ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 141 and 142

[FRL–6329–3]

RIN 2040–AD15

Revisions to the Unregulated Contaminant Monitoring Regulation for Public Water Systems

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Safe Drinking Water Act (SDWA), as amended in 1996, requires the Environmental Protection Agency (EPA) to establish criteria for a monitoring program for unregulated contaminants and, by August 6, 1999, to publish a list of contaminants to be monitored. To conform to the Amendments, EPA is proposing the Unregulated Contaminant Monitoring Regulation for Public Water Systems (UCMR) to substantially revise the current regulations for unregulated contaminant monitoring.

Under a separate action on January 8, 1999, EPA published a Direct Final Rule suspending the existing monitoring requirements for systems serving 10,000 or fewer persons, effective March 9, 1999. Prior to March 9, 1999, the unregulated contaminant monitoring regulations required public water systems to monitor for unregulated contaminants during one year every five years. EPA promulgated the direct final rule to allow systems serving 10,000 or fewer persons to save the cost of a third monitoring round under the previous regulations, which if performed as scheduled would have overlapped with monitoring requirements expected to be promulgated in the UMCR in August 1999.

This proposed rule includes a new list of contaminants to be monitored, procedures for selecting a national representative sample of public water systems serving 10,000 or fewer persons that will be required to monitor, the frequency and schedule for monitoring, and procedures for placement of the monitoring data in the National Drinking Water Contaminant Occurrence Data Base, as required under section 1445 of SDWA, as amended. The data in the database will be used to identify contaminants for the Drinking Water Contaminant Candidate List (CCL), to support the Administrator's determination of whether or not to develop drinking water standards for a particular contaminant, and in developing standards for the contaminants the Administrator selects.

DATES: The proposed rule is open to public comment until June 14, 1999.

ADDRESSES: Send written comments to the Comment Clerk, docket number W–98–02, U.S. Environmental Protection Agency, Water Docket (MC 4101), 401 M Street, SW, Washington, DC 20460. Please submit an original and three copies of your comments and enclosures (including references). Commenters who want EPA to acknowledge receipt of their comments should enclose a self-addressed, stamped envelope. No facsimiles (faxes) will be accepted.

Comments may also be submitted electronically to ow-docket@epamail.epa.gov. Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Electronic comments must be identified by the docket number W–98–02. Comments and data will also be accepted on disks in WordPerfect in 5.1 format or ASCII file format. Electronic comments on this proposal may be filed online at many Federal Depository Libraries.

The full record for this proposal has been established under docket number W–98–02 and includes supporting documentation as well as printed, paper versions of electronic comments. The full record is available for inspection from 9 a.m. to 4 p.m. Monday through Friday, excluding legal holidays at the Water Docket, East Tower Basement, USEPA, 401 M Street, SW, Washington DC. For access to docket materials, please call (202) 260–3027 between 9 a.m. and 3:30 p.m, Eastern Time, Monday through Friday, to schedule an appointment.

FOR FURTHER INFORMATION CONTACT: Charles Job, Standards and Risk Management Division, Office of Ground Water and Drinking Water (MC–4607), U.S. Environmental Protection Agency, 401 M Street, SW, Washington DC 20460, (202) 260–7084. General information may also be obtained from the EPA Safe Drinking Water Hotline. Callers within the United States may reach the Hotline at (800) 426–4791. The Hotline is open Monday through Friday, excluding federal holidays, from 9 a.m. to 5:30 p.m. Eastern Time.

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Abbreviations and Acronyms Used in the Preamble and Proposed Rule

2,4-DNT—2,4-dinitrotoluene
2,6-DNT—2,6-dinitrotoluene
4,41′-DDE—degradation product of DDT
Alachlor ESA—alachlor ethanesulfonic acid, a degradation product of alachlor
AOAC—Association of Official Analytical Chemist
ASDWA—Association of State Drinking Water Administrators
ASTM—American Society for Testing and Materials
BGM—Buffalo Green Monkey cells, a specific cell line used to grow viruses
CAS—Chemical Abstract Service
CASRN—Chemical Abstract Service Registry Number
CCL—Contaminant Candidate List
CCR—Consumer Confidence Reports
CERCLA—Comprehensive Environmental Response, Compensation and Liability Act
CFR—Code of Federal Regulations
CFU—Colony forming unit
CFU/mL—Colony forming units per milliliter
CWS—Community water system
DCPA—dimethyl tetrachloroterephthalate, chemical name of the herbicide dacthal
DCPA di- and mono-acid degradates —Degradation products of DCPA
DDE—Degradation product of DDT
DDT—Dichloro diphenyl trichloroethane, a general insecticide
EDL—Estimated detection limit
EPA—Environmental Protection Agency
EPTC—s-ethyl-dipropylthiocarbamate, an herbicide
EPTDS—Entry Point to the Distribution System
FACA—Federal Advisory Committee Act
FTE—Full-time-equivalent
GC—Gas chromatography, a laboratory method
GLI method—Great Lakes Instruments method
GW—Ground water
GWUDI—Ground water under the direct influence of surface water
HLPC—High performance liquid chromatography, a laboratory method
ICR—Information Collection Request
IFRA—Initial regulatory flexibility analysis
IMS—Immunomagnetic separation

IRIS—Integrated Risk Information System
IS—Internal standard
LLE—Liquid/liquid extraction, a laboratory method
MAC—Mycobacterium avium intracellulare
MCL—Maximum contaminant level
MDL—Method detection limit
MRL—Minimum reporting level
MS—Mass spectrometry, a laboratory method
MS—Sample matrix spike
MSD—Matrix spike duplicate
MTBE—Methyl-tert-butyl-ether, a gasoline additive
NAWQA—National Water Quality Assessment Program
NCOD—National Drinking Water Contaminant Occurrence Data Base
NDWAC—National Drinking Water Advisory Council
NERL—National Environmental Research Laboratory
NPS—National Pesticide Survey
NTIS—National Technical Information Service
NTNCWS—Non-transient non-community water system
NTTAA—National Technology Transfer and Advancement Act
OGWDW—Office of Ground Water and Drinking Water
OMB—Office of Management and Budget
PBMS—Performance-Based Measurement System
pCi/L—Picocuries per liter
PCR—Polymerase chain reaction
PWS—Public Water System
PWSF—Public Water System Facility
QA—Quality assurance
QC—Quality control
RDX—Hexahydro-1,3,5-trinitro-1,3,5-triazine
RFA—Regulatory Flexibility Act
RPD—Relative percent difference
RSD—Relative standard deviation
SBREFA—Small Business Regulatory Enforcement Fairness Act
SD—Standard deviation
SDWA—Safe Drinking Water Act
SDWIS—Safe Drinking Water Information System
SDWIS FED—the Federal Safe Drinking Water Information System
SM—Standard Methods
SMF—Standard Compliance Monitoring Framework
SOC—Synthetic organic compound
SPE—Solid phase extraction, a laboratory method
SRF—State Revolving Fund
STORET—Storage and Retrieval System
SW—surface water
TBD—to be determined
TNCWS—Transient non-community water system
UCMR—Unregulated Contaminant Monitoring Regulations/Rule
UCM—Unregulated Contaminant Monitoring
ug/L—Micrograms per liter
UMRA—Unfunded Mandates Reform Act of 1995
USEPA—United States Environmental Protection Agency
UV—Ultraviolet
VOC—volatile organic compound

Preamble Outline

Potentially Regulated Entities

The regulated entities are public water systems. All large community and non-transient non-community water systems serving more than 10,000 persons would be required to monitor. A community water system means a public water system which serves at least 15 public service connections used by year-round residents or regularly serves at least 25 year-round residents. Non-transient non-community water system means a public water system that is not a community water system and that regularly serves at least 25 of the same persons over 6 months per year. Only a national representative sample of community and non-transient non-community systems serving 10,000 or fewer persons would be required to monitor. Transient non-community systems (i.e., systems that do not regularly serve at least 25 of the same persons over six months per year) would not be required to monitor. States, Territories, and Tribes with primacy to administer the regulatory program for public water systems under the Safe Drinking Water Act, sometimes conduct analyses to measure for contaminants in water samples and would be regulated by this action. Categories and entities that may ultimately be regulated include the following:

Category	Examples of potentially regulated entities	SIC
State, Tribal and Territorial Governments.	States, Territories, and Tribes that analyze water samples on behalf of public water systems required to conduct such analysis; States, Territories, and Tribes that themselves operate community and non-transient non-community water systems required to monitor.	9511
Industry	Private operators of community and non-transient non-community water systems required to monitor	4941
Municipalities	Municipal operators of community and non-transient non-community water systems required to monitor.	9511

This table is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. This table lists the types of entities that EPA is now aware could potentially be regulated by this action. Other types of entities not listed in the table could also be regulated. If you have questions regarding the applicability of this action to a particular entity, consult the person listed in the preceding **FOR FURTHER INFORMATION CONTACT** section.

I. Why the Unregulated Contaminant Monitoring Regulation Is Changing

The current Unregulated Contaminant Monitoring Program operating under the Safe Drinking Water Act (SDWA, the Act) requires public water systems to monitor for unregulated contaminants during one year every five years. Under section 1445(a)(2) of the Act, as amended in 1996, the Environmental Protection Agency (EPA) is required to establish criteria for a monitoring program for unregulated contaminants and, by August 6, 1999, to publish a list of contaminants to be monitored. To conform to the 1996 Amendments, EPA is proposing substantial revisions to the Unregulated Contaminant Monitoring (UCM) Program, currently described in 40 CFR 141.40. The purpose of the Unregulated Contaminant Monitoring Program is to collect occurrence data to help determine which contaminants EPA should regulate based on their concentrations in public water systems and their adverse health effects levels.

This proposed rule will take the place of the regulations currently in 40 CFR 141.35, 141.40, and 142.15(c)(3) and modify § 142.16. The revisions cover the following: (1) The frequency and schedule for monitoring based on public water system (PWS) size, water source, and likelihood of finding the contaminants; (2) a new shorter list of contaminants to be monitored, (3) procedures for selecting and monitoring a national representative sample of public water systems serving 10,000 or fewer people, and (4) procedures for placing the monitoring data in the National Drinking Water Contaminant Occurrence Data Base (NCOD), as required under Section 1445. The data generated by this rule, when adopted, will be used to identify contaminants for the Contaminant Candidate List (CCL), to support the Administrator's determination of whether or not to regulate a contaminant under the drinking water program, and to support the development of drinking water regulations. The proposed revised UCM Program is a cornerstone of the sound science approach to future drinking water regulation, which is one of the aims of the SDWA Amendments.

In a separate action, EPA has published a Direct Final Rule (64 FR 1494, January 8, 1999) which will cancel the existing monitoring requirements for systems serving 10,000 or fewer persons effective January 1, 1999. The Direct Final Rule will modify the existing regulations ahead of this Proposed Rule to revise the existing unregulated contaminant monitoring regulations. The Direct Final Rule's purpose is to allow the systems serving 10,000 or fewer persons to save the cost of a third monitoring round under the existing regulation, which if performed would overlap with monitoring under the proposed revised rule. EPA believes that it has sufficient data from the previous monitoring rounds to make decisions concerning the status of the contaminants on the existing monitoring list (see Table 1).

II. Current Unregulated Contaminant Monitoring

A. Current Program

The current Unregulated Contaminant Monitoring Program was established in the SDWA, as amended in 1986, and implemented by regulation in 1987 (52 FR 25720, July 8, 1987). The program was revised three times thereafter (56 FR 3526, January 30, 1991; 57 FR 22178, May 27, 1992; and 57 FR 31776, July 17, 1992). Under 40 CFR 141.40, public water systems are required to monitor for up to 48 unregulated contaminants and under 40 CFR 141.35, to report monitoring results to the States, or to EPA if a State does not have primacy to administer the State Drinking Water Program. These 48 contaminants are listed in Table 1 of this Preamble, along with their regulatory status. Under 40 CFR 142.15, primacy States must report monitoring results to EPA. Repeat monitoring and reporting are required during one year every 5 years. Systems serving fewer than 150 service connections may make their facilities available for the States to monitor, rather than perform their own monitoring.

B. Status of Unregulated Contaminants on the Current Monitoring List

Based on the results of the current Unregulated Contaminant Monitoring

Program, EPA analyzed each of the 48 contaminants on the current list. The status of the 48 contaminants as a result of that analysis is summarized below in Table 1.

TABLE 1.—LIST AND STATUS OF THE CURRENT UNREGULATED CONTAMINANTS

	In regulation development [1]	On contaminant candidate list [2]	Did not occur at significant levels [3]	Covered by other regulatory action [4]	Did not meet health effects level [5]
Aldicarb	X				
Aldicarb sulfone	X				
Aldicarb sulfoxide	X				
Aldrin		X			
Bromobenzene		X			
Bromochloromethane	X				
Bromodichloromethane	X				
Bromoform	X				
Bromomethane (methyl bromide)		X			
Butachlor			X		
sec-Butylbenzene					X
n-Butylbenzene					X
tert-Butylbenzene					X
Carbaryl			X		
Chlorodibromomethane	X				
Chloroethane	X				
Chloroform	X				
Chloromethane	X				
o-Chlorotoluene			X		
p-Chlorotoluene			X		
Dibromomethane	X				
Dicamba			X		
m-Dichlorobenzene			X		
Dichlorodifluoromethane			X		
1,1-Dichloroethane		X			
2,2-Dichloropropane		X			
1,3-Dichloropropane		X			
1,1-Dichloropropene		X			
1,3-Dichloropropene		X			
Dieldrin		X			
Fluorotrichloromethane			X		
Hexachlorobutadiene		X			
3-Hydroxycarbofuran				X	
Isopropylbenzene			X		
p-Isopropyltoluene		X			
Methomyl			X		
Metolachlor		X			
Metribuzin		X			
Naphthalene		X			
Propachlor			X		
n-Propylbenzene			X		
Sulfate		X			
1,1,1,2-Tetrachloroethane			X		
1,1,2,2-Tetrachloroethane		X			
1,2,3-Trichlorobenzene				X	
1,2,3-Trichloropropane			X		
1,2,4-Trimethylbenzene		X			
1,3,5-Trimethylbenzene					X

[1] In Regulation Development means that EPA is currently working on regulations affecting the contaminant in drinking water.
[2] On Contaminant Candidate List means that the contaminant is on the CCL for EPA to determine whether or not to regulate it in the future.
[3] Did Not Occur at Significant Levels means that unregulated contaminant monitoring results and other data did not indicate widespread occurrence or concentrations that would warrant further action.
[4] Covered By Other Regulatory Action means that the contaminant is addressed through regulation of other contaminants.
[5] Did Not Meet Health Effects Level means that the concentrations reported in unregulated contaminant monitoring results or other data were not at or above health effects levels established by EPA or other organizations that have such health indicators.

III. Proposed Changes in the Unregulated Contaminant Monitoring Program

A. Revised List of Unregulated Contaminants To Be Monitored

1. Criteria for Selecting Contaminants for the UCMR

(a) Revising the Monitoring List

Section 1445(a)(2)(B) requires EPA to list not more than 30 unregulated contaminants to be monitored by public water systems. Today EPA is proposing to use the Contaminant Candidate List (CCL), established under section 1412(b)(1)(B) of SDWA, as the primary basis for selecting contaminants for future monitoring under the UCMR. The criteria used in the CCL for identifying contaminants for which occurrence data are needed are:

(i) Whether sufficient data exist on the occurrence or likely occurrence of the contaminant in drinking water, including production, release, and use to warrant further confirming data; and

(ii) Whether sufficient data exist to indicate the occurrence of the contaminant in two or more States, or in ten or more public water systems.

The other criterion is whether an analytical method exists for the contaminant. The other mechanism for selecting contaminants for UCMR monitoring is through the petition of seven or more State governors to EPA, described below under III.A.2.(c), Modifying the Monitoring List through the Governors' Petition.

The CCL was developed with the advice of the Working Group on Contaminant Occurrence and Selection of the National Drinking Water Advisory Council (NDWAC), formed pursuant to the Federal Advisory Committee Act (FACA). The group developed criteria, adopted by EPA, for deciding which contaminants to include on the CCL.

Criteria for selecting contaminants for the CCL focused on occurrence in water at levels of health concern, or indications of occurrence (production or release, coupled with contaminant properties). EPA used health effects concentrations to determine the significance of occurrence levels. When developing the CCL, EPA used the previous unregulated contaminant monitoring data from States as one of the many sources of occurrence data. The term ''occurrence'' as used here means the measured observation of a substance in drinking water or potential source of drinking water. The 1998 CCL contains 50 chemical contaminants and 10 microbiological contaminants. The process for developing the CCL is described in more detail in the March 2, 1998, **Federal Register** containing the list (63 FR 10273).

When EPA began the process of choosing contaminants for the CCL, EPA and NDWAC experts worked from a compendium of 8 lists containing approximately 262 chemical contaminants. The lists used in this process included the 1991 Drinking Water Priority List, health advisories, Integrated Risk Information System, Non-Target Analytes in Public Water Supply Samples, Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Priority List, stakeholder responses, Toxic Release Inventory, and pesticides identified by the Office of Pesticide Programs. Contaminants not among the 262 chemical contaminants initially identified were not considered in developing the CCL.

Table 2 lists all of the contaminants on the CCL and indicates whether they are priorities for consideration under three categories—regulation, research (health, treatment, and analytical methods), and occurrence. (Contaminants may appear in more than one column of Table 2.) The groupings in Table 2 are based on current (1998) information, and some movement of contaminants between categories can be expected as more information is evaluated and analyzed. In Table 2, ''Regulation Determination Priorities'' means that for the contaminants listed, EPA believes it has or will soon have sufficient data to determine whether or not to regulate these contaminants. ''Research Priorities'' means that before EPA could make any regulatory determination, EPA would need health effects data, treatment technology results, or analytical methods development to test for the contaminants. ''Occurrence Priorities'' indicates that EPA needs data to determine whether the contaminant occurs or is likely to occur in drinking water of public water systems. The ''Occurrence Priorities'' identify the contaminants that EPA is focusing on in the Unregulated Contaminant Monitoring Program proposed today. EPA believes that the purpose of this program is to compile data concerning the occurrence of unregulated contaminants in drinking water so that, together with health effects information, EPA can determine which unregulated contaminants are priorities for future regulation.

