proposed two cell controlled discharge lagoon	Approval	6/8/2011
10	Koch Nitrogen Co LLC	Air Quality	Dennis Thielen	Variance from IAC 22.1 construction permit	Approval	6/8/2011
11	MidAmerican Energy Co.	Air Quality	Dennis Thielen	Variance from IAC 22.1 construction permit	Approval	6/9/2011
12	MidAmerican Energy Co.	Air Quality	Dennis Thielen	Variance from IAC 22.1 construction permit	Approval	6/9/2011
13	City of Council Bluffs	Air Quality	Dennis Thielen	Variance from IAC 22.1 construction permit	Approval	6/10/2011
14	Honeland Energy Solutions	Air Quality	Dennis Thielen	Variance request to operate under revised permits	Denied	6/21/2011
15	Iowa Lakes Regional Water	Waste Water	Marty Jacobs	Variance request for installing influent piping above the pond seal	Approval	6/23/2011
16	City of Oelwein	Waste Water	Marty Jacobs	Variance request for installation of a wastewater lift station without a trash basket or screens.	Denied	6/27/2011
17	Iowa State University	Air Quality	Bryan Bunton	Variance request to operate generator at a lower stack height.	Approval	6/28/2011
18	Iowa American Water	Water Supply	AJ Montefusco	Variance request regarding the separation distances from sewers and water mains.	Denied	6/24/2011
19	Couser Cattle Company	Waste Water	Paul Petitti	Variance request from the requirement of 100' from an open feedlot to a private deep well	Approval	6/6/2011



Iowa Department of Natural Resources
Environmental Services Division
Report of Manure Releases

During the period June 1, 2011, through June 30, 2011, 2 reports of manure releases were forwarded to the central office. A general summary and count by field office is presented below.

		Total Incidents		Surface Water Impacts		Feedlot		Confinement		Land Application		Transport		Hog		Cattle		Poultry		Other	
Month	Year	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago
Jan	2011	5	1	0	1	0	0	5	1	0	0	0	0	4	0	0	1	1	0	0	0
Feb	2011	1	3	0	0	0	0	1	1	0	0	0	2	1	1	0	0	0	2	0	0
Mar	2011	2	5	1	2	1	0	1	4	0	0	0	1	0	4	1	1	1	0	0	0
Apr	2011	8	7	0	0	0	1	5	2	1	0	2	4	7	5	1	2	0	0	0	0
May	2011	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
Jun	2011	2	3	1	1	1	1	1	1	0	0	0	1	0	2	1	1	1	0	0	0
Total		19	19	2	4	2	2	14	9	1	0	2	8	13	12	3	5	3	2	0	0

Total Number of Incidents per Field Office for the Selected Period	Field Office 1		Field Office 2		Field Office 3		Field Office 4		Field Office 5		Field Office 6	
	Current	Previous										
Total	1	1	1	1	0	0	0	1	0	0	0	0



Iowa Department of Natural Resources

Environmental Services Division

Report of Hazardous Conditions

During the period June 1, 2011, through June 30, 2011, 75 reports of hazardous conditions were forwarded to the central office. A general summary and count by field office is presented below. This does not include releases from underground storage tanks, which are reported separately.

		Substance								Mode											
		Total Incidents		Agrichemical		Petroleum Products		Other Chemicals		Transport		Fixed Facility		Pipeline		Railroad		Fire		Other*	
Month	Year	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago	Cur	Yr Ago
Jan	2011	53	52	6	0	32	36	15	16	11	16	35	34	1	0	4	3	1	0	1	2
Feb	2011	61	43	5	0	34	29	22	14	12	14	46	22	0	5	0	1	0	0	4	2
Mar	2011	70	66	6	3	48	49	16	14	8	14	57	46	0	4	5	1	1	1	1	5
Apr	2011	71	85	15	4	40	46	16	35	16	33	46	60	0	3	2	2	1	0	6	8
May	2011	77	57	16	2	39	35	22	20	20	15	52	39	1	3	1	1	0	1	3	7
Jun	2011	75	60	15	1	40	46	20	13	24	19	41	42	4	1	2	2	0	0	4	3
Total		407	363	63	10	233	241	111	112	91	111	277	243	6	16	14	10	3	2	19	27

*Other includes dumping, theft, vandalism and unknown

Total Number of Incidents per Field Office This Selected Period	Field Office 1		Field Office 2		Field Office 3		Field Office 4		Field Office 5		Field Office 6	
	Current	Year Ago										
Total	15	8	14	15	11	8	10	9	12	14	13	12