TABLE 2.—CONTAMINANT CANDIDATE LIST (CCL)

Regulatory determination priorities	Research priorities			Occurrence priorities
	Health research	Treatment research	Analytical methods research	
Acanthamoeba (guidance)	Aeromonas hydrophila	Adenoviruses	Adenoviruses	Adenoviruses
1,1,2,2-tetrachloroethane	Cyanobacteria (Blue-green algae), other freshwater algae, and their toxins	Aeromonas hydrophila	Cyanobacteria (Blue-green algae), other freshwater algae, and their toxins	Aeromonas hydrophila
1,1-dichloroethane	Caliciviruses	Cyanobacteria (Blue-green algae), other freshwater algae, and their toxins	Caliciviruses	Cyanobacteria (Blue-green algae), other freshwater algae, and their toxins
1,2,4-trimethylbenzene	Helicobacter pylori	Caliciviruses	Helicobacter pylori	Caliciviruses
1,3-dichloropropene	Microsporidia	Coxsackieviruses (ICR data)	Microsporidia	Coxsackieviruses (ICR data)
2,2-dichloropropane	Mycobacterium avium intercellulare (MAC)	Echoviruses (ICR data)	1,2-diphenylhydrazine	Echoviruses (ICR data)
Aldrin	1,1-dichloropropene	Helicobacter pylori	2,4,6-trichlorophenol	Helicobacter pylori
Boron	1,3-dichloropropane	Microsporidia	2,4-dichlorophenol	Microsporidia
Bromobenzene	Aluminum	Mycobacterium avium intracellulare (MAC)	2,4-dinitrophenol	1,2-diphenylhydrazine
Dieldrin	DCPA mono-acid and di-acid degradates	Aluminum	2-methyl-Phenol	2,4,6-trichlorophenol
Hexachlorobutadiene	Methyl bromide	MTBE	Acetochlor	2,4-dichlorophenol
p-Isopropyltoluene	MTBE	Perchlorate	Alachlor ESA	2,4-dinitrophenol
Manganese	Perchlorate		Fonofos	2,4-dinitrotoluene
Metolachlor	Sodium (guidance)		Perchlorate	2,6-dinitrotoluene
Metribuzin			RDX	2-methyl-phenol
Naphthalene				Alachlor ESA
Organotins				Acetochlor
Triazines and degradation products (incl., but not limited to Cyanazine and atrazine-desethyl)				DCPA mono-acid and di-acid degradates
Sulfate				DDE
Vanadium				Diazinon
				Disulfoton
				Diuron
				EPTC
				Fonofos
				Linuron
				Molinate
				MTBE
				Nitrobenzene
				Perchlorate
				Prometon
				RDX
				Terbacil
				Terbufos

The CCL lists 26 chemical and 8 microbiological contaminants as occurrence priorities because additional data on their occurrence in drinking water are needed to help decide whether or not to regulate them. Today's proposal does not address the two contaminants identified in the preparation of the CCL as highly localized in occurrence: Perchlorate and RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine). During the process of identifying contaminants for the CCL and subsequently for the UCMR, perchlorate had only been detected at a few sites in the western U.S. However, perchlorate is increasingly being detected in other parts of the country. A total of nine States have detected perchlorate and as monitoring increases, other States are likely to detect it. EPA seeks public comment on whether perchlorate and RDX should be included in the UCM List.

For the remaining 32 contaminants on the CCL Occurrence Priorities List, EPA has evaluated the availability of analytical methods published by EPA or voluntary consensus standards organizations such as the American Society for Testing and Materials (ASTM) and Standard Methods (SM). In addition, EPA prioritized analytical methods development activities for those compounds and microbiological parameters for which suitable analytical methods are not currently available. As listed in List 1 of Table 3 below, EPA identified 10 organic chemical contaminants and one microbiological contaminant for which analytic methods are now available. List 1 contaminants are those that are proposed today to be monitored beginning on the effective date of this rule, as explained in 2., List of Contaminants to be Monitored. List 2 of Table 3 lists 14 organic chemical contaminants for which methods are being refined. List 3 of Table 3 identifies seven microbiological contaminants for which methods are being researched. Contaminants on Lists 2 and 3 are not proposed to be monitored until EPA promulgates revisions to this rule to specify analytical methods and related sampling requirements.

In addition, EPA requests comment on the addition to the unregulated contaminant monitoring List 1 of two naturally occurring radionuclides with health concerns at low levels, Lead-210 (Pb-210), and Polonium-210 (Po-210). Both nuclides are in the uranium decay series along with radium-226 and radon-222. Lead-210 with a half life of 22 years, and one of its progeny, polonium-210, with a half life of 138 days, have been found in drinking water. EPA is aware of the occurrence of these contaminant in shallow aquifers in Florida (Harada, et al., 1989; Upchurch, 1991), and in at least two other states. Because of potential occurrence and consequent health risks, EPA is considering adding these contaminants to the monitoring list.

(b) Regulatory Options

EPA proposes in § 141.40(a)(3) that the contaminants listed in Lists 1–3 be used for the UCMR program monitoring list and be categorized based on the availability of analytical methods. List 1 is the basis for ''Assessment Monitoring.'' EPA proposes that ''Assessment Monitoring'' occur at all 2,774 large community and non-transient non-community systems serving more than 10,000 persons and a representative sample of approximately 800 systems serving less than 10,000 or fewer persons in State Monitoring Plans. List 2 will be the basis of a ''Screening Survey'' of approximately 300 of the systems required to do Assessment Monitoring. List 3 will be used for ''Pre-Screen Testing'' at up to 200 systems selected because of potential vulnerability to the specific contaminants. This monitoring approach is described in detail under III.C. ''Type of Monitoring Required of Public Water Systems Based on Listing Group.'' Assessment Monitoring would include only those contaminants in List 1 for which analytical methods are included in this regulation. Assessment Monitoring (and associated ''index site'' monitoring described below) is the only monitoring that would be required by today's proposal. This includes contaminants for which EPA expects to have developed reference analytical methods by the year 2000.

For contaminants in List 2 for which analytical methods are developed by the time of initial monitoring in 2001, EPA would amend this rule to require the Screening Survey to be conducted at selected systems. For those contaminants in List 2 and List 3 that do not have well developed methods by the time of initial monitoring in 2001, EPA would issue a revision to this regulation to activate the contaminants at the time when the methods are considered implementable, up to the limit of 30 contaminants to be monitored within the five-year contaminant listing cycle. Monitoring for those contaminants would then begin at a specified effective date in that prospective regulation. Therefore, monitoring of contaminants on Lists 2 and 3 would not be required by today's proposal and would only occur when EPA publishes a revision to this regulation specifying the methods to be used and the dates for monitoring to begin, at which time EPA would request public comment on the methods. EPA solicits public comment on the selection of these contaminants using the CCL priorities for contaminants needing occurrence data before regulatory determination and the activation for monitoring based on methods availability.

EPA believes that the CCL process already uses the best available information on contaminants of concern and emerging contaminants that may need regulation. SDWA section 1445 (a)(2)(B)(ii) provides for the Governors of seven or more states to petition the Agency to add contaminants to the Monitoring List. This petition process allows for the flexibility to include contaminants that are emerging as concerns between the five-year listing cycles. EPA, however, does request public comment on other criteria that the Agency may use to include contaminants of concern on the UCM List that are not on the CCL and may not be identified through a Governors' Petition, such as Polonium-210, noted above.

(c) Analytical Methods Applicable to the Monitoring List

The Monitoring List is developed around the availability to analytical methods for the listed contaminants and the level of information available for them at this time. The discussion below highlights analytical methods considerations in listing the contaminants for monitoring. Only the contaminants identified on List 1 will be monitored as a result of today's proposal. Contaminants on Lists 2 and 3 below are proposed for the Unregulated Contaminant Monitoring List, but will not be activated for monitoring until EPA believes that the analytical methods can be applied to obtain reliable results. At that time, EPA will propose List 2 and 3 contaminants for monitoring.

(i) Chemical Analytical Methods

The ability to correctly identify a chemical contaminant is directly related to the type of chemical and the analytical method used. Compounds such as disinfection byproducts are far less likely to be misidentified than pesticides because they are typically present at relatively high concentrations in disinfected waters, while pesticides are much less likely to occur, or occur at lower concentrations. The analytical method selected will determine the accuracy of the qualitative identification. In general, the most reliable qualitative identifications will come from methods that use mass spectral data for contaminant identification. However, these methods are typically less sensitive than methods that rely on less selective detectors.

Before EPA establishes a Maximum Contaminant Level (MCL), the Agency relies on a analytical method suitable for routine monitoring. It is likely that analytical methods in general use by laboratories performing drinking water analyses may not exist for some of the compounds proposed to be measured in the UCMR program. Complex analytical methods or methods requiring special handling often require more experienced laboratories than the laboratories performing routine compliance monitoring. Even when analytical methods that are in general use by analytical laboratories are available, limiting the analyses to a small number of laboratories operating under strict quality control requirements improves the precision and accuracy of the analyses, thereby increasing the usefulness of the data.

The option favored by many stakeholders and proposed today by EPA for conducting the chemical laboratory analyses is the following:

For PWSs serving more than 10,000 people, the PWS would be responsible for sample collection and analyses for unregulated contaminant Assessment Monitoring. This monitoring could be conducted at the same time as the required compliance monitoring. For unregulated contaminant Assessment Monitoring, however, EPA is proposing in § 141.40(a)(3) to require quality control procedures for both sampling and testing to ensure that the data collected under this regulation are of sufficient quality to meet the requirements of the related regulatory decisions. Thus, today's proposal specifies the analytical methods and procedures to be used in obtaining these data. The sampling and associated quality control requirements cover time frame, frequency, sample collection and submission, and review and reporting of results. The laboratory testing quality control requirements address use of a certified laboratory, sample collection/preservation, analytical methods, method detection limit, calibration, quality control sample, method performance test, detection confirmation, and reporting.

The purpose for these quality control requirements is to ensure that since EPA will only be able to obtain results from 3,574 systems (2,774 large systems and a representative sample of 800 systems from 65,600 systems serving 10,000 or fewer persons), the Agency obtains the most reliable data possible. EPA will provide a guidance manual to further explain these quality control measures that would need to be performed for all unregulated contaminant monitoring. For systems that are part of State Plans for representative samples, the sampling guidance, ''UCMR Guidance for Operators of Public Water Systems

Serving 10,000 or Fewer Persons'' is available. Drafts of the guidance and manual ''UCMR Analytical Methods and Quality Control Manual'' are available for public comment with this proposed rule through the EPA Safe Drinking Water Hotline at 800–426–4791, or through EPA's Office of Ground Water and Drinking Water Homepage at www.epa.gov/ogwdw. EPA would apply these same testing and quality control procedures to the samples of all monitored systems. These proposed procedures are discussed in more detail in section 5, Monitoring Requirements under the Proposed UCMR.

EPA is specifying the use of certain analytical methods that are currently available for UCM (see Table 5, Unregulated Contaminant Monitoring List, III A.2(a) column 3). While these methods are routinely used by commercial and public water system laboratories (including some that are currently used for compliance monitoring), they have not been routinely used for the contaminants on the UCM List. Note that, as shown in § 141.40(a)(3), Table 1, methods other than those that EPA has developed may be approved for use but quality control procedures must also be followed, as specified in § 141.40(a)(4) and (5), and appendix A. EPA is requesting comments on the methods which have been specified for the contaminants on the UCM List.

The data quality needs associated with drinking water chemical compliance monitoring and the evaluation and use of occurrence data are different. The purpose of compliance monitoring is to determine whether a compound is present currently in the drinking water above the established MCL. However, the purpose of the UCM is to obtain occurrence data to support future regulatory decisions. The data required to make regulatory decisions must be of high quality. All analytical methods are subject to false negatives (not detecting a contaminant when it is present), false positives (either incorrectly identifying or detecting a contaminant, or introducing a contaminant into a sample when it is not present), and errors in the accuracy and precision of quantitative results.

The control of false negatives is important for both compliance and occurrence monitoring. However, using analytical methods which inherently have fewer false positives or requiring quality control elements that control false positives, is more critical in occurrence than in compliance monitoring. There are much greater incentives inherent in compliance monitoring (e.g., the possibility of enforcement actions, the potential need to install expensive treatment systems, etc., to confirm that the contaminant detected is indeed present) than in occurrence data gathering.

For occurrence monitoring, the precision of the analyses is more critical than in compliance monitoring. Unless the concentration of the contaminant closely approaches the MCL, even relatively imprecise data can be used to ensure the data user that the compound is not present at a concentration above the MCL. However, the usefulness of occurrence data is much more dependent upon the precision of the measurement. The ability to perform meaningful statistical analysis, e.g., to determine the percentage of waters in the United States that have compound X at or above the minimum reporting level (MRL), or to determine whether compound X occurs more frequently or at higher concentrations in one type of water or geographical region of the country, is directly dependent on the precision of the data.

The Agency has evaluated analytical methods developed by both EPA and other voluntary consensus standards organizations that publish analytical methods, such as Standard Methods and the American Society for Testing and Materials. The Agency has not approved analytical methods published only in analytical journals or methods that use techniques that cannot routinely be used by all drinking water analysis laboratories (e.g., acid, base/neutral fractionation, or packed column gas chromatography). Because control of ''false negatives'' is essential to the quality of the data collected under this proposed regulation, documentation of the contaminants' stability under the sample and extract holding conditions specified in the analytical method were also evaluated.

For the compounds selected to be included in this regulation, the following summary, Table 3, Status of Analytical Methods for Chemical Contaminants on the UCM List, presents a brief assessment of methods availability for each chemical contaminant. EPA requests public comment on this assessment of methods availability.

TABLE 3.—STATUS OF ANALYTICAL METHODS FOR CHEMICAL CONTAMINANTS ON THE UCM LIST

List 1—Organic chemical contaminant	CAS No.	Analytical Methods	Status of availability
2,4-dinitrotoluene	121–14–2	EPA 525.2	Method is adequate for monitoring.
2,6-dinitrotoluene	606–20–2	EPA 525.2	Method is adequate for monitoring.
DCPA mono acid degradates.	887–54–7	EPA 515.1 EPA 515.2 D5317–93 AOAC 992.32	No method is available to measure the mono and di acid forms separately. All of the approved methods identify total mono and di acid forms.
DCPA di acid degradates	2136–79–0	EPA 515.1 EPA 515.2 D5317–93 AOAC 992.32	No method is available to measure the mono and di acid forms separately. All of the approved methods identify total mono and di acid forms.
4,4′-DDE	72–55–9	EPA 508 EPA 508.1 EPA 525.2 D5812–96 AOAC 990.06	Methods are adequate for monitoring.
EPTC	759–94–4	EPA 507 EPA 525.2 D5475–93 AOAC 991.07	Methods are adequate for monitoring.

TABLE 3.—STATUS OF ANALYTICAL METHODS FOR CHEMICAL CONTAMINANTS ON THE UCM LIST—Continued

List 1—Organic chemical contaminant	CAS No.	Analytical Methods	Status of availability
Molinate	2212–67–1	EPA 507 EPA 525.2 D5475–93 AOAC 991.07	Methods are adequate for monitoring.
MTBE	1634–04–4	EPA 524.2 D5790–95 SM6210D	Methods are adequate for monitoring.
Nitrobenzene	98–95–3	EPA 524.2 D5790–95 SM6210D	Methods are adequate for monitoring.
Terbacil	5902–51–2	EPA 507 EPA 525.2 D5475–93 AOAC 991.07	Methods are adequate for monitoring.

List 2—Organic chemical contaminant	CAS No.	Availability of analytical methods	Status of availability
1,2-diphenylhydrazine	122–66–7	In development	Some methods evaluated but inadequate. Priority for analytical method development. Anticipate that contaminant will be added to EPA Method 525.2.
2,4,6-trichlorophenol	88–06–2	In development	EPA Method 552 evaluated but subject to false positives from interferences of the derivitized byproduct of the contaminant. Anticipate that contaminant will be included in a new solid phase extraction/GC/MS method currently under development.
2,4-dichlorophenol	120–83–2	In development	EPA Method 552 evaluated but subject to quantitative uncertainty due to inadequate derivatization of the contaminant. Anticipate that contaminant will be included in a new solid phase extraction/GC/MS method currently under development.
2,4-dinitrophenol	51–28–5	In development	Some methods evaluated but inadequate. Anticipate that contaminant will be included in a new solid phase extraction/GC/MS method currently under development.
2-methy -phenol	95–48–7	In development	Some methods evaluated but inadequate. Anticipate that contaminant will be included in a new solid phase extraction/GC/MS method currently under development.
Alachlor ESA and degradation byproducts of acetanilide pesticides.		To be determined	EPA is evaluating which specific contaminants will be included within this group of compounds. Analytical methods will be determined for the targeted contaminants.
Acetochlor	34256–82–1	In development	No adequate method available. Anticipate that this compound can be added to the scope of EPA Method 525.2
Diazinon	333–41–5	In development	Diazinon is listed as an contaminant in several EPA and voluntary consensus standard organization methods but it is subject to rapid aqueous degradation. Preservation research currently being conducted to develop preservation technique that would permit adding this compound to EPA Method 525.2.
Disulfoton	298–04–4	In development	Disulfoton is listed as an contaminant in several EPA and voluntary consensus standard organization methods but it is subject to rapid aqueous degradation. Preservation research currently be conducted to develop preservation technique that would permit adding this compound to EPA Method 525.2.
Diuron	330–54–1	In development	While this compound is included in the scope of NPS Method 4 (LLE/HLPC/UV) and EPA Method 553(SPE/HPLC/MS), these methods are not adequate for this monitoring. Anticipate that this compound can be included in a new SPE/HPLC/UV method currently being developed.
Fonofos	944–22–9	In development	Fonofos is listed as an contaminant in several EPA and voluntary consensus standard organization methods but it is subject to rapid aqueous degradation. Preservation research is currently being conducted to develop preservation technique that would permit adding this compound to EPA Method 525.2.
Linuron	330–55–2	In development	While this compound is included in the scope of NPS Method 4 (LLE/HLPC/UV) and EPA Method 553(SPE/HPLC/MS), these methods are not adequate for this monitoring. Anticipate that this compound can be included in a new SPE/HPLC/UV method currently being developed.
Prometon	1610–18–0	In development	Prometon is listed as an contaminant in several EPA and voluntary consensus standard organization methods but it is subject to rapid aqueous degradation in non-acidified samples and is not readily extracted in acidified samples. Preservation research is currently being conducted to add neutralizing the pH of acidified samples just prior to extraction. This would permit adding this compound to EPA Method 525.2.

List 2—Organic chemical contaminant	CAS No. #	Availability of analytical methods	Status of availability
Terbufos	13071–79–9	In development	Terbufos is listed as an contaminant in several EPA and voluntary consensus standard organization methods but it is subject to rapid aqueous degradation. Preservation research is currently being conducted to develop a preservation technique that would permit adding this compound to EPA Method 525.2.

(ii) Microbiological Analytical Methods

The discussion of data quality for chemical analytical methods will also apply to microbiological testing when analytical methods are developed for CCL microorganisms. When microorganisms were proposed for the CCL, EPA recognized that analytical methods were not well developed for the majority of them. Because of the lack of available analytical methods, some of the CCL microorganisms were grouped either into one category where sufficient information was available about methodologies to consider regulating them, or another category where more research, including research on detection methods and occurrence, was needed. At the present time, *Aeromonas* is the only one of these microorganisms for which more occurrence data are needed that also has an analytical method that is likely to be sufficiently developed for monitoring in time for implementation in the first round of Assessment Monitoring, List 1, under this proposed program. Three other microorganisms have methods available, but EPA is presently refining these methods. These microorganisms may be candidates for the Screening Survey if methods development proceeds expeditiously (§ 141.40(a)(3), Table 1, List 2), but are currently identified for Pre-Screen Testing (Table 1, List 3). The remaining four microorganisms currently lack satisfactory methods and will be evaluated for Pre-Screen Testing.

Several microorganisms on the CCL are actually groups of microorganism taxa. In some cases, the taxa have so many members that, given the limited resources available for UCMR monitoring, EPA may have to prioritize which strains, species, or serotypes are the most important to consider and target for monitoring or further study. Decisions will have to be made on the basis of health risk, disinfection resistance, occurrence in water, and other factors. To address the need to prioritize which microorganisms should be targeted for monitoring, EPA's Office of Research and Development is assisting the Office of Ground Water and Drinking Water in establishing a research program for health effects, treatment and analytical methods. EPA is requesting public comment on the assessment of methods availability and related issues presented below in Table 4.

TABLE 4.—STATUS OF ANALYTICAL METHODS FOR MICROBIOLOGICAL CONTAMINANTS ON THE UCM LIST

List 1—Microbiological contaminant	Availability of analytical method	Status of availability
Aeromonas hydrophila	Analytical method likely to be available for monitoring.	Current modification and evaluation of a published membrane filtration method (Havelaar et al., 1987) indicates that this method will be suitable for the monitoring program.
List 3—Microbiological contaminant		
Cyanobacteria (blue-green algae, other freshwater algae and their toxins).	Methods available but not standardized.	Methods are available for counting cyanobacteria but new, standardized methods are needed for direct counts of targeted species with filtration methods or a counting chamber. Standardized analytical methods are also needed to detect the more important cyanobacterial toxins.
Echoviruses	Methods available but not standardized.	With care to control overgrowths, echoviruses can be cultured on BGM cells and detected by ICR method but need methods such as serological typing to distinguish from other viruses. Cost of cell culture assays plus serotyping can be high. PCR methods, which are not available, are subject to interferences and do not demonstrate infectivity.
Coxsackieviruses	Methods available but not standardized.	Group B coxsackieviruses are easy to grow in tissue culture but group A coxsackieviruses are variable. Culturable coxsackieviruses can be detected with the ICR method but serotyping is needed to distinguish coxsackie from other viruses. Other detection methods such as immunoassay or PCR do not exist. New, standardized methods are needed.
Helicobacter pylori	No method currently available	Helicobacter pylori is difficult to grow due to slow growth and the need for a low oxygen environment. No selective medium exist that will discriminate H. pylori from background bacteria. A culturable method that demonstrates viability is preferred. Methods are needed for selective growth and identification. IMS has been used to concentrate Helicobacter pylori. PCR methods have been used but are not preferred due to interferences and the inability to demonstrate viability.

TABLE 4.—STATUS OF ANALYTICAL METHODS FOR MICROBIOLOGICAL CONTAMINANTS ON THE UCM LIST—Continued

List 1—Microbiological contaminant	Availability of analytical method	Status of availability
Microsporidia	No method currently available	No methods are available for the monitoring of the two species of human microspordia which have a waterborne route of transmission (*Enterocytozoon bienuesi* and *Septata intestinalis*). Oocysts could possibly be detected by methods similar to those being developed for *Cryptosporidium*. Potential methods may utilize water filtration, clean-up with immunomagnetic separation (IMS) and detection using microscopy with either fluorescent antibody or gene probe procedures. Due to the small size of microsporidia, problems could be encountered during filtration.
Adenoviruses	No method currently available	Adenoviruses serotypes 1 to 39 can be grown in tissue culture but enteric adenoviruses 40 to 41 are difficult to grow. Several selective tissue culture methods and detection methods have been reported. A selective, standardized method is needed for monitoring. PCR methods are not preferred because of interferences and inability to demonstrate infectivity.
Caliciviruses	No method currently available	No tissue culture methods exist for the two caliciviruses on the CCL (Norwalk and Snow Mountain). No sensitive or fully developed detection methods exist. PCR methods are not preferred due to interferences and the inability to demonstrate infectivity.

(d) Screening Methods

SDWA section 1445(i) requires EPA to review new analytical methods that may be used for regulated contaminants screening and analysis. After this review, EPA may approve such methods that are deemed ''more accurate or cost-effective than established reference methods for use in compliance monitoring.'' Section 1445(a)(2)(G) also allows States to use screening methods approved by the Administrator for unregulated contaminant monitoring. These methods are expected to provide flexibility in compliance monitoring to water systems and laboratories performing analysis on behalf on these systems. They are expected to be ''better and/or faster'' than existing analytical methods. EPA is developing a framework for the use of screening procedures for monitoring drinking water contaminants, and determining how the Agency will approve or recommend screening procedures for specific contaminants.

2. List of Contaminants To Be Monitored

(a) Proposed Monitoring List

Table 5, Unregulated Contaminant Monitoring List (Proposed), presents EPA's proposal for the initial list of unregulated contaminants for monitoring under section 1445(a)(2)(B)(i). The monitoring program that EPA proposes for these contaminants is a three-tiered approach based on the availability of information about each contaminant and the availability of analytical methods for each contaminant. This approach is described in section C., Type of Monitoring Required of Public Water Systems Based on Listing Group. The proposed monitoring program divides the listed unregulated contaminants into three lists: List 1, for which Assessment Monitoring will be required, List 2, designated for the Screening Survey; and List 3, designated for Pre-screen Testing. Today's proposed regulation only requires Assessment Monitoring for List 1 contaminants beginning on the proposed effective date of January 1, 2001. The monitoring for contaminants on Lists 2 and 3 will only be required after EPA promulgates further rules.

EPA proposes requiring Assessment Monitoring for those contaminants for which methods exist at the time this regulation is promulgated; as a result, some contaminants from List 2 may move to List 1 if EPA considers their methods reliable by promulgation of the final regulation. Also, by future rulemaking, EPA plans to implement the Screening Survey (List 2) monitoring in groups or batches of contaminants, rather than one contaminant at a time, to minimize sampling and testing costs since some of the contaminants may be tested by the same method. EPA proposes to take a similar approach with the contaminants in the Pre-Screen Testing (List 3) category. EPA plans to require, through future rulemaking Pre-Screen Testing for contaminants for which EPA needs to determine that new analytical methods can measure their existence in locations most likely to be found. All analytical methods for contaminants on Lists 2 and 3 would be peer reviewed, following EPA's policy for peer review, before the Agency proposes regulations which would require public water systems to monitor for them. EPA is seeking comment on the approach of a three-tiered monitoring program for unregulated contaminants and on the proposed list of contaminants to be monitored.

In Table 5, List 1 contaminants, for Assessment Monitoring, are organic chemicals and one microbiological contaminant for which analytical methods capable of generating the quantity and quality of data required under the UCMR are currently available, or expected to be available by promulgation of the final rule (August 1999). Monitoring for these contaminants would be required under today's proposed UCMR. These contaminants are in today's proposed rule, § 141.40(a)(3), Table 1, Unregulated Contaminant Monitoring List, List 1.

List 2 contaminants (all organic chemicals, at this time), contaminants for the Screening Survey, are those for which EPA is currently refining analytical methods. Development of these methods should be sufficient for a Screening Survey to be conducted in the first three years of the listing cycle, but may occur in the later years of the cycle. If methods are available for any of these contaminants before promulgation of the final rule, they will be added to Assessment Monitoring, List 1. These contaminants are characterized in today's proposed rule at Table 1, Unregulated Contaminant Monitoring List, List 2.

List 3 contaminants (all microbiological contaminants, at this time), contaminants for Pre-screen Testing, are those for which EPA has begun or shortly will begin analytical methods development, but completion of those efforts is not expected prior to the Assessment Monitoring or Screening Survey required under implementation

of this regulation. Instead, these contaminants would be tested for in Pre-Screen Testing. These contaminants are in today's proposed rule at § 141.40(a)(3) as Table 1, Unregulated Contaminant Monitoring List, List 3.

The column headings of Table 5 include:

1—Chemical or microbiological contaminant: the name of the contaminants to be analyzed.

2—CAS No. (Chemical Abstract Service Number): a unique number identifying the chemical contaminants.

3—Analytical Methods: method numbers identifying the methods that could be used to test the contaminants.

4—Minimum Reporting Level: the value and unit of measure at or above which the concentration or density of the contaminant must be measured using the Approved Analytical Methods.

5—Sampling Location: the locations within a PWS at which samples must be collected.

6—Date Monitoring to Begin: The years during which the sampling and testing are to occur for the indicated contaminant.

TABLE 5.—UNREGULATED CONTAMINANT MONITORING LIST (PROPOSED)

1—Contaminant	2—CAS identification No.	3—Analytical methods	4—Minimum reporting level	5—Sampling location	6—Date monitoring to begin
List 1—Assessment Monitoring: Organic Chemical Contaminants					
2,4-dinitrotoluene	121–14–2	EPA 525.2 [a]	2.4 ug/L [e]	EPTDS [f]	2001–2003
2,6-dinitrotoluene	606–20–2	EPA 525.2 [a]	2.0 ug/L [e]	EPTDS [f]	2001–2003
DCPA mono acid degradate	887–54–7	EPA 515.1 [a] EPA 515.2 [a] 5317–93 [b] AOAC 992.32 [c]	1.0 ug/L [e]	EPTDS [f]	2001–2003
DCPA di acid degradate	2136–79–0	EPA 515.1 [a] EPA 515.2 [a] D5317–93 [b] AOAC 992.32 [c]	1.0 ug/L [e]	EPTDS [f]	2001–2003
4,4'-DDE	72–55–9	EPA 508 [a] EPA 508.1 [a] EPA 525.2 [a] D5812–96 [b]	0.75 ug/L [e]	EPTDS [f]	2001–2003
EPTC	759–94–4	EPA 507 [a]	1.2 ug/L [e]	EPTDS [f]	2001–2003
Molinate	2212–67–1	EPA 507 [a] EPA 525.2 [a] D5475–93 [b] AOAC 991.07 [c]	0.87 ug/L [e]	EPTDS [f]	2001–2003
MTBE	1634–04–4	EPA 524.2 [a] 5790–95 [b] SM6210D [d]	5.0 ug/L [g]	EPTDS [f]	2001–2003
Nitrobenzene	98–95–3	EPA 524.2 [a] D5790–95 [b] SM6210D [d]	12 ug/L [g]	EPTDS [f]	2001–2003
Terbacil	5902–51–2	EPA 507 [a] EPA 525.2 [a] 5475–93 [b] AOAC 991.07 [c]	23 ug/L [e]	EPTDS [f]	2001–2003
List 1—Assessment Monitoring: Microbiological Contaminants					
Aeromonas Hydrophila	Reserved [h]	Membrane filter, in review	1 colony forming unit	(1) Near end of distribution line with longest residence time; (2) at a representative site in the distribution system	2001–2003

Chemical contaminant	CAS identification No.	Anticipated analytical methods	Minimum reporting level [e]	Sampling location
List 2—Screening Survey: Organic Chemical Contaminants (To Be Sampled After Notice of Analytical Methods Availability)				
1,2-diphenylhydrazine	122–66–7	EPA 525.2 [i]	TBD [h]	EPTDS [f]
2-methyl-phenol	95–48–7	SPE/GC/MS [l]	TBD [h]	EPTDS [f]
2,4-dichlorophenol	120–83–2	SPE/GC/MS [l]	TBD [h]	EPTDS [f]
2,4-dinitrophenol	51–28–5	SPE/GC/MS [l]	TBD [h]	EPTDS [f]
2,4,6-trichlorophenol	88–06–2	SPE/GC/MS [l]	TBD [h]	EPTDS [f]
Acetochlor	34256–82–1	EPA 525.2 [i]	TBD [h]	EPTDS [f]
Alachlor ESA		TBD [h]	TBD [h]	EPTDS [f]
Diazinon	333–41–5	EPA 525.2 [k]	TBD [h]	EPTDS [f]
			TBD [h]	EPTDS [f]
Disulfoton	298–04–4	EPA 525.2 [k]		

Chemical contaminant	CAS identification No.	Anticipated analytical methods	Minimum reporting level [e]	Sampling location
Diuron	330–54–1	SPE/HPLC/UV [j]	TBD [h]	EPTDS [f]
			TBD [h]	EPTDS [f]
Fonofos	944–22–9	EPA 525.2 [i]		
Linuron	330–55–2	SPE/HPLC/UV [j]	TBD [h]	EPTDS [f]
Prometon	1610–18–0	EPA 525.2 [k]	TBD [h]	EPTDS [f]
			TBD [h]	EPTDS [f]
Terbufos	13071–79–9	EPA 525.2 [k]		

[a] The version of the EPA methods being approved will be dependent upon the status of the approval of new versions for compliance monitoring. If appropriate regulations approving new versions of EPA compliance monitoring methods are completed prior to the promulgation of this regulation, the following versions of the above methods will be approved. *Methods for the Determination of Organic Compounds in Drinking Water—Supplement III,* EPA–600/R–95–131, August 1995. NTIS PB95–261616. Copies are also available from the National Technical Information Service (NTIS), U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll-free number is 800–553–6847.

If new regulations changing the versions of methods being approved for compliance monitoring are not completed prior to the promulgation of this regulation, then the following versions of the EPA methods are being approved for monitoring under the Unregulated Contaminant Monitoring Rule. Methods 507, 508, and 515.1 are in *Methods for the Determination of Organic Compounds in Drinking Water,* EPA–600/4–88–039, December 1988, Revised, July 1991. Methods 515.2 and 524.2 are in *Methods for the Determination of Organic Compounds in Drinking Water—Supplement II,* EPA/600/R–92/129, August 1992. These documents are available from the National Technical Information Service, (NTIS) U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161 (800) 553–6847. Methods 508.1 and 525.2 are available from US EPA NERL—Cincinnati, Cincinnati, Ohio 45268, (513) 569–7586.

[b] *Annual Book of ASTM Standards,* 1996 and 1998, Vol. 11.02, American Society for Testing and Materials. Method D5812–96 is located in the *Annual Book of ASTM Standards,* 1998, Vol. 11.02. Methods D5790–95, D5475–93, and D5317–93 are located in the *Annual Book of ASTM Standards,* 1996 and 1998, Vol 11.02. Copies may be obtained from the American Society for Testing and Materials, 101 Barr Harbor Drive, West Conshohocken, PA 19428.

[c] Official Methods of Analysis of AOAC (Association of Official Analytical Chemist) International, Sixteenth Edition, 4th Revision, 1998, Volume I, AOAC International, First Union National Bank Lockbox, PO Box 75198, Baltimore, MD 21275–5198. 1–800–379–2622.

[d] 18th and 19th editions of *Standard Methods for the Examination of Water and Wastewater,* 1992 and 1995, American Public Health Association; either edition may be used. Copies may be obtained from the American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005.

[e] Minimum Reporting Level determined by multiplying by 10 the least sensitive method's minimum detection limit (MDL=standard deviation times the Student's T value for 99% confidence level with n–1 degrees of freedom), or when available, multiplying by 5 the least sensitive method's estimated detection limit (where the EDL equals the concentration of compound yielding approximately a 5 to 1 signal to noise ratio or the calculated MDL, whichever is greater).

[f] Entry Points to the Distribution System, After Treatment.

[g] Minimum Reporting Levels (MRL) for Volatile Organic Compounds (VOC) determined by multiplying either the published Method Detection Limit (MDL) or 0.5 µg/L times 10, whichever is greater. The MDL of 0.5 ug/L (0.0005 mg/L) was selected to conform to VOC MDL requirements of 40 CFR 141.24(f)(17(E).

[h] To be Determined.

[i] Compound currently not listed as a contaminant in this method. Methods development currently being conducted in an attempt to add it to the scope of this method.

[j] Methods development currently in progress to develop a solid phase extraction/high performance liquid chromatography/ultraviolet method for the determination of this compound.

[k] Compound listed as being a contaminant using EPA Method 525.2; however, adequate sample preservation is not available. Preservation studies currently being conducted to develop adequate sample preservation.

[l] Methods development currently in progress to develop a solid phase extraction/gas chromatography/mass spectrometery method for the determination of this compound.

Microorganism	Identification No.	Anticipated analytical methods	Minimum reporting level	Anticipated sampling location
List 3—Pre-screen Testing: Contaminants With Analytical Methods Not Anticipated (To Be Available by Regulation Implementation)				
Cyanobacteria (blue-green algae, other freshwater algae and their toxins).	Reserved [a]	TBD [a]	TBD [a]	TBD [a]
Echoviruses	Reserved [a]	TBD [a]	TBD [a]	TBD [a]
Coxsackieviruses	Reserved [a]	TBD [a]	TBD [a]	TBD [a]
Helicobacter pylori	Reserved [a]	TBD [a]	TBD [a]	TBD [a]
Microsporidia	Reserved [a]	TBD [a]	TBD [a]	TBD [a]
Caliciviruses	Reserved [a]	TBD [a]	TBD [a]	TBD [a]
Adenoviruses	Reserved [a]	TBD [a]	TBD [a]	TBD [a]

[a]=To Be Determined.

Tables 3 and 4, in III.A.1.(c), Analytical Methods Applicable to the Monitoring List, present a summary of the status of the methods for all the contaminants on this list.

EPA believes that this three-tiered approach to the Monitoring List and program, which was recommended by stakeholders, reflects a balance between the implementability of current analytical methods and the need to obtain data in time frames that are useful for responding to concerns about the contaminants identified.

(b) Number of Contaminants on the Monitoring List

Thirty-two contaminants are on the UCM List, as proposed. SDWA Section 1445 (a)(2)(B)(i) indicates that the List shall not have more than 30 contaminants required to be monitored by public water systems. EPA interprets this to mean that the List may contain more than 30 contaminants, as long as monitoring is not required for more than 30 contaminants during the five-year listing cycle. EPA proposes that the 32 contaminants identified in the CCL Occurrence Priorities remain on the UCM List, with monitoring required for no more than 30 contaminants in any five-year UCM cycle. Furthermore, EPA proposes that future UCM Lists may include additional contaminants beyond 30, but the UCMR Program would only

require monitoring for up to 30 contaminants during any listing cycle.

The contaminants beyond 30 are ones for which PWSs might voluntarily provide data if they monitored for them for their own purposes. These additionally identified contaminants might also be ones for which PWSs might send EPA samples to be tested and analyzed (by EPA) if the Agency is developing or recently developed a provisional analytical method for them. EPA is preparing a guidance document specifying the procedures for voluntary submission of such data in the future to the National Contaminant Occurrence Database (NCOD). EPA requests public comment on maintaining a UCM List of more than 30 contaminants, but limiting PWS monitoring to 30 contaminants in any five-year UCMR listing cycle.

(c) Modifying the Monitoring List through the Governors' Petition

Section 1445(a)(2)(B)(ii) of SDWA provides that the Administrator shall include in the UCM List each contaminant recommended in a petition signed by the Governor of each of seven or more States, unless the Administrator determines that the action would prevent the listing of contaminants of a higher public health concern.

The statutory provision acknowledges the roles of States in setting priorities for developing health-based drinking water standards. The Governors' petition also provides a formal mechanism for addressing drinking water contaminants of concern that are identified between the periodic updating of the Unregulated Contaminant Monitoring Rule and the parallel five-year cycle of the Contaminant Candidate List.

(i) Circumstances Affecting the Governors' Petition

Given the requirement that the petition be signed by seven Governors, the petition process is likely to be used only when a contaminant has been identified in drinking water or sources of drinking water that appear to necessitate prompt action to determine its extent of occurrence. Under EPA's present approach to preparing the Contaminant Candidate List, with States and other stakeholders providing input for setting health-based priorities for research and standard-setting, contaminants of concern are likely to be addressed, at least initially, by special studies to determine the significance of their occurrence. One example of an emerging contaminant would be methyl tert butyl ether (MTBE). EPA is working with the U.S. Geological Survey to collect information on the occurrence of MTBE in northeastern States. Perchlorate is another example of an emerging contaminant of concern; the CCL notes that occurrence information is needed and will likely be obtained through special studies. California is studying perchlorate occurrence by requesting all water utilities with vulnerable sources to monitor for it and other States are also monitoring for this contaminant.

Given the necessary resources, EPA expects that well-designed studies will, in many cases, more expeditiously determine the significance of a critical new contaminant's occurrence than the regulatory process of requiring monitoring through the UCMR. However, today's proposal includes a codification of this statutory petition process.

(ii) Response to Governors' Petition

EPA proposes the following approach to contaminants contained in a Governors' petition. If the UCMR List contains fewer than 30 contaminants, the Administrator would add the recommended contaminant(s) to the UMCR list as expeditiously as the regulatory process and the availability of (an) acceptable analytical method(s) allow. Representative monitoring of small systems, however, could be delayed if EPA is devoting all the resources authorized by statute or appropriated to UCMR Assessment Monitoring and Screening Survey, and the monitoring of the State-recommended contaminant(s) would prevent monitoring of other contaminants of a higher health concern by directly replacing them or by making the collection and testing of the remaining contaminants more difficult to conduct, adding costs not anticipated. The other possibility is to conduct Pre-Screen Testing for the contaminant if a method was at the stage of development to allow its application in a highly controlled laboratory setting. This testing would focus on PWSs that might be more likely locations for the contaminant to occur.

If the UCMR list is at the statutory maximum of 30 contaminants for which monitoring is required, the Administrator must determine whether a State-recommended contaminant is of a higher public health concern than one of the contaminants already on the list. The ideal approach would be to compare the contaminant's occurrence weighted by the degree to which populations are exposed to levels above a health-based criterion. Although not required, the Governors' petition would likely cite State and/or other evidence of widespread contamination or potential for contamination. Health effects information may be minimal, particularly for probable drinking water exposures. In such a case, the Administrator would need to compare all the information available on the State-recommended contaminant(s) related to public health concerns, including special concerns for children and other sensitive subpopulations, and the availability of analytical methods to that of the contaminants on the UCMR list, to determine which, if any, contaminant(s) on the list of contaminants for which monitoring is required it/they should replace.

B. Public Water Systems Subject to the UCMR

The monitoring in these proposed revisions focuses ultimately on determining, on a national basis, the occurrence or likely occurrence of contaminants in drinking water of community water systems (CWS) and non-transient non-community water systems (NTNCWS). For regulatory purposes, public water systems are categorized as ''community water systems,'' or ''non-community water systems.'' Community water systems are specifically defined as ''public water systems which serve at least 15 service connections used by year-round residents or regularly serve at least 25 year-round residents.'' (40 CFR 141.2) A ''non-community water system'' means any other public water system. Non-community water systems include nontranisent non-community water systems and transient non-community water systems. Non-community water systems are available to serve the public, but are not used on a year-round basis in most cases. Non-transient systems regular serve at least 25 of the same persons over six months per year (e.g., schools). Transient systems do not regularly serve at least 25 of the same persons over six months per year.

One of the factors to be considered in establishing the revised UCM program under the 1996 SDWA Amendments is the number of persons served by a system. With respect to size, about 2,774 large systems (each serving more than 10,000 persons) provide drinking water to about 80 percent of the U.S. population served by public water systems. Under today's proposed regulation, all large systems would be required to monitor the unregulated contaminants specified in § 141.40(a)(3).

Section 1445(a)(2)(A) requires that the UCMR ensure that only a representative sample of systems serving 10,000 or fewer persons be required to monitor unregulated contaminants. The small community water systems, each serving

10,000 or fewer persons, and the non-transient, non-community water systems total 65,636 systems. EPA proposes that these systems be the set from which the national representative sample of systems is selected. EPA proposes that transient non-community systems be excluded from unregulated contaminant monitoring requirements. The variation in the 97,000 transient systems would be difficult to reflect in a national representative sample and could be very costly. Furthermore, projecting contaminant exposure results from such systems would be complex and inconclusive because of the transient nature of the population that uses them. The results from the very small community and non-transient, non-community systems (NTNCWS) could be extrapolated to these systems.

EPA will pay for the reasonable costs of monitoring for this representative sample, as long as the systems are part of a State Monitoring Plan. The Agency proposes that each system be selected through the use of a random number generator and monitored according to a nationally representative sample plan developed on the basis of population served by PWSs in each State. This is necessary to ensure the validity of the sample nationally and because EPA typically has the least information about these systems and needs a consistent base of data for program development. EPA proposes that a national sample of approximately 800 systems serving 10,000 or fewer persons would be statistically drawn from the national population served by PWSs. Section F, ''Representative Sample of Systems Serving 10,000 or Fewer Persons,'' provides the basis for this sample size. The number of systems selected within each size range of small systems will be based on the proportion of the State's population served by that size range within water source type. The State-based component of this national representative sample, called a State Monitoring Plan (or State Plan), would be reviewed and if necessary modified by a State. The resulting State Plans would then be part of a national sample framework, providing the representative national sample requisite to drawing national conclusions.

Additionally, to provide an improved understanding of contaminants and conditions affecting small systems, and additional quality assurance for this small sample, EPA proposes to statistically select up to 30 small public water systems from the systems in State Monitoring Plans using a random number generator as ''index'' sites at which contaminants would be monitored for every year during the five year listing cycle. EPA would conduct the sampling and testing for systems selected as index sites. At the time of sampling, EPA would also gather other data to characterize the environmental setting affecting the system including precipitation, land and water resource use and environmental data (such as soil type and geology).

Also, up to 150 additional small systems might be selected for the Pre-Screen Testing. The systems for the Pre-Screen Testing will be selected on the basis of their representativeness of systems most vulnerable to the particular List 3 contaminants. The statistical selection of the 800 systems for the national representative sample may not include the systems deemed most vulnerable to these contaminants, hence, the States and EPA may need to select additional systems for this targeted testing.

C. Type of Monitoring Required of Public Water Systems Based on Listing Group

At the Unregulated Contaminant Monitoring Regulation Stakeholders Meeting on June 3–4, 1998, a range of stakeholders suggested that the UCMR monitoring program be developed through a progression of monitoring levels based on contaminant groups that reflect current information about both the occurrence of the contaminants and method development. Current information and methods availability would determine the extent of monitoring. Both EPA and stakeholders are concerned about contaminants that may be ''emerging'' as contaminants of concern because they have not been monitored before but have the potential to be found near or in drinking water supplies or have been identified as potential health problems. An ''emerging contaminant of concern'' would not likely be covered by an approved EPA analytical method. Typically, ''research'' methods are used to detect such emerging contaminants and may be expensive. EPA would have to either develop an approved method for inclusion in a regulatory approach, or perhaps substitute a regulatory approach with a study using a single laboratory and a ''research'' method. The need to develop an approved analytical method would ''compete'' against other contaminants on the CCL that also require analytical method development. In recognition of these considerations, EPA proposed an approach with three monitoring levels, referred to as ''Assessment Monitoring,'' ''Screening Survey,'' and ''Pre-screen Testing,'' described below. EPA is seeking public comment on this approach.

1. Assessment Monitoring

The first type of monitoring in the three-tiered monitoring program that EPA proposes today pertains to the group of contaminants for which analytical methods are specified in § 141.40(a)(3), Table 1, List 1, Assessment Monitoring and in today's Preamble in Table 5, List 1. Importantly, these contaminants are ones for which initial data for PWSs indicate that the contaminants occur in at least two States or ten public water systems and should be monitored to assess national occurrence through UCM.

In § 141.40, EPA is proposing that each system conduct UCMR ''Assessment Monitoring'' of List 1 contaminants for a twelve-month period in the first three years of a five year UCMR contaminant listing cycle. Large systems would complete this monitoring in any twelve month period beginning in the years 2001 to 2003. Small systems in State Monitoring Plans would complete the monitoring according to the scheduled monitoring identified in those plans within the period of 2001 to 2003. Section F, ''Representative Sample of Systems Serving 10,000 or fewer persons,'' describes in detail the subset of small systems required to monitor. The State could specify in the State Monitoring Plans the schedule that would correlate with compliance monitoring. This arrangement should enable systems to complete UCMR sampling coincident with their compliance monitoring for regulated contaminants during one of the years when compliance monitoring is required. However, EPA recognizes that some large systems may not be required to monitor for any regulated contaminants to allow compliance within the five years after the effective date of this rule. In such a case, such large systems could monitor for the unregulated contaminants for any twelve-month period with in the five years they choose.

EPA is proposing that surface water systems monitor for four consecutive quarters and ground water systems two times six months apart. Under Assessment Monitoring, systems serving more than 10,000 persons would conduct and pay for their own sample collection and testing. Small systems included in State Monitoring Plans would collect the samples with EPA-supplied equipment and send the samples to EPA-specified laboratories. EPA would pay for the testing and reporting. The system would still have overall reporting responsibility to the

primacy agency. Frequency and location of monitoring are discussed in section D, ''Monitoring Requirements under the Proposed UCMR.''

2. Screening Survey

The contaminants that EPA is considering for the Screening Survey are listed in Table 5, List 2 and consist of those for which analytical methods are under development and for which EPA has less occurrence data than for the contaminants on List 1. The purpose of the Screening Survey is to analyze for contaminants where the use of newly developed, non-routine analytical methods are required. To do this, EPA would maximize the quality of the occurrence data obtained by using only a select, controlled group of laboratories. In addition, the Screening Survey might allow EPA to maximize occurrence data gathering resources by having a structure in place that would obtain scientifically defensible occurrence data for emerging contaminants of concern, more quickly than could be obtained through standard unregulated contaminant monitoring efforts. The Screening Survey could, for example, be useful where questions concerning whether a contaminant of concern is in fact occurring in drinking water. The Screening Survey is also intended to allow EPA to screen contaminants to see if they occur frequently enough to justify inclusion in future unregulated contaminant Assessment Monitoring or so frequently as not to require further monitoring but allow the Agency to begin to develop standards.

The contaminants in List 2 would be tested for in drinking water of a smaller, statistically valid sample of all (large and small) community and non-transient, noncommunity water systems (for example, about 300 systems), selected through a random number generator used to identify specific PWSs. The sample size needed for estimating frequencies of contaminant occurrence are smaller if the actual frequencies are close to 0, or to 100, percent. When a contaminant is consistently present, or consistently absent, it requires fewer samples to determine its frequency with adequate statistical confidence than if it occurs about half the time. Only 300 PWSs are needed to determine if a contaminant is present 5 percent or less frequently, at a 99 percent confidence level and with a 3 percent margin of error. (The same criteria require 1,844 samples when the frequency could be any number.) If the contaminant occurrence were over the threshold established for the Screening Survey, EPA would include the contaminant in the next Assessment Monitoring round (projected to begin in 2006) of the UCM program. The statistical threshold for positive results from this testing to determine if further testing is warranted might be 1 to 2 percent of systems having detections. If the contaminant occurrence were under the threshold, then no further testing would be required, and the contaminant may be removed from the list in a future UCM rulemaking. EPA is requesting public comment on whether the statistical threshold of 1 to 2 percent of systems is adequate to make a determination that further Assessment Monitoring should be conducted to determine the extent of contaminant occurrence, and, if not, what percent should be used as the threshold for such a determination .

The analytical methods that might be used are identified in Table 5, List 2, Screening Survey, as ''Anticipated Analytical Methods.'' These methods are being refined for the particular contaminants on List 2 and are not expected to be ready for use in an Assessment Monitoring program. Therefore, as groups of contaminants from List 2 have analytical methods that can be applied, EPA will publish a rule modification for public comment indicating the analytical methods and minimum reporting levels applicable to the contaminants and the location and timeframe for sampling.

Comments on the ''Screening Survey'' should address both the rationale for the contaminants identified for the Screening Survey and the monitoring program for them. Additionally, EPA is requesting public comment on two potential outcomes from the ''Screening Survey'': (1) As noted previously, if the contaminant is observed at very few or no PWSs (i.e., less than the threshold of 1 to 2 percent of systems), then the contaminant would be dropped from the UCM List 2 and no further monitoring for it would occur, and (2) if the contaminant is observed extensively (i.e., in a higher percentage of PWSs, such as 5 to 10 percent) and EPA has health effects data on it that indicate a significant concern, then it may move directly to the regulation development stage. In that case, there may be no Assessment Monitoring to provide additional occurrence data for that contaminant, depending on the urgency of the situation and existing data sufficiency.

With respect to funding the Screening Survey, EPA proposes that it pay for the testing and reporting (as described in Preamble section III.G., Reporting of Monitoring Results) for systems serving 10,000 or fewer persons. Systems serving 10,000 or fewer persons would be responsible for sample collection and preparing the samples for shipment. EPA would pay for the shipment of these samples to an EPA designated laboratory for testing.

For large systems serving more than 10,000 persons, EPA requests public comment on which alternative testing approach it would follow: (1) The large system would collect the samples, and submit them to a laboratory approved for testing List 2 contaminants based on EPA's evaluation of the laboratory's capability, blind sample test results, experience with similar methods, willingness to test samples from any PWS regulated under this regulation, and reasonableness of offered service price. The approved laboratory would report the results to the system. These large systems would be responsible for paying for the costs of testing by the EPA approved laboratory. (2) EPA would specify a strict protocol and performance criteria, that must be followed for this Screening Survey testing, including possible additional reporting requirements to allow comparison of the results with results from EPA's laboratory. Large systems could submit data from the test results for the List 2 contaminants as long as the laboratory doing the testing could document that it followed the protocol. These protocol and criteria would need to be published when the EPA publishes the rulemaking for public comment that contaminants in List 2 have methods ready for use in the UCMR program. EPA's concerns about this alternative testing approach are: (1) Increasing the number of laboratories participating would adversely impact the precision of the resulting data therefore, requiring a substantial increase in the number of utilities sampled to compensate, (2) A laboratory certification system would need to be established, causing considerable additional burden for both the States and EPA, and (3) no common analytical standards are available. EPA requests public comment on whether other options exist that would have low administrative burden for the States and EPA, have reasonable costs for testing List 2 contaminants by large systems, and allow EPA to obtain the scientific and defensible data it needs to make regulatory decisions.

EPA believes that one of these two arrangements for conducting the Screening Survey monitoring at large systems is necessary because strict quality assurance/quality control are essential for methods that are not fully developed for the contaminants being tested because of the small sample size. It is important to note that this testing

would be from a limited number of systems and, for any particular system, would only be done over a one-year timeframe in the five year contaminant listing cycle. If the contaminant occurrence were frequent enough or in sufficiently high concentrations to warrant regulation, future testing for the contaminant might not occur for another three to five years (i.e., after promulgation of a final regulation for that contaminant.

The Screening Survey would occur one or two times during the five-year listing cycle. EPA expects that this Screening Survey monitoring would occur for groups of contaminants, rather than for one contaminant at a time. Systems selected for the Screening Survey would monitor at the same frequency as for contaminants under Assessment Monitoring. Should implementation of the analytical method for a particular contaminant become a problem, the contaminant might move into the category of Pre-Screen Testing, described below.

3. Pre-Screen Testing

The third tier of the proposed monitoring program is ''Pre-Screen Testing'' for contaminants with analytical methods in an early stage of development. Pre-Screen Testing means sampling, testing, and reporting of the listed contaminants that may have newly emerged as drinking water concerns and, in most cases, for which methods are in an early stage of development. Pre-screen testing will be performed to determine whether a listed contaminant occurs in sufficient frequency in the most vulnerable systems or sampling locations to warrant its being included in future Assessment Monitoring or Screening Surveys. Pre-Screen Testing requirements will only apply to a contaminant through additional rulemaking.

EPA will select a limited number of systems (up to 200) to conduct Pre-Screen Testing, through the use of a random number generator, selected from up to 25 most vulnerable systems identified by each State. Up to 200 systems, a smaller sample size than under the Screening Survey or Assessment Monitoring, are considered sufficient for this type of monitoring because monitoring would occur at systems anticipated to have the contaminants, based on the characteristics of the contaminants, system operation, climatic conditions, and land and water resource use. This monitoring is to determine whether the contaminant can be found in any public water system under most likely occurrence conditions specific to the contaminant, and not to determine the extent of occurrence. The portion (e.g., 100 to 150) of these 200 systems may be a different subset of small systems serving 10,000 or fewer persons than those selected for the national representative sample. The reason for this different subset is that States should identify the systems that are representative of the most vulnerable conditions for the contaminants specified for Pre-Screen Testing. These most vulnerable systems may not be those conducting Assessment Monitoring or the Screening Survey. It is possible, though, that some overlap of systems doing Assessment Monitoring and Pre-Screen Testing could occur.

EPA is proposing under Pre-Screen Testing that the selected systems use EPA's designated or approved (as indicated above for the Screening Survey testing of samples from large systems) laboratory or laboratories to conduct this testing. The reason for this proposed testing approach is that the analytical methods expected to be used will have just emerged from research development and other laboratories will not have had the opportunity to use them, which could involve extensive investment in equipment and training. Rather than cause this investment to occur for contaminants which have uncertain occurrence in public water systems, EPA would develop the initial methods sufficiently to test for the contaminants and actually apply them to samples that are most likely to have the contaminants to determine whether further action is warranted and additional method development is needed.

The Pre-Screen Testing option might include (1) contaminants on List 3, for which EPA has limited data on occurrence in drinking water and does not expect to have methods developed by the time this regulation is promulgated, or (2) contaminants not on the CCL that become a concern, such as through the Governors' petition process. The purpose of Pre-Screen Testing would be to determine whether the methods in early development will provide positive results in conditions under which the contaminants are most likely to occur.

Under this approach, once EPA has a method sufficiently developed, it would require States to identify at least 5 and not more than 25 systems which might be most vulnerable to the listed contaminants. States would select these systems from all community and non-transient noncommunity systems serving less than 10,000 persons and systems serving more than 10,000 persons. Selection criteria for these systems include States determination of systems most vulnerable to the specified contaminants and numbers of systems per State based on the number of persons served in each size category of system. The States would send the list of systems, the modification of their State Monitoring Plans for systems serving 10,000 or fewer persons to add the selected systems of this size, and the reasons for their selection, considering the characteristics of the contaminants, precipitation, system operation, and environmental conditions, to the EPA Regional Office. EPA would select up to 200 PWSs nationwide from this pool of State-identified vulnerable systems that must submit samples of the specified contaminants. Some small systems selected may not be part of the national representative sample of 800 systems selected for Assessment Monitoring. Hence, some small systems may only be required to assist with Pre-Screen Testing. States or the EPA Regional Office would provide instructions to the systems for the necessary sampling and subsequent shipping to the EPA laboratory. At this time, EPA believes that the contaminants to which Pre-Screen Testing is likely to apply are those listed in this Preamble in Table 5, List 3, and in the proposed rule at § 141.40(a)(3) Table 1, List 3. Sampling and testing done for Pre-Screen Testing would most likely occur in the later years of the five-year contaminant listing cycle. This approach will assist EPA in refining the methods for these contaminants. If EPA finds any substantial frequency of occurrence, the contaminants could either become part of the Screening Survey or part of Assessment Monitoring in future UCM lists. Since these methods could only be applied under highly controlled test conditions and EPA would be refining the methods, EPA would pay for the shipping and testing of these samples for small monitored systems selected to participate and large systems would pay for the shipping and testing of samples at EPA approved laboratories.

4. Option to the Three-Tiered Approach

The principal option considered in developing this proposal for the type of monitoring required was to require all large systems and small systems included in State Monitoring Plans to monitor for all the contaminants on the UCM Monitoring List, phasing in the contaminants as their respective methods became approved for testing by certified laboratories. This approach had the problem of attempting to use recently developed methods in an extensive monitoring program without

multi-matrix, multi-laboratory testing of the methods. This option would cost $50 million more annually than the proposed three-tiered approach because the high cost of the methods, especially on List 3. Also, the large PWSs with laboratories as well as independent laboratories would have potentially large investments in testing equipment that it might not have made for just a one year monitoring activity, especially if EPA decided not to regulate the particular contaminant. Alternatively, waiting until an analytical method had been thoroughly evaluated and refined for broad use in testing at reasonable cost to all systems would result in few of the contaminants on Lists 2 or 3 ever being monitored for during the five year listing cycle. This would postpone the collection of useful data with which decisions might be made relative to whether to regulate the contaminants.

D. Monitoring Requirements Under the Proposed UCMR

1. Monitoring Frequency

(a) Systems Serving More Than 10,000 Persons

Chemical Contaminants. The number of persons served affects exposure to contaminants and resources necessary to undertake a monitoring activity. The proposed UCMR program requires large systems serving more than 10,000 persons to monitor at each entry point to the distribution system whether or not the system applies treatment, but if it does, then it must monitor after treatment. EPA is also to consider the source of water relative to these monitoring requirements (SDWA section 1445(a)(2)(A)). Over the twelve-month period of monitoring, EPA proposes that systems sample from all entry points representing all sources of water used over the monitoring period. Surface water-supplied systems would monitor each of these points every three months within a twelve-month period and ground water-supplied systems would monitor each of these points two times, six months apart. Today's proposed monitoring frequency for surface water systems is the same as in the current program. For ground water systems, the proposed two samples must be six months apart, increasing this monitoring from one sample under the current program. The reasons for this increase are that while ground water typically moves slowly, one sample is insufficient to characterize water quality at any particular location and would not provide evidence of any changes over a longer period of time. From a statistical standpoint, one sample is not representative and would not allow the data to be used for exposure assessment which uses an average annual rate. At State discretion, this monitoring may be coordinated with compliance monitoring for regulated contaminants. This proposed frequency applied to the average of 6.2 entry points to the distribution system for this system size will provide sufficient data for an adequate statistical analysis of the varied conditions in which these systems are located.

One of the monitoring events for both surface water and ground water systems must occur at the most vulnerable time of year for the PWS. The rationale for this approach is that it provides results representing potential variation in contaminant concentration over a year. This variation of concentration is necessary to evaluate exposure related to contaminant occurrence results. While some systems that perform compliance monitoring on a quarterly basis could collect UCMR samples coincident with their compliance samples and would therefore provide data on the range of variation, other systems may only conduct compliance monitoring once every third year and for one year every five years only, and would therefore have to collect additional samples under the UCMR. While one UCMR sample could be collected coincident with this compliance sample, EPA is proposing for ground water-supplied systems that a second sample be taken six months later to provide the necessary data on seasonal variation over a year to allow consistent exposure assessment to be done with a range of concentrations. Stakeholders supported this option. EPA proposes that all systems serving more than 10,000 persons and a representative sample of systems (about 800) serving 10,000 or fewer persons monitor under this frequency and schedule.

Microbiological Contaminants. For microbiological contaminants, the sampling frequency would be two times, with samples collected each time at two different locations in the distribution system after treatment: a site representative of water in the distribution line received by the general population that the system serves and a site near the end of the distribution line representing the longest residence time. The frequency should capture the most vulnerable time as well as a time six months later to provide an average exposure. Furthermore, precipitation patterns may be a major factor in contaminant occurrence. Thus, frequency should be tailored to times of the year of significant vulnerability because increased seasonal precipitation may carry these contaminants at higher concentrations than other times during the year.

(b) Systems Serving 10,000 or Fewer Persons

EPA proposes that approximately one third of the systems serving 10,000 or fewer persons in the representative sample described below, be sampled each year over a three year period at the frequencies indicated in (a) above to allow a relatively even submission of samples to be managed and tested by the EPA laboratory. Since EPA will pay for the reasonable costs of monitoring (i.e., containers, shipping, and testing) for this representative sample, including Assessment Monitoring, Screening Survey, and Pre-Screen Testing, at its designated laboratories, it would need to be able to manage the number of samples being received at any time.

2. Monitoring Time for Vulnerable Period

Water quality studies and monitoring throughout the United States have clearly shown that contaminant occurrence and/or concentration vary over time, both seasonally as well as from year to year. The seasonality of occurrence, or period of peak concentration of contaminants commonly varies with seasonal changes in the hydrologic cycle in relation to the source of contaminants and their fate and transport characteristics. Particularly for land-applied or land-disposed contaminants, the increased flux of water mobilizes the contaminants and moves them into surface or ground water flow systems. For the most vulnerable of water systems, such as surface waters, unconfined shallow ground water and karst flow systems, for example, contaminant occurrence or peak concentrations typically occur during annual runoff and recharge periods. For much of the eastern United States, east of the Rocky Mountains, many studies have shown the season of greatest vulnerability for contaminant occurrence is the late-spring, early-summer runoff-recharge period, particularly for contaminants such as pesticides and nitrate (e.g., Larson et al., 1997; Barbash and Resek, 1996; Hallberg, 1989a, b). For deeper, more confined ground water systems, defining vulnerable periods is much more difficult. The exact flow path and time of travel are much greater and more complex and are dependent upon many factors unique to a particular well and aquifer setting (e.g., Hallberg and Keeney, 1993). There is no generality

that can be applied to these latter settings.

Because occurrence may vary seasonally, it is important to try to capture these vulnerable periods in a one-time survey of contaminant occurrence such as the UCMR. Statistical studies of sampling strategies in surface water (e.g., Battaglin and Hay, 1996) have shown that incorporating sampling during spring and early summer runoff periods provides a more accurate representation of annual occurrence than random quarterly sampling (that can avoid these months). Ground water studies (e.g., Pinsky et al., 1997) suggest that the more vulnerable ground water settings also show peaks during these periods. The default vulnerable period for sampling for the UCMR has been designated to coincide with this period of peak vulnerability for much of the United States: one sample must be collected during May, June, or July, unless the State has better information to designate another period. Also, for surface waters, three additional samples will be collected throughout the year, and for ground water systems, one additional sample will be collected six months later. This additional sampling would also capture the winter recharge and runoff period that may be more vulnerable in the western coastal regions or warmer southern climates for some contaminants. In the case of some deeper ground water systems, States or systems may have additional knowledge of seasonal vulnerability patterns, in which case the State can designate an alternative period for sampling. EPA requests public comment on the specification of the most vulnerable time for monitoring and how it should be determined.

3. Monitoring Location

In § 141.40(a)(3), today's proposal identifies entry points to the distribution system after any treatment representative of each water source in use over the twelve-month period of Assessment Monitoring as the sampling locations for organic chemicals and the distribution system (a site representative of water in the distribution line received by the general population that the system serves and a site near the end of the distribution line representing the longest residence time) for the microbiological contaminant. Sampling at entry points to the distribution system after any treatment follows the existing regulatory approach for currently regulated contaminants and provides data for exposure assessment.

(a) Chemical Contaminants

The chemicals in this proposed rule are all compounds that would enter a public water supply from the external environment (in contrast to disinfection byproducts, for example) and the proposed monitoring location is at the entry point to the distribution system after treatment, representing all sources of water used over the twelve-month monitoring period to ensure a nationally consistent data set and to provide consistent data for exposure assessment.

(b) Microbiological Contaminants

The sampling locations for microbiological contaminants are different from those for chemical contaminants because the most likely locations to observe microbiological contaminants may be in the distribution system, or, for some, in source water. This is, in part, because of the difficulty of testing to isolate many microbiological contaminants. Two sampling locations are proposed in this regulation. One of the samples would be at the site below a representative entry point to the distribution system that is used for taking total coliform samples; this sample would represent general exposure. The second sample would be near the end of the distribution line that has the longest residence time, representing the extreme exposure of the population at this point in the distribution system. Over the twelve-month period of monitoring, EPA proposes that systems sample at locations representing all sources of water used over the monitoring period, to the extent possible.

Currently, it is not possible to assess whether or not all of the microorganisms (including those on List 3) are likely to be found at any one sampling location, or that one sampling location is the best place to sample for them all. The occurrence information needs differ for different microorganisms. Different parts of the water supply and distribution system may be more likely locations to find particular microbiological contaminants. Therefore, the sampling location for monitoring each microorganism may need to be tailored in the future to the individual organism and the relative ease of finding it in the water of concern.

As a result, for the microbiological contaminants being proposed for Lists 2 and 3 today, EPA has not identified a sampling location or locations. For some of the microbiological contaminants, source water may be the most appropriate sampling location because of the capability of the methods available. In any case, EPA would specify a sampling location at the time a microbiological contaminant would be proposed to become a required monitoring contaminant and ask for public comment at that time.

4. Quality Control Procedures for Sampling and Testing

To assure that the data collected under this proposed regulation are of sufficient quality to meet the requirements for the uses of the resulting data, EPA is proposing the analytical methods and procedures to be used in obtaining the monitoring data in § 141.40(a)(3) and appendix A. Also, additional guidance for quality control and contaminant confirmation are specified in the ''UCMR Analytical Methods and Quality Control Manual.'' This proposed regulation covers quality control steps for all sampling and testing under this program. In addition, the draft guidance manual is available for review and public comment with this proposed regulation. Today's proposed rule would require that all monitored systems follow these methods and procedures in organizing and conducting their unregulated contaminant monitoring and testing. Systems would also have to ensure that the laboratories they use to test samples use the proposed methods and procedures. The specific quality control requirements addressed in § 141.40(a)(3) and appendix A of the proposed rule are: sample collection/preservation; sample transport; sample and sample extract holding time and storage; sample analyses/quality control requirements, including quality control (QC) requirements, calibration, calibration verification, laboratory reagent (method) blank, quality control sample, laboratory duplicates, sample matrix spike (MS) and matrix spike duplicate (MSD), internal standard, surrogate standard, method detection limit determination, minimum reporting level; confirmation; and reporting requirements. EPA believes that requiring the quality control requirements for unregulated contaminant sampling and testing in the proposed rule will enable the Agency to have higher confidence in determining the extent and range of concentrations for the contaminants on the UCM List, since they are not regularly tested for nationally.

5. Monitoring of Routinely Tested Water Quality Parameters

In addition to the contaminants to be monitored, several chemical and physical parameters are important indicators of water quality and may contribute to the likelihood of the

contaminants being found in drinking water. EPA requests public comment on whether it should require the monitoring and reporting of these routinely tested parameters, usually associated with water quality analyses, to provide for a more thorough scientific understanding of the occurrence of unregulated contaminants. It is not EPA's intent to add these chemical and physical parameters to the unregulated contaminant monitoring list, but rather as supplementary data about the sample results which will facilitate their interpretation and use in regulatory decisions. The water quality parameters and their methods for which EPA seeks comment are specified in Table 6, Analytes Approved for Water Quality Parameters.

ANALYTES APPROVED FOR WATER QUALITY PARAMETERS

Analyte	Methodology		
	EPA method	Standard methods [1]	Other
pH	[2]150.1	4500–H^+ B	ASTM D1293–84 [3]
	[2]150.2		ASTM D1293–95 [3]
Turbidity	[4 5]180.1	2130 B [4]	GLI Method 2 [4,6]
Temperature	.....	2550	
Free Residual Chlorine	.....	4500–Cl D	ASTM D 1253–86 [3]
		4500–Cl F	
		4500–Cl G	
		4500–Cl H	
Total Residual Chlorine	.....	4500–Cl D	ASTM D 1253–86 [3]
		4500–Cl E [4]	
		4500–Cl F	
		4500–Cl G [4]	
		4500–Cl I	
Chlorine Dioxide Residual	.....	4500–ClO_2 C	
		4500–ClO_2 D	
		4500–ClO_2 E	
Ozone Residual	.....	4500–O_3 B	

[1] The 18th and 19th Editions of *Standard Methods for the Examination of Water and Wastewater,* 1992 and 1995, American Public Health Association, 1015 Fifteenth St. NW, Washington D.C., 20005.

[2] Methods 150.1 and 150.2 are available from US EPA, NERL, 26 W. Martin Luther King Dr., Cincinnati, Ohio 45268. The identical methods are also in ''Methods for Chemical Analysis of Water and Wastes,'' EPA–600/4–79–020, March 1983, available from the National Technical Information Service (NTIS), U.S. Department of Commerce, 5285 Port Royal Rd., Springfield, Virginia 22161, PB84–128677. (Note: NTIS toll-free number is 800–553–6847.)

[3] *Annual Book of ASTM Standards,* Editions 1994 and 1996, Volumes 11.01, American Society for Testing and Materials, 1015 Fifteenth Street NW, Washington, DC 20005. Version D1293–84 is located in the *Annual Book of ASTM Standards,* 1994, Volumes 11.01. Version D1293–95 is located in the *Annual Book of ASTM Standards,* 1996, Volumes 11.01.

[4] ''Technical Notes on Drinking Water,'' EPA–600/R–94–173, October 1994, Available at NTIS, PB95–104766.

[5] ''Methods for the Determination of Inorganic Substances in Environmental Samples,'' EPA–600/R–93–100, August 1993. Available at NTIS, PB94–121811

[6] GLI Method 2, ''Turbidity,'' November 2, 1992, Great Lakes Instruments Inc., 8855 North 55th St., Milwaukee, Wisconsin 53223.

6. Relation to Compliance Monitoring Requirements

Currently, compliance monitoring for regulated contaminants is coordinated on a three-year cycle, with all public water systems that are required to monitor sampling for specific contaminants at a minimum of one year every three, six, or nine years, depending on the contaminant and its occurrence in the system. The current and proposed Unregulated Contaminant Monitoring Regulations require monitoring during one year every five years. While these may seem out-of-cycle with one another, EPA is proposing to implement UCMR so that public water systems only have to monitor for unregulated contaminants during one twelve-month period every five years, unless the State determines that PWSs should conduct more frequent monitoring. Hence, the compliance monitoring and the UCMR monitoring can be coordinated, to the extent practical, by conducting UCMR monitoring during a coincident year during which compliance monitoring is required. The years within which the unregulated contaminant monitoring are proposed to occur are specified in § 141.40(a)(3), Table 1, column 6.

7. Previous Monitoring of the Contaminants Proposed for the Monitoring List

Some PWSs may have previously monitored for some of the contaminants identified on the proposed UCM List because of local or State concerns about the possibility of those contaminants occurring in drinking water. While this monitoring may have provided adequate results for their purposes, such results may not be comparable to results under this revised UCM regulation because of differences in sampling and analytical protocols, as well as the sampling period. Other factors compound the problem of comparability, such as: (1) Monitoring methods may have improved; (2) water quality changes over time; and (3) today's proposal requires reporting of a net increase of eight additional data elements, which would allow various, consistent comparisons to be made and data to be aggregated nationally based on current science and quality assurance/quality control consistency. Therefore, EPA is not proposing that monitoring results from previous monitoring be used in place of the monitoring under this revised regulation.

8. Regulatory Options Considered for Large Systems

Regulatory options considered for large systems (small systems are addressed under III.F., ''Representative sample of systems serving 10,000 or fewer persons''):

(a) Which Large Systems Should Monitor

Today's proposal at § 141.40(a)(1)(ii) requires all large systems to monitor under the UCMR. The rationale is that the 1996 SDWA amendments only set aside a subset of small systems to

monitor, but did not do so for large systems. Public input resulting from two Stakeholders meetings (Washington, DC; Dec.2–3, 1997; June 3–4, 1998) on this proposed rule supported the option that all large PWSs should monitor.

The only option considered by EPA was a representative sample of large systems. Stakeholders at the two Stakeholders meetings indicated above generally opposed this. Furthermore, the large system representatives at the meeting indicated that to ensure public health protection, they would monitor for all contaminants on any EPA drinking water unregulated contaminant monitoring list.

(b) Monitoring Frequency

Other monitoring frequencies for the UCMR were considered and rejected:

Ground water: Remaining at one time for one year every five years for ground water systems, as under the current program, was rejected because one sample is not considered representative and does not provide sufficient data about a system that can be averaged to develop a national exposure estimate. Four samples every three months were rejected because most ground water does not change that much over shorter periods of time and the results would, therefore, not provide additional useful information cost-effectively.

Surface water: One or two samples in a year were considered, but rejected because these numbers of samples are too few to reflect the seasonal changes in this source of water. Furthermore, seasonal variation is different in different parts of the country. More frequent sampling of surface water is important to capture the duration of time that higher or lower concentrations of contaminants are observed to apply those results in developing an average concentration over a year for conducting exposure assessment.

Compliance Monitoring Schedule: Another option EPA considered is quarterly monitoring for one year every three years for both surface and ground water systems, in complete coincidence with the standard compliance cycles. However, the compliance cycles (with three, six, and nine year components) are not in synchrony with the new UCMR and CCL five-year cycles. This option was rejected because of the implementation difficulties in adjusting a staggered three-year cycle of monitoring to fit into a five-year UCM listing cycle. This approach would result in some systems having one monitoring year and others having two monitoring years. Also, for many ground-water systems not on a quarterly compliance monitoring schedule, a minimum of two samples six months apart is adequate to address variation in concentrations and to provide an average annual concentration for exposure assessment.

(c) Monitoring Location

Some States currently require source water monitoring as a more stringent requirement for chemical contaminants because it requires the testing of samples before any treatment that might reduce concentrations of contaminants. If the objective is exposure assessment (after treatment), source water monitoring would provide information for assessing potential exposure to acute contaminants should treatment fail. Source water monitoring would also provide useful information for treatment and source water protection analysis in future regulatory analyses that would examine a full range of control alternatives including contaminant treatments or controls in the watershed. Source water monitoring would give an indication of concentrations of contaminants that would need to be treated, of a measure of benefits from existing treatment if the occurrence of an unregulated contaminant is linked with a regulated contaminant being treated, and of the types of locations at which watershed management practices might be targeted. However, additional expense would be involved to monitor source water nationally. Other means of obtaining source water quality data exist, such as State or U.S. Geological Survey data for ambient water quality in watersheds and aquifers. At this time, EPA is not requiring source water monitoring because of the existence of other sources of information and the need to focus the available resources of the Agency on exposure after drinking water treatment for the contaminants on List 1.

During rule development, stakeholders suggested that an alternative location for *Aeromonas* and other microbiological contaminants might be the sampling point used for coliforms. The coliform sampling point, however, may not be representative for testing *Aeromonas hydrophilla*, which tends to be found further into distribution systems at low disinfection residual levels. A low chlorine residual provides the environment for the surviving organisms to recolonize and grow. To enable a balanced assessment of *Aeromonas* occurrence, EPA is proposing to require sampling at both a representative site in the distribution system and a site near the end of the distribution line with the longest residence time.

E. Waivers

1. Waivers for Systems Serving More Than 10,000 Persons

Section 1445(a)(2)(F) of SDWA allows a State to obtain a waiver of UCM for specific contaminants if the State demonstrates that the UCM listing criteria do not apply in that State. These criteria are:

(a) The criteria for listing a contaminant in the occurrence priorities list in the CCL; and

(b) Whether an analytical method exists for the contaminant.

When a State makes such a demonstration for a specific contaminant on the monitoring list, EPA is proposing to waive monitoring for that contaminant in that State for large systems (serving more than 10,000 persons) only.

Stakeholders indicated that waiver requirements should be sufficiently stringent to obtain the most representative national data possible, including non-detections of contaminants on the UCM List. Since only the UCM listing criteria in (a) are relevant to a State-specific waiver and based on stakeholders' concern that the waiver be narrowly applied, EPA is proposing that this waiver be applied only where the State can demonstrate that the contaminant has not been used, applied, stored, released, or disposed of, or does not occur through natural processes (such as growth in a system or air deposition) in the State for the past fifteen years. Source Water Assessments provided for under sections 1453 and 1428(b) of SDWA may be used as the basis for these waivers if the Assessments specifically address the contaminant(s) on the UCM List for which a waiver is sought. Table 7, Uses and Environmental Sources of Contaminants Proposed for the Monitoring List, presents the uses and sources of the contaminants being proposed for the Unregulated Contaminant Monitoring List. A State would need to apply for a waiver from monitoring for specific contaminants and receive EPA approval to waive the monitoring.

While some chemical contaminants may only be discharged into the environment in regional or local areas, microbiological contaminants may be ubiquitous. However, previous monitoring + results over time may provide information useful to waiver determinations for microbiological contaminants.

2. Waivers for Small Systems in State Plans

EPA is proposing that no waivers be granted for small systems serving 10,000 or fewer persons in State Plans for the national representative sample. Stakeholders also supported this position. The systems in State Plans will be statistically selected with the assumption that all systems in a particular size category and water source type have an equal probability of being selected. Non-detections are just as important as detections of contaminants for national analysis. Waiving contaminants to be monitored in certain States not expecting to have such contaminants biases the representative sample toward detections. Selecting the small systems to be included in the State Monitoring Plans for the representative sample through a statistical process effectively waives ninety-seven percent of the systems from the proposed monitoring requirements (based on using 99 percent confidence level with three percent allowable error). Therefore, EPA rejected waivers for systems serving fewer than 10,000 persons because this option would be contradictory to obtaining a scientifically sound data set that provides the basis for a scientific statistical analysis.

TABLE 7.—USES AND ENVIRONMENTAL SOURCES OF CONTAMINANTS PROPOSED FOR THE MONITORING LIST

Contaminant name	CASRN	Use or environmental source
Proposed Chemical Contaminants		
1,2-diphenylhydrazine	122–66–7	Used in the production of benzidine and anti-inflammatory drugs.
2-methyl-phenol	95–48–7	Released in automobile and diesel exhaust, coal tar and petroleum refining, and wood pulping.
2,4-dichlorophenol	120–83–2	Chemical intermediate in herbicide production.
2,4-dinitrophenol	51–28–5	Released from mines, metal, petroleum, and dye plants.
2,4-dinitrotoluene	121–14–2	Used in the production of isocyanate, dyes, and explosives.
2,4,6-trichlorophenol	88–06–2	By-product of fossil fuel burning, used as bactericide and wood/glue preservative.
2,6-dinitrotoluene	606–20–2	Used as mixture with 2,4-DNT (similar uses).
Acetochlor	34256–82–1	Herbicide used with cabbage, citrus, coffee, and corn crops.
Alachlor ESA	.....	Degradation product of alachlor, an herbicide used with corn, bean, peanut, and soybean crops to control grasses and weeds.
DCPA di-acid degradate.	2136–79–0	Degradation product of DCPA, an herbicide used on grasses and weeds with fruit and vegetable crops.
DCPA mono-acid degradate.	887–54–7	Degradation product of DCPA, an herbicide used on grasses and weeds with fruit and vegetable crops.
DDE	72–55–9	Degradation product of DDT, a general insecticide.
Diazinon	333–41–5	Insecticide used with rice, fruit, vineyards, and corn crops.
Disulfoton	298–04–4	Insecticide used with cereal, cotton, tobacco, and potato crops.
Diuron	330–54–1	Herbicide used on grasses in orchards and wheat crops.
EPTC	759–94–4	Herbicide used on annual grasses, weeds, in potatoes and corn.
Fonofos	944–22–9	Soil insecticide used on worms and centipedes.
Linuron	330–55–2	Herbicide used with corn, soybean, cotton, and wheat crops.
Molinate	2212–67–1	Selective herbicide used with rice, controls watergrass.
MTBE	1634–04–4	Octane booster in unleaded gasoline.
Nitrobenzene	98–95–3	Used in the production of aniline, which is used to make dyes, herbicides, and drugs.
Prometon	1610–18–0	Herbicide used on annual and perennial weeds and grasses.
Terbacil	5902–51–2	Herbicide used with sugarcane, alfalfa, and some fruit, etc.
Terbufos	13071–79–9	Insecticide used with corn, sugar beet, and grain sorghum crops.
Microbiological Contaminants		
Adenoviruses	N/A	Fecal sources; hand to mouth transmission.
Aeromonas hydrophila	N/A	Present in all freshwater and brackish water.
Cyanobacteria (Blue-green algae), other freshwater algae and their toxins.	N/A	Blooms in surface water bodies; produce toxins.
Caliciviruses	N/A	Contaminated food and water, raw shellfish.
Coxsackieviruses	N/A	Fecal sources; hand to mouth transmission.
Echoviruses	N/A	Fecal sources; hand to mouth transmission.
Helicobacter pylori	N/A	Fecal sources; hand to mouth transmission.
Microsporidia	N/A	Occurs in rivers, ponds, lakes, and unfiltered water.

F. Representative Sample of Systems Serving 10,000 Persons or Fewer

As required by section 1445(a)(2) (A) and (C), the regulation proposes that only a representative sample of public water systems serving 10,000 or fewer persons would have to monitor. As previously explained, only community and non-transient non-community systems would be required to monitor for unregulated contaminants under this proposal. Therefore, the representative sample would include only community and non-transient non-community systems serving 10,000 or fewer persons. The representative sample would need to be of sufficient size to gather the necessary information on occurrence of unregulated contaminants to determine whether or not to regulate them, while not burdening every water system with the expense of monitoring. The number of systems selected within each of three size ranges of small systems would be based on the proportion of the State's population served by systems in that size range. (An example appears below under (5)(a), State Plans for the Representative Sample.) The small systems in the national representative sample would be selected using a statistical random

sampling process. This process would utilize a random number generator to choose a statistically determined number of systems in each State and Tribe having ''treatment as a State'' status, considering the number of systems served by water source type (e.g., ground or surface water) and then system size category (i.e., 25 to 500 persons, 501 to 3,300, and 3,301 to 10,000) within the water source type. EPA is proposing that the national representative sample become the basis for the State Monitoring Plan in each state. The use of this statistical approach is designed to take into account different system sizes, types of systems, the source of supply, contaminants likely to be found, and geographic location in each State. EPA believes that the end product of this statistical process applied to selecting systems to monitor must be data that are sufficient to answer questions about occurrence of contaminants on a national scale for use in exposure assessments and technology evaluations of alternative treatments at a PWS and in its watershed. These data should also be sufficient to answer questions at a broad multi-state scale, such as systems classified by size or source of water, particularly when combined with data for the 2,774 large systems.

Under this proposal, small system monitoring would be too sparse to answer questions about occurrence at the scale of a single State. The number of systems required for evaluation of occurrences in a single state are far greater than, and thus more costly than, those needed for the broader national evaluations required under the Act to determine whether or not to regulate a contaminant.

1. System Size

Based on statistics reported in the Safe Drinking Water Information System (SDWIS), the following numbers of systems (1997 data) by size will approximate the universe from which a representative sample of systems serving 10,000 or fewer people will be taken for this proposed national representative sample plan. These system size categories are proposed because they are used in other statutory and regulatory characterizations of systems, and are applied under the existing rule for unregulated contaminant monitoring for the scheduling of sampling. The relevant system and population information (1997) for systems serving 10,000 or fewer persons is:

Number of people served in PWS size range	Number of PWSs in size range	Population served nationally	
		CWS	NTNCWS
25 to 500	48,100	5,249,577	2,379,034
501 to 3,300	14,126	19,918,106	2,724,728
3,301 to 10,000	3,410	25,236,059	401,579
Total	65,636	50,403,742	5,505,341

Considering all community water systems and NTNCWS that do not purchase their water supplies, 65,636 PWSs are in the size range for small systems as defined in section 1445. Systems purchasing water from other systems are proposed to be excluded from this rule because they could bias results by potentially causing double counting of contaminant occurrence. EPA seeks public comment on whether systems purchasing water from other systems should be included in the representative sample, particularly for monitoring at the location of the longest residence time within a water distribution system.

2. System Type

(a) Public Water System Monitoring

Under today's proposal, all public water systems serving 10,000 or fewer persons, except transient non-community systems, would be considered for monitoring, but only a subset would be selected for the national representative sample. Public water systems owned and/or operated on Tribal lands by Tribes would be treated as a separate group for the representative sample, rather than counting them within the State boundaries as systems in a particular State. EPA is proposing that the size of the representative sample and the specific systems required to monitor will be identified by EPA and sent to the States for review and inclusion in State Monitoring Plans (discussed below).

(b) Non-Transient Non-Community Water Systems

Non-Transient Non-Community Water Systems (NTNCWS) represent schools, hospitals and other facilities in communities that serve the resident population but have their own water supply systems. Approximately 20,000 systems of this type exist in the United States. Today's proposed regulation at § 141.40(a)(1)(iii) would include NTNCWS as a separate type of water system to be included in the representative sample for monitoring. Typically, these systems are closely associated with a local resident population and may be a significant source of water consumed by that population over a lifetime. Indeed, these systems may be a major source of water consumed by individuals resident in a community. The selection of NTNCWS will use the same statistical process as for community water systems (CWS), with systems grouped within a State by water source type and size category. The reason for a separate category for NTNCWS is to avoid double-counting of population served when doing exposure assessments of both small CWS and NTNCWS, while allowing weighting of lifetime water consumption by system type.

(c) Transient Non-Community Systems

Transient non-community water systems represent systems providing drinking water to transient populations such as at a restaurant in a rural location or a highway roadside rest area. About 97,000 of these systems exist in the United States; their location and type are highly variable. It would be difficult to extrapolate exposure from monitoring results, given the very short-term nature of the systems' use by individuals who may not be in the area for more than a few hours or days. Because of problems with implementation and cost for sampling such a large and highly variable set of typically very small systems, EPA is proposing to exclude transient systems from all unregulated contaminant monitoring requirements. In this regard, this proposal is consistent with the current UCM program. EPA seeks public comment on excluding transient non-community systems from State Monitoring Plans for the representative sample of systems to be monitored.

3. Geographic Location Within the State

SDWA section 1445 specifies that State plans should consider ''geographic location'' when selecting a representative sample. This is accomplished at the broadest level by selecting systems from each State. Yet within a State, the sources of water may not be evenly distributed across that State, especially surface waters. Cities transfer water across watershed boundaries, or move water from one State to another. To best represent water being consumed by individuals, EPA proposes to define ''geographic location'' in the representative sample proposed today as the location of the source of water, rather than as an even distribution of points across the State. For example, if 40 percent of the persons in a State obtain their water from one water source type (e.g., surface water), 40 percent of the systems selected as representative should be from that source type, even if this results in points unevenly distributed across the State. This distribution should be accommodated by the population-weighted statistical sample selection.

4. Likelihood of Finding Contaminants

Section 1445(a)(2)(A) requires that the UCMR program take into account the likelihood of finding a contaminant in establishing variable monitoring requirements for systems. This proposal is intended to allow the UCMR program to focus on monitoring for contaminants that are expected to be found nationally or among several regions of the United States. Therefore, the expectation of finding the contaminants nationally is fundamental to the approach of the representative sample and its statistical method of random selection. However, the ''likelihood of finding contaminants'' factor is accommodated by the step-wise three-tiered approach of Pre-Screen Testing, Screening Survey and Assessment Monitoring.

5. State Plans for the Representative Sample

As discussed above, section 1445 (a)(2)(C) allows States to develop State Monitoring Plans (also referred to as ''State Plans'') to assess the occurrence of unregulated contaminants for small systems in the State. EPA believes that the development of State Plans is affected by two other considerations: (i) The State plans must fit together into a national representative sample so that it is, in fact, nationally ''representative,'' and (ii) EPA will pay for the reasonable costs of testing and laboratory analysis necessary to carry out monitoring under State Plans, pursuant to section 1445(a)(2)(C)(ii).

(a) Representative State Plans

To have representativeness at the national level while at the same time allowing each State to develop a ''State Plan,'' the testing for which will be funded by EPA, the Agency proposes the following approach: Based on a statistical random selection process applied to all CWS and NTNCWS nationally using the average population served by systems and water source type (surface or ground water to ensure geographic coverage) within service-size category (25–500, 501–3,300, 3,301–10,000 persons), EPA will select at least twice as many CWS and NTNCWS as required for the national representative sample to allow for replacements of systems, if necessary. EPA will use a random number generator to select these systems. These systems will be divided into an ''initial plan'' list and a ''replacement list.'' The representative sample will be allocated on a State basis, considering the number of persons served by each service size category and water source type. The ''initial plan'' list of systems will identify those systems tentatively selected by EPA for each State. For the State plan, the State can adopt the EPA-selected systems on the ''initial plan'' as its plan, or review the list to determine which systems should be removed from the list because of such factors as closure, merger, or water purchase arrangement and submit a modified plan. The State would then select the next water system(s) from the ''replacement list'' to replace the system(s) removed, thus creating a ''modified plan.'' The State, in either case, would inform the EPA Regional Office of the State's choice of plan (i.e., ''initial'' plan or ''modified'' plan) along with reasons for removing and replacing systems on the ''initial plan'' within 60 days of receiving the ''initial plan.'' If EPA has not received a response from the State, the EPA Regional Office will consult with the State before adopting the ''initial plan'' for that State as its State Plan. The State Plan would include a process for the State to inform the public water systems of their selection for the representative sample once the State has accepted the initial plan or prepared the modified plan and informed the EPA Regional Office of this action. The EPA Regional Office would inform systems if the State chooses not to accept or modify the initial plan. This approach ensures a nationally representative set of systems and allows a State flexibility to modify EPA's ''initial plan'' with minimal burden. EPA would develop and provide initial plans to States and Tribes in the first half of year 2000 to allow sufficient time for State/Tribal review and modification, and for informing systems selected for the State Plans.

Statistical Approach. Under today's proposal, the representative sample of small public water systems would be composed of a subset of systems which, in the aggregate, represent the public water systems of the three small system size categories within the United States. Within a State, public water systems would need to be selected so that the proportion of persons served by the systems sampled is as close as possible to the proportion of persons served by that system size category within that State. The portion of the national representative sample within a State's boundaries would become that State's Monitoring Plan, after review and possible adjustment by the State. The number of systems to be sampled in each State would be proportional to the percentage of persons served by public water systems of that size in the United States who reside within that State.

For the small systems considered, a representative sample size of approximately 800 systems would provide a confidence level of 99 percent with an allowable error of plus or minus 1 percent. This number of systems is statistically derived to allow population weighting for exposure assessment, with results being useful for analysis of contaminant occurrence at small systems, as well as a national analysis of all system sizes. EPA would allocate systems to each State, water source type and system size using an average number of persons served divided into the population served by systems serving 10,000 or fewer persons in each system size category. This approach ensures that each State has systems allocated to it for its State Plan. To accomplish this distribution of systems to each State, EPA would add to the statistically derived number for the representative sample a sufficient number of systems to allow this allocation for each State to have a plan that would then fit into the national representative sample. EPA would also add systems for NTNCWSs to be represented as a distinct group for the purposes of exposure assessment. Once monitored, the results of the representative sample of small systems would then be combined with large system results in an overall national analysis of contaminant occurrence in systems. EPA believes that this sample size would provide an adequate level of confidence, considering size, type

(community and non-transient non-community water systems), and location. EPA also believes that this approach provides sufficient information for the decision processes drawing on UCMR monitoring data for systems serving 10,000 or fewer persons, while keeping testing costs at a manageable level for the contaminants in List 1 for Assessment Monitoring. This number of systems should be sufficient to evaluate statistically whether a contaminant occurs in a specified number of systems, such as 2 or 3 percent. This number of systems, confidence level and allowable error will enable EPA to: (1) Evaluate the statistical significance of contaminant occurrence with low frequency and (2) compute the percent of systems for occurrence nationally, combining the results of both small and large systems.

Further rationale for using a small estimate of the number of systems and small allowable error (confidence interval) in calculating the number of systems to be included in the representative sample is provided in the monitoring results from previous unregulated contaminant monitoring under the existing program. EPA has results from over 28,000 systems from the unregulated contaminant monitoring activities of 1988 to 1992 (the first round of unregulated contaminant monitoring under the current program) that indicate that of the 34 contaminants required to be monitored at that time, 30 had occurrence at less that 2 percent of systems and, of those, 27 had occurrence at less than 1 percent of systems. Ten of these contaminants were selected for the Contaminant Candidate List ''Regulatory Priorities'' (see Table 2) and all of these contaminants had occurrence at less than 2 percent of systems and eight, at less than 1 percent. Of the eight occurring at less than one percent of systems, four have health effects values within the concentration range of contaminant occurrence (Bromomethane (a pesticide), 1,3-dichloropropene (a pesticide), Hexachlorobutadiene (a solvent), and 1,1,2,2-Tetrachloroethane (a solvent)), and consequently may be considered for future regulation. These data point up the need to focus at the low end of occurrence. It also points to using a small allowable error (confidence interval) to ensure that based on statistics, EPA comes to the right decision on whether or not to regulate these contaminants, once the Agency has compared the results to health effects data.

EPA also proposes that State Monitoring Plans include a representative sample of systems for Screening Survey monitoring of List 2 contaminants. The number of these systems, selected through the same statistical process from the systems used to conduct Assessment Monitoring, would be smaller (perhaps about 300) because the purpose of the Screening Survey is to test for contaminant presence in systems rather than testing for concentrations in an established percentage (such as 2 or 3 percent) of systems, as is the case for Assessment Monitoring. For the Screening Survey, if any low percent (e.g., 0.5 percent) of systems have an occurrence of a contaminant, then the contaminant would be considered to occur at a level that would indicate that it should be included in the next round of Assessment Monitoring.

If, based on prior information (e.g., from a Screening Survey or Pre-screen Testing), EPA determines that a more likely percent of systems with occurrence, another statistical confidence level and/or allowable error can provide scientifically defensible monitoring results, then EPA may apply a different likely percent of systems, confidence level, and/or allowable error to determine a smaller representative sample size. The statistical approach for specifying the number of systems by water source type (ground water, surface water or ground water under the direct influence of surface water) is as follows.

The number of systems, n, required in the representative sample is determined by the allowable error (±d) around the estimate for p, the proportion of systems which exceed a criteria (e.g., detection level) of interest. Based on the binomial distribution in statistics, the number of systems n which must be sampled for a likely proportion p of systems with contaminant occurrence within the allowable error d with confidence (1 − a) is:

$$n = \frac{z^2_{(a/2)} p(1-p)}{d^2} \qquad (1)$$

The number of systems to be sampled, n, does not depend on the total number of systems available. The number from the standard normal distribution, z, is obtained from a table of the standard normal distribution, representing a collection of data following a ''bell-shaped curve'' which have a (standardized) mean of zero and standard deviation of one. The significance level, a, is the chance of the statistical interval of interest not containing the true value of the number being estimated, which, in this case, is the percent of systems having occurrence of the contaminants of concern on the UCM List. The true value for the percentage of systems having occurrence of the contaminants of concern can only be known if all systems are sampled, which is not proposed since section 1445(a)(2)(A) requires that only a representative subset of small systems be required to monitor for unregulated contaminants. Using this equation (1), the matrix below presents the required sample sizes for several values of allowable error and confidence level. For the national representative sample, an allowable error of ±.01 at a confidence level of 99% and a likely proportion of systems with contaminant occurrence of 1% was chosen. The possibilities for sample size, confidence level and allowable error considered in developing this approach are:

SAMPLE SIZES FROM A UNIVERSE OF 65,600 SYSTEMS BASED ON—

Confidence level (1 − a)	d, Allowable error			
	.03	.02	.01	.005
90 percent	30	67	266	1,065
95 percent	42	95	380	1,521
99 percent	73	165	659	2,636

EPA believes that a representative sample size of 659 systems to be sufficient to draw conclusions about contaminant occurrence for small systems, based on 99% (.99) confidence level, 1% (.01) allowable error (confidence interval), and target percent of systems having occurrence of 1%. EPA chose a confidence level of 99% because it wanted to be that certain that the true proportion was included in its sample results. A 5% chance that the window of error did not include the true proportion was considered too unacceptable, given the amount of money invested in monitoring and regulatory decisions. Based on the monitoring program, a 1% risk (100–99% confidence) that EPA missed the target was more acceptable.

A small allowable error (narrow confidence interval), such as ±1% (±0.01), is important for evaluating the expected low percentages of systems having occurrence of any of the contaminants because EPA wants to be able to determine when the results of monitoring show that the percent of systems is distinguishable from zero or some other small value close to zero. Determining this outcome will help EPA decide which contaminants should receive primary focus for possible regulation after the results are evaluated with health effects data.

To further consider the implications of the table above, suppose that after sampling these 659 systems, the proportion p which equaled or exceeded a detection level was 4% (0.04). The estimate of the true (unknown) proportion would be 0.04 ±0.01, or 3 to 5 percent. This interval has a 99% likelihood of containing the true proportion of systems having an occurrence of the contaminant of concern. There is a 1% (0.01) chance (a) that the true proportion is outside this estimated interval. A larger allowable error, d, (e.g., 3%) results in a wider estimate window. Knowing only that the proportion is somewhere within a window of 6% (e.g., between 1 and 7 percent) was too large a window of error if the percent of systems having occurrence of the UCM List contaminants is less than 3 percent, which may be possible based on information from previous unregulated contaminant monitoring. In such a situation, it would be difficult to determine whether the percent of systems with occurrence was significantly different than zero or some small number.

Additionally, EPA would increase the representative sample size to 710 to 720 (711 used for calculation purposes here) to ensure that each State received an allocation of small systems, using an average population served (approximately 70,770) divided into the population of each source type and size category within each State, for the representative sample. (The example average population of 70,770 is close to the average population served by large systems.) EPA would also add approximately 80 to 90 systems to the sample size to address occurrence at non-transient noncommunity water systems (using the same average population to allocate systems), with the total number of systems then equaling 790 to 810, rounded to 800. This comparable population allocation facilitates assigning the number of systems to each State in the representative sample.

EPA invites public comment on the use of different confidence levels and/or allowable error (confidence interval) to determine the representative sample size, and the allocation of systems by state, water source type and system size using an average population served should occur, and if so, why and how. EPA also invites public comment on whether and how to allocate proportionally more systems in the representative sample to the size category of 25 to 500 persons served, which represents only two percent of the total population served by community water systems, but includes 64 percent of all community water systems. Since these smaller systems vary considerably in location and access to a water source, allocating more systems to this category may improve EPA's understanding of contaminant occurrence in them.

Initially, EPA had identified 1,800 to 2,000 systems as the sample size for the representative sample. EPA first focused on this sample size considering that the percent of contaminant occurrence could be any value. In particular, requiring a narrow confidence interval around the occurrence level of 50 percent leads to this larger sample size. Upon further reflection and analysis of the results of earlier unregulated contaminant monitoring, it was realized that EPA's primary concern is accurate estimation of low occurrence levels. As a result, the sample size was based on requiring a narrow confidence interval (0.01) with a high confidence (0.99) for occurrences as low as 1 percent (p=0.01). This leads to a sample size of 659 systems. As noted above, EPA proposes to increase the sample size to 800 to incorporate non-transient noncommunity water systems and to have at least 2 sampled systems per State. If higher percentages of systems with contaminant occurrence are observed, the sample size of 800 systems provides a wider confidence interval. For example, if 30 percent of systems having occurrence of a contaminant, this sample size results in a confidence interval of about ±4 percent. Even though the confidence interval is relatively wide, the statistics clearly demonstrate a high rate of occurrence, and if health data indicated major acute or chronic effects for this contaminant, EPA would likely decide to regulate it. With small percentages of systems having occurrence (e.g., 1 to 2%), EPA believes that the statistical approach of using a 99% confidence level and 1% confidence interval will provide sufficient results for decisionmaking for the representative sample of small systems. Furthermore, when the results are combined with those of the 2,774 large systems and evaluated using a 99% confidence level and assuming 1 to 2 percent of systems have occurrence, a confidence interval of 0.4% results, allowing EPA to distinguish very low percentages of systems with occurrence from a zero percent of systems. This circumstance may be important for contaminants with important health effects when deciding whether to regulate them. For the example mentioned above, if 30 percent of systems have occurrence for a contaminant, when the results are combined with those of large systems, the resulting confidence interval is ±2 percent.

The representative sample of 711 systems will be disaggregated to the State level, and further disaggregated by water source type (ground water or surface water) and system size (the three size categories of 25–500, 501–3,300, and 3,301–10,000 persons). The disaggregation by State, water source type and system size is described in the following example.

Example. To determine the number of PWSs to be randomly selected for unregulated contaminant monitoring as part of the national representative sample, the following figures are used as the starting point and are approximations for the purposes of example only:

U.S. population: 265,000,000

U.S. population served by small PWSs serving ≤ 10,000 persons: 50,000,000

U.S. population served by small PWSs divided by 711 (the statistically derived number of 659 systems plus 52 systems for the national representative sample to allow allocation of systems to each State, water source and size category, to the extent possible),

50,000,000/711 = 70,300 persons, the average number or persons that each system selected will represent in the allocation to each state in the representative sample (i.e., the number that EPA would divide into the population served by small systems serving 10,000 or fewer persons to determine the number of systems of that size that must be monitored in the State)

State A population served by small PWSs serving 10,000 or fewer persons equals 1,251,340 persons, which divided by 70,300 persons from the previous step equals 17 systems, the number of systems serving 10,000 or fewer persons that must be included in the State Plan.

State A population served by small PWSs supplied by surface water (SW) or ground water under the direct influence of surface water (GWUDI) equals 449,920 persons.

State A population served by small PWSs supplied by ground water (GW) equals 801,420 persons.

For each water source type (surface or ground water), the population served by small systems is further divided into the size category. The next step is to divide the population in each size category by 70,300 to obtain the number of systems in that size category for the water source type that would be in the State Plan (identified

below as ''State Plan Systems Allocation''). For each water source type, the example results for State A are:

SW/GWUDI SYSTEMS IN STATE A

System size (persons served)	Population served by size category	State plan systems allocation
10,000 to 3,301	281,200 persons	4 systems.
3,300 to 501	154,660 persons	2 systems.
500 or fewer	14,060 persons	0 systems.
Total		6 systems.

GW SYSTEMS IN STATE A

System size (persons served)	Population served by size category	State plan systems allocation
10,000 to 3,301	421,800 persons	6 systems.
3,300 to 500	239,020 persons	3 systems.
500 or fewer	140,600 persons	2 systems.
Total		11 systems.

The total of 6 surface water and 11 ground water systems equals 17 systems, the number in State A's Plan. The replacement list of systems would also be developed and provided at this level of detail.

EPA has prepared a background document titled ''National Representative Sample and State Plans for Unregulated Contaminant Monitoring for Public Water Systems Serving 10,000 or Fewer Persons'' to describe in more detail this selection process presented above and its relation to the State Plans. EPA requests public comment on this proposal and its supporting background document and other approaches that EPA could consider. The background document is available today by calling the EPA Safe Drinking Water Hotline at (800) 426–4791, or by viewing on EPA's Internet Homepage for the Office of Ground Water and Drinking Water (www.epa.gov/ogwdw). Public comments on the background document should be sent to EPA with the heading ''Representative Sample Background Document Comments'' along with comments on this proposed rule.

(b) Systems Selected for Pre-Screen Testing

For Pre-Screen Testing, States would need to specify from 5 up to 25 systems as being representative of systems most vulnerable to the contaminants on List 3. EPA proposes to determine the number of systems to be selected in any State based on the number of persons served by community and non-transient noncommunity water systems in a State. For the systems in this selection that serve 10,000 or fewer persons, EPA proposes that the States modify their State Plans at the time of their selection and notify the EPA Regional Office of their addition to those Plans.

(c) Tribal Water Systems as a Separate Group

Public water systems serving less than 10,000 persons that are located in Indian country would be treated as a single, separate group for the representative sample. The random selection process described above weights systems within water source and size category by population served; as a result, a PWS in Indian country would have the same probability of being selected as any other water system. Because no State has jurisdiction over such systems, EPA will consult with the appropriate tribal government concerning whether any initially selected system should be replaced due to merger, closure, or purchase of water from another system. The resulting set of systems will be the ''state plan'' for Indian country.

(d) ''Index'' Systems

EPA generally has less information about systems serving 10,000 or fewer persons. This lack of information on these systems and their operation affects EPA's ability to tailor regulations to systems of this size. To provide an improved understanding of small systems, EPA proposes to select up to 30 small public water systems as ''index'' sites and conduct Assessment Monitoring at these systems during each of the five years for which the UCM List and national representative sample are established. Index sites would be selected from the systems designated in State Monitoring Plans using a random number generator. EPA would pay for this monitoring, including provision of sample equipment, shipment of samples, testing, and support help to collect samples by sending a field technician to each index system to obtain the samples. The purpose of this sampling would be to provide quality assurance in collection of the samples for the thirty systems, to provide information on the temporal variability that may be encountered during a monitoring cycle, and enhanced understanding of these systems so that their treatment in future regulations would be more reflective of the conditions under which they operate. Owners/operators of index sites would be required to provide data on well and screen depth (if applicable), wells or intakes used at the time of sampling and pumping rates for each well or intake at the time of sampling for unregulated contaminants for use in characterizing the UCM results without monitoring the entire representative sample with this same frequency and schedule. EPA or its representative would collect further information on precipitation, land use and other environmental factors (e.g., soils and geology) to provide the Agency with information on other conditions potentially affecting drinking water quality of small systems. This ''index'' site monitoring will facilitate extrapolation of Assessment Monitoring

results nationally for systems of this size.

A description of the selection process for the ''index'' systems using a random number generator and their monitoring is presented in the background document, noted above, titled ''National Representative Sample and State Plans for Unregulated Contaminant Monitoring for Public Water Systems Serving 10,000 or Fewer Persons.'' EPA invites public comment on this ''index'' system aspect of the proposed UCM program described here.

(e) Other State Data

Any additional sites sampled by States should not be combined with those of the EPA approved State Plan for the purpose of computing national estimates of contamination. While providing useful information for protecting the health of persons using drinking water from these sites, these additional sites would bias the results of the nationally representative set of systems if included with those systems selected using the stated national criteria. However, if the State desired to report the results of such monitoring, EPA could receive the data through the Safe Drinking Water Information System (SDWIS) for input to the NCOD. EPA plans to develop acceptance criteria to allow such data to be placed in the NCOD.

6. Regulatory Options

With respect to the size of the national representative sample, EPA needs to balance the number of systems required for validity with the cost of paying for the testing. EPA believes that the proposed approach balances the number of systems to be tested with the cost and also balances a national representative sample with the allowance for State plans. The proposed approach also relieves States from having to develop the statistical design and specify the systems to be monitored.

EPA has studied and rejected a second option of a regulation that would specify the conditions and criteria under which the States could select the systems in their State. Such an option might have included criteria such as specific numbers of systems for the State Plan by water source type and system size category, operation of a random number generator, and the list of systems to be used. From a scientific perspective, this would not result in a consistent representative sample because implementation of the criteria would likely vary from State to State. The value of the resulting estimates would thus be jeopardized. This would also be more burdensome for the States.

A third option which EPA also studied and rejected is to weight monitoring based on prior knowledge of contaminant use or occurrence, system operation, or other locational information. The concern with this approach is the larger number of systems required to provide the results. If any prior knowledge of the proportion of conditions in each of several categories is known, allotting unequal numbers of samples to each category (or ''strata'') can provide the same overall level of confidence and allowable error while requiring fewer samples for that strata. This is called stratified random sampling. For example, suppose VOCs are known to largely occur in ground waters and not surface waters. This information can be used to apportion samples unequally between ground water and surface water systems such that the overall proportion of contamination can be estimated with fewer samples for those contaminants. Fewer samples would be needed in surface systems where contamination is low because the proportion of contamination does not change much.

Other contaminants such as certain pesticides may occur more frequently in surface waters. Using the same design as for VOCs would result in very poor estimates of the proportion contaminated because few samples would be taken from the conditions where pesticide contamination occurs. So ''tailoring'' designs to reduce the number of systems needed would result in a different set of systems to be sampled for each contaminant group. Some systems would sample for some contaminants, but not others. The total number of systems involved in a sampling design stratified for different contaminants would be greater than for a simpler design, such as the proposal. At this point, not enough is known about some contaminants to adequately stratify a sample. Reactions to stratified designs have been largely negative at Stakeholder meetings. Therefore, one set of representative systems for all contaminants is proposed here, even though it is not ''optimal'' for any single contaminant.

Additionally, some pesticides (e.g. diazinon) on Lists 1 and 2 have been observed to exceed acute human toxicity levels. Although the Agency is proposing a nationwide random survey of small CWS, the Agency notes that such a monitoring program may underestimate pesticide occurrence because of the non-random spatial nature of pesticide use patterns and its relationship to population.

An alternative approach that could address this potential underestimation would be to stratify sampling based on contaminants or contaminant groups (e.g., pesticides, volatile organic compounds and microorganisms) and to target sampling to areas of high pesticide use or expected contaminant occurrence considering available information. Sampling could then be targeted to randomly selected systems in the expected use or most vulnerable areas. Separate statistical designs would need to be developed for each contaminant or contaminant group. Such an approach has the downside, however, of eliminating the capability of having State and size based stratifications for small system sampling. Nevertheless, between the targeted ''upper bound'' type samples and the more geographically representative large system samples, this approach would provide a more sensitive indicator of the potential threat posed by a particular contaminant.

Public comment is specifically requested on this alternative approach to sample site selection.

Another issue with respect to sampling relates to the timing of quarterly samples for surface water supplied systems. Quarterly sampling, even with a targeted vulnerable quarter as proposed, may not capture periods of peak pesticide occurrence in every case and, therefore, may underestimate exposure. An alternative to quarterly sampling for surface water supplied systems would be to sample monthly in the three most vulnerable months (e.g., May, June and July, as in today's proposal) and in one month that is representative of the rest of the year. While this approach might provide a more reliable picture of pesticide occurrence, it may be incompatible with peak occurrence of other contaminants (such as volatile organic compounds) during other months of the year. Furthermore, events of an extremely ephemeral nature may not be of public health significance. EPA requests public comment on the adequacy of the quarterly monitoring approach suggested in this rule and the efficacy of alternative approaches considering representativeness, implementability and cost. Comment is also requested on all aspects relating to the timing and frequency of monitoring, system selection, and targeted monitoring relative to contaminants.

G. Reporting of Monitoring Results

Under the current unregulated contaminant monitoring program, reporting requirements exist at 40 CFR

141.35. Today's proposed regulation replaces those requirements to make the reported results more useful for sound scientific analyses of the occurrence of unregulated contaminants.

1. PWS and State Reporting to EPA

Unregulated contaminant monitoring data is one of four types of data that will potentially be reported to the National Drinking Water Contaminant Occurrence Data Base (NCOD) as required by section 1445(g). The other types of data that may be included in the NCOD are: (1) Regulated Contaminant Occurrence Data below the maximum contaminant level (MCL) but above the minimum reporting level (MRL) (a regulation may be developed to obtain this data during 1999); (2) source water monitoring data; and (3) other data from special studies and research. Since these data will come from varying sources, they may have different reporting requirements. The PWS data from unregulated contaminant monitoring may have the smallest number of data elements to be reported because of the greater level of control over the quality of the data through the laboratory certification programs and the monitoring and quality control requirements proposed today. The uses of UCM program data that support the need for the data elements proposed today are: (a) Identification contaminants for the Contaminant Candidate List, (b) selection of contaminants for future regulation, and (c) development of new national primary drinking water regulations for the selected contaminants.

Under the current UCM program, the State Reporting Guidance for Unregulated Contaminant Monitoring, EPA–812–B–94–001, August 1994, identifies the 12 data elements in Table 8 that should be reported by PWSs to States, and by States to EPA, for each unregulated contaminant sample test result.

TABLE 8.—CURRENT UCMR REPORTING REQUIREMENTS

Data Element	Definition
Public Water System (PWS) Identification Number.	The code used to identify each PWS. The code begins with the standard two-character postal State abbreviation; the remaining seven characters are unique to each PWS.
Sampling Point Identification Number.	An ID number established by the State, or, at the State's discretion, the PWS, and unique to the system for a sampling point. Within each PWS, each sampling point must receive a unique ID number, including entry points to the distribution system as well as other locations within the public water system, such as wellhead, intake, or within the distribution system. The same Sampling Point Identification Number must be used consistently throughout the history of unregulated contaminant monitoring to represent the sampling point. NOTE: This data element is proposed to be combined under ''Water system facility identification number.''
Sampling Point (Station) Type.	The water type represented by the sample. The valid choices are: (a) Finished/treated water. Note: expanded in this proposal to include: (i) Finished Water from treatment system. (ii) Entry Point to the distribution system after treatment. (iii) Within the Distribution System. (iv) End of the Distribution line with longest residence time. (v) Household/drinking water tap. (vi) Unknown. (vii) Other. (b) Raw/untreated water.
Water Source Type	The source type represented by the sample. The valid choices are: (a) Surface water or purchased surface water. NOTE: Expanded in this proposal to include: (i) Stream, and (ii) Lake Reservoir. (b) Ground water under the direct influence of surface water or purchased Ground water under the direct influence of surface water. (c) Ground water or purchased ground water.
Sample Identification Number.	A unique identifier assigned by the PWS for each sample.
Sample Collection Date	The date the sample is collected.
Contaminant	The unregulated contaminant for which the sample is being analyzed.
Analytical Results—Sign	An alphanumeric value indicating whether the sample analysis result was: (a) (<) ''less than'' means the contaminant was not detected or was detected at a level ''less than'' the MRL. (b) (=) ''equal to'' means the contaminant was detected at a level ''equal to'' the value reported in ''Analytical Result—Value.''
Analytical Result—Value	The actual numeric value of the analysis for chemical and microbiological results.
Analytical Result—Unit of Measure.	The unit of measurement for the analytical results reported. (e.g., micrograms per liter, ''μg/L; colony-forming units per milliliter, CFU/mL, etc.)
Analytical Method Number ...	The method number of the analytical method used.
Composite	NOTE: ''Composite'' is on the current UCM Data Element list but is proposed to be deleted from the future UCM Data Element List because compositing is not consistent with contaminant occurrence monitoring.

EPA engaged in an extensive process of stakeholder and technical review when developing the NCOD to identify information reporting requirements that allow data from different sources to be adequately evaluated, compared, and interpreted. The NCOD information requirements process has identified additional data elements that must be considered for UCM reporting with unregulated contaminant sample test results. These data elements are especially important because many of the contaminants may not be routinely tested for and will need sample test data quality indicators to assist in interpreting the results. These additional data elements for the unregulated contaminants, and the reasons EPA is proposing to add them to the reporting requirements, are explained briefly below. EPA is requesting public comment on these additional reporting requirements

identified in Table 7, Proposed Data Elements for the UCMR.

Proposed data element	Definition	Reason for reporting
Public Water System Facility Identification Number—Source Intake/Well, Treatment Plant and Sampling Station.	An identification number established by the State, or, at the State's discretion, the PWS, and unique to the system for an intake for each source of water, a treatment plan and a sampling station. Within each PWS, each intake, treatment plant and sampling point must receive a unique identification number, including, for intake, surface water intake, ground water well or wellfield centroid; and, for sampling station, entry points to the distribution system, wellhead (or wellfield), intake, or locations within the distribution system. The same identification number must be used consistently through the history of unregulated contaminant monitoring to represent the facility.	Identify source water, treatment plant and sampling location for use in evaluating contaminant source controls in regulation development. The source intake/well identification number can be related to latitude and longitude for use in geographic analysis of land use, soils, geology and precipitation for alternative treatment and control analysis. Treatment plant identification number can be related to treatment information for that plant to use in analysis of alternative treatments. Sampling Station identification number will allow the sample test result to be consistently associated with the same sample location over time for trend analysis.
Public Water System Facility Type ..	The facility type represented by the water system facility identification number: (i) Intake (for surface water sources); (ii) Well or wellfield (for ground water sources); (iii) Treatment Plant; (iv) Sampling Station; (v) Entry Point to Distribution System; (vi) Reservoir; (vii) Booster Pumping Station; and (viii) Unknown.	Indicates the type of facility associated with the water system facility identification number to allow appropriate analysis of the results of each sample being taken and tested for alternative treatment analysis.
Latitude of the Public Water System Facility for Source Intake/Well and Treatment Plant.	The east-west coordinate of each source intake, well or wellfield centroid, and treatment plant associated with a sample expressed as decimal degrees.	Used to indicate location of the facility in the watershed to allow analysis of alternative treatments and in relation to the population being served.
Longitude of the Public Water System Facility for Source Intake/Well and Treatment Plant.	The north-south coordinate of each source intake, well or wellfield centroid, and treatment plant associated with a sample expressed as decimal degrees.	Do.
Sample Type	The type of sample collected. Permitted values include: (a) Reference Sample—calibration or QC samples. (b) Field Sample—sample collected and submitted for analysis under this rule. (c) Confirmation Sample—a sample analyzed to confirm an initial contaminant detection. (d) Field Blank—reagent water or other blank matrix placed in a sample container in the laboratory and treated as a sample in all respects, including shipment to the sampling site, storage, preservation, and all analytical procedures. (e) Equipment Blank—samples generated by processing reagent water through the equipment using the same procedures used in the field to demonstrate that the equipment is free from contamination. (f) Split Sample—sample divided into sub-samples submitted to different laboratories or analysts for analysis.	Indicates reference field, confirmation, etc. sample type to ensure that the sample test result is used for the appropriate analysis (e.g., contaminant concentration trends, sample test performance, etc.).
Detection Level	''Detection level'' is referring to the detection limit applied to both the method and equipment. Detection limits are the lowest concentration of a target contaminant that a given method or piece of equipment can reliably ascertain and report as greater than zero (i.e., Instrument Detection Limit, Method Detection Limit, Estimated Detection Limit).	Indicates lowest quantifiable measurement level applied through the method to the sample to allow comparison with other sample test results.
Detection Level Unit of Measure	The unit of measure to express the concentration, count, or other value of a contaminant level for the detection level reported. (e.g., μg/L, colony forming units/mL (CFU/mL), etc.)	Indicates the reporting unit for the detection limit.

Proposed data element	Definition	Reason for reporting
Analytical Precision	For purposes of the UCMR, Analytical Precision is defined as the relative percent difference (RPD) between spiked matrix duplicates. The RPD for the spiked matrix duplicates analyzed in the same batch of samples as the analytical result being reported is to be entered in this field. Precision is calculated as Relative Percent Difference (RPD) between spiked matrix duplicates using, $RPD=[(X_1-X_2)/\{(X_1+X_2)/2\}]\times 100$	Indicates variability among laboratory results as measured by testing replicate field or duplicate spiked samples, and is a key measure of sample test performance.
Analytical Accuracy	For purposes of the UCMR accuracy is defined as the percent recovery of the contaminant in the spiked matrix sample analyzed in the same analytical batch as the sample result being reported and calculated using; %recovery=[(amt. found in Sp—amt. found in sample)/amt. spiked]×100.	Indicates whether test results are within a group of measurements corresponding to the true value of the results, and is a key measure of sample test performance.
Presence/Absence	*Chemicals:* Presence—a response was produced by the analysis (i.e., greater than or equal to the MDL but less than the minimum reporting level)/ Absence—no response was produced by the analysis (i.e., less than the MDL) *Microbiologicals:* Presence—indicates a response was produced by the analysis/Absence—indicates no response was produced by the analysis	Chemicals: Indicates results that do not have a quantifiable value. Microbiologicals: Allows measure under conditions and for microorganisms that are not able to be counted.

Note that ''composite'' is proposed to be deleted from the original set of data elements since the proposed rule would not allow compositing. Since this program is designed to measure actual occurrence of contaminants, compositing (the combining of samples from several sampling points of a water system) would dilute concentrations of contaminants to be measured. Stakeholders supported deletion of compositing as contrary to the objective of UCM.

Also note that ''Public Water System Facility source intake identification number'' is currently required to be reported under existing reporting requirements for the Safe Drinking Water Information System (SDWIS). This proposal would continue this requirement and expand it to include treatment plant and sampling station, but the definition makes specific that it cannot change over time. EPA is not requiring through today's proposal the reporting of treatment data (treatment objectives and processes) since these data are already required to be reported by January 1, 2000, for all systems. (Safe Drinking Water Information System FACT SHEET, Revised Inventory Reporting Requirements, June 1998). Additionally, the source of water in this case is associated with each sample so that the data can be used in evaluating contaminant source controls in a watershed or over an aquifer. An alternative would be to report the ''River Reach'' or ''Aquifer'' for each sample, but that approach would require data to be reported that is not currently required, or not readily available, in the case of aquifers.

The rationale for proposing the inclusion of these data elements is that EPA needs the detailed information concerning the sample test, location, and treatment that would allow the results to be used in making a determination of whether or not to regulate the contaminant. The specific reasons are identified in Table 9. To avoid duplicative and costly resampling efforts, EPA believes that systems should obtain and report the most complete information the first time a sample is tested.

The information requirements process for development of the NCOD identified technical questions that need to be answered in the regulatory process that the UCMR is to support. These data elements are associated with these questions. While the list of data elements would increase by eight (from 12 to 20) if all the data elements are included in today's proposed UCMR (as compared to the existing UCMR), reporting them the first time precludes the need to obtain the information through another process. Because the 1996 SDWA Amendments expanded the determinations and types of analyses that need to be conducted to develop a rule, including these data elements is responsive to the new regulatory environment in which drinking water regulations must be developed.

Because reporting of locational and treatment data may be one time or infrequent, these new data elements will not be a major burden for a PWS. The anticipated reporting frequency for the data elements is as follows:

TABLE 9.—ANTICIPATED REPORTING FREQUENCY FOR DATA ELEMENTS

Current and proposed data element	Proposed frequency of reporting
Public Water System Identification Number	With each sample.
Public Water System Facility (PWSF) Identification Number-Source Intake/Well, Treatment Plant, and Sampling Station.	With each sample.
Public Water System Facility Type	One time, associated with PWSF Identification Number.
Sampling Station Type	One time, associated with PWSF Identification Number for Sampling Station.
Water Source Type	One time, associated with PWSF Identification Number for Source Intake.
Sample Identification Number	With each sample.
Sample Collection Date	With each sample.

TABLE 9.—ANTICIPATED REPORTING FREQUENCY FOR DATA ELEMENTS—Continued

Current and proposed data element	Proposed frequency of reporting
Latitude of Water System Facility for Source Intake/Well and Treatment Plant.	One time, associated with PWSF Identification Number for Source Intake/Well and Treatment Plant.
Longitude of Water System Facility for Source Intake/Well and Treatment Plant.	One time, associated with PWSF Identification Number for Source Intake/Well and Treatment Plant.
Contaminant	With each sample (from the laboratory testing).
Analytical Results—Sign	With each sample (from the laboratory testing).
Analytical Result—Value	With each sample (from the laboratory testing).
Unit of Measure	With each sample (from the laboratory testing).
Analytical Method Number	With each sample (from the laboratory testing).
Sample Type	With each sample.
Detection Level	With each sample (from the laboratory testing).
Detection Level Unit of Measure	With each sample (from the laboratory testing).
Analytical Precision	With each sample (from the laboratory testing).
Analytical Accuracy	With each sample (from the laboratory testing).
Presence/Absence	With each sample (from the laboratory testing).

Three of the additional nine proposed data elements would be one-time or infrequently updated information: Water system facility type, Latitude and Longitude. These three data elements do not need to be reported with each sample once they have been reported by the PWS and State to SDWIS. Water system facility identification number-source intake/well is already required to be reported to SDWIS under other authority. Five of the remaining elements will be supplied by the laboratory and the ninth is the sample type identifier (e.g., field sample, confirmation sample, spiked sample, etc.).

Additionally, EPA proposes to require owners/operators of index sites that are part of State Plans for the national representative sample to provide data concerning well casing and screen depths and pumping rates at each well or intake at the time of monitoring. The reason for this reporting is that it will allow EPA to tailor regulations to systems serving 10,000 or fewer persons by relating sample test results to conditions that affect capture of contaminants by ground water supplied systems.

2. Regulatory Options

Following are the four regulatory options EPA considered for data elements in the proposed UCMR.

(a) Use the existing set of twelve UCMR data elements in the new rule. EPA studied and rejected this option because it is not responsive to the current regulatory needs. With the current data elements, it is not possible to evaluate the performance parameters of the test result that should be compared to other test results from other laboratories or PWSs, at least when considering and reporting detection levels. The locational information not in the existing data elements is important in conducting exposure assessments and evaluating alternative treatment and control measures. Similarly, associating treatment plant information with the sample test results is critical in considering treatment and control alternatives.

(b) Add only the sample analysis data elements. This option would improve the ability to evaluate and compare the results among themselves, but would not facilitate exposure, technical, and implementation considerations being addressed in this effort. The drawback of this option for contaminants of concern is that additional information would need to be obtained through special studies or surveys, which can be expensive. This would slow the regulatory process for a contaminant that needs to be regulated.

(c) Add the sample analysis and locational data elements. This option would allow better evaluation and comparison of test results and facilitate exposure assessments, but not allow treatment evaluations to be done.

(d) Use all the data elements identified above. EPA has selected this option because it would allow better evaluation and comparison of test results, as well as facilitate exposure assessments and regulation development. The capability of associating treatment information with sample test results through the Public Water System Facility Identification Number would be included in the reporting, with the expectation that no or only minor treatment studies targeted to the specific contaminants would need to be conducted. The locational information (Latitude and Longitude) associated with the Public Water System Facility Identification Number for intakes and wells (or wellfield centroids) and treatment plants would enable analysis of alternatives for treatment and control measures at the facility or in the watershed for contaminant best management practices. This option is fully responsive to the current regulatory environment.

Options (a) through (c) were rejected because they would require EPA to return to the PWS to obtain additional information necessary to meet the objectives of unregulated contaminant monitoring. This second action would increase the burden of EPA and the PWS. Attempting to associate information with a sample after the original monitoring event does not ensure that the correct data is properly obtained and associated with the sample, jeopardizing any subsequent analyses.

3. Timing of Reporting

EPA proposes in this rule in § 141.35(c) that PWSs report to States or the primacy agency the monitoring results within ten days of their receipt. This proposal is consistent with compliance reporting requirements under § 141.31. EPA also proposes that States report electronically to the National Drinking Water Contaminant Occurrence Database (NCOD) (§ 142.15(c)(3)) to be maintained by EPA by the quarter following their receipt of the data from PWSs.

4. Method of Reporting

SDWA section 1445 (a)(2)(D) states that each PWS that conducts monitoring of unregulated contaminants must provide the results of the monitoring to the primary enforcement authority for the system. Today's proposed rule requires electronic reporting by PWSs to States (§ 141.35(b)) or the primary enforcement authority, and by States to EPA (§ 142.15(c)(3)). The proposal does allow the primary enforcement authority to specify another method for reporting by a PWS. Stakeholders

supported this approach. Note that EPA will pay for the testing and laboratory analysis of samples for small systems in State Monitoring Plans. Since EPA intends to establish electronic recordkeeping of the results from systems in State Plans, electronic reporting for these systems would be done through the assistance of EPA. A State might consider specifying another method for reporting when a system serving over 10,000 persons has not developed the capability to report electronic results. However, most laboratories have this capability and could probably provide this service for the PWS.

With respect to electronic reporting by States to EPA, the Agency has determined that ninety percent of the States now have the current unregulated contaminant monitoring data in electronic format and could provide it in that form. Since most States rely on electronic reporting to manage the significant amount of data they possess, EPA proposes that all States report electronically. EPA will consult with States that do not have this capability to determine other options for obtaining electronic reports of their data to comply with this proposed requirement.

5. Public Notification of Availability of Results

SDWA section 1445 (a)(2)(E) requires notification of the results of the UCMR program to be made available to persons served by the system. The results of UCMR monitoring for CWSs will be reported through the Consumer Confidence Reports (CCR), pursuant to SDWA section 1414(c)(4)(B) and the final regulation recently published in the **Federal Register** and, for non-community systems, through the revised public notification rule to be proposed in mid-1999. Failure to monitor for unregulated contaminants required through the UCMR will also be reportable under the public notification rule.

The results that would be reported through the CCR and public notification rules should be based on the same monitoring data that the States would receive under the UCMR and would be required to be reported to the NCOD. Information in the NCOD will be available to the public.

6. Voluntary Reporting

EPA also requests public comment on establishing a voluntary reporting program for contaminants that may be monitored and tested for because of local concerns but for which EPA is not requiring monitoring or reporting as part of this rule. The reporting requirements for the contaminants on the proposed Monitoring List would not apply to voluntarily reported data for other unregulated contaminants. However, monitoring data related to contaminants of local or State concern and not on today's monitoring list could be voluntarily reported to the NCOD to assist in determining whether they may be a national problem and should be considered for establishing health-based standards (maximum contaminant levels) or advisories. EPA may consider providing reporting guidance for voluntary reporting of such results. EPA would be interested in integrating local and/or State data at the national level to see whether perceived local concerns have broader national occurrence implications. EPA would comply with the Paperwork Reduction Act in collecting such data.

By August 1999, EPA expects to have the capability to accept such additional data and store it in the NCOD. The data in the NCOD database will be accessible to the public. The voluntarily reported data on contaminants (chemical, microbiological and radiological) would assist EPA in determining which contaminants it should be concerned about nationally for developing the Contaminant Candidate Lists and UCMR Lists in the future. Comments on this proposed voluntary reporting program, separately identified as comments on ''Voluntary Reporting of Other Unregulated Contaminants,'' may be submitted along with comments on today's proposed regulation.

IV. Implementation of Today's Proposal

The implementation of today's proposed regulation has several aspects that will be addressed here in approximate chronological order. These steps include the following: setting an effective date; program delegation; establishing the laboratory testing program; continued research on methods development; determining the national representative sample and associated State plans; conducting the sampling, analysis, and reporting; and modifying the monitoring list. The proposed revised UCMR program is described in Figure 1, ''Proposed Unregulated Contaminant Monitoring Approach. Additionally, a critical part of this program is funding for the testing of the national representative sample of systems serving 10,000 or fewer persons.

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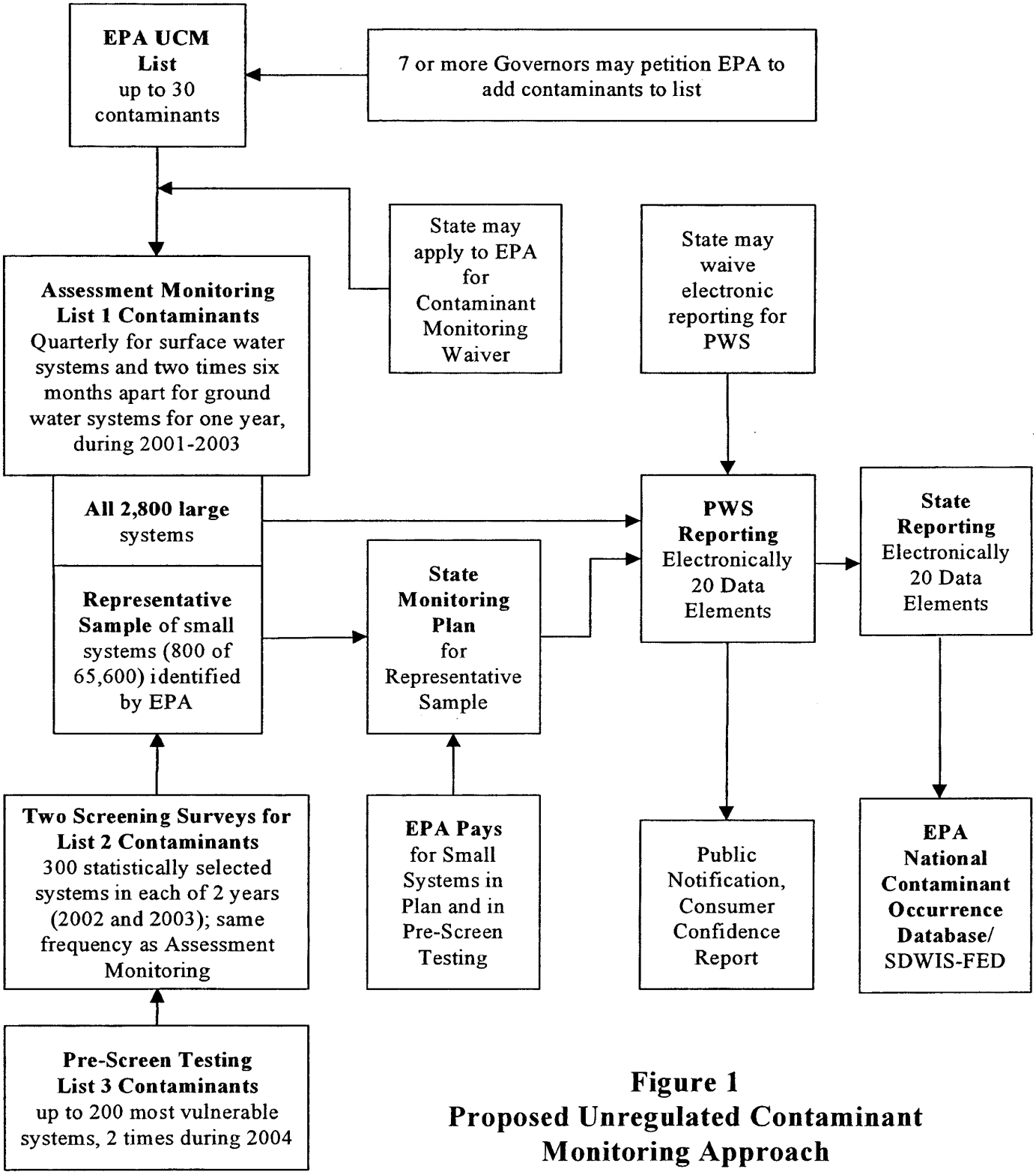

Figure 1
Proposed Unregulated Contaminant Monitoring Approach

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A. Setting an Effective Date

For eleven of the contaminants on the UCMR Monitoring List proposed to be tested under Assessment Monitoring, EPA already has methods for testing that are expected to give reliable and reproducible results. These methods are widely used with the exception of methods for *Aeromonas*, a microbiological contaminant, in the drinking water industry but not necessarily for these contaminants. Testing for these contaminants will, along with other information, help EPA determine whether or not to regulate these contaminants. Results of the UCMR testing should also be available for revising the CCL before the next CCL must be issued (February 2003). Therefore, EPA proposes that the effective date of the UCMR program be January 1, 2001, sixteen months after the expected promulgation of the final rule. This timeframe, sixteen months, is necessary for States to make changes in their programs to allow the testing to occur and for States to review the initial State Monitoring Plans and inform small PWSs of their selection and of their responsibilities for monitoring. EPA will also use this time to set up its laboratory program for testing samples from small systems. Because the contaminants in List 1 to be tested under Assessment Monitoring will have analytical methods currently in use (several methods for compliance monitoring), this timeframe of 16 months (in combination with the assistance provided by the methods and quality control manual) should be sufficient to allow laboratories serving large systems (those providing drinking water to more than 10,000 persons) adequate time to organize and implement the testing program. EPA is taking steps to ensure that methods and quality control manual and contaminant occurrence reporting guidances are in place to allow the program to be implemented at that time. The requirements for small systems and sampling and quality control procedures for all systems are specified in § 141.40(a)(3), (4) and (5) and Appendix A. Figure 2 describes the proposed timing for the implementation of the major components and activities supporting the UCMR program.

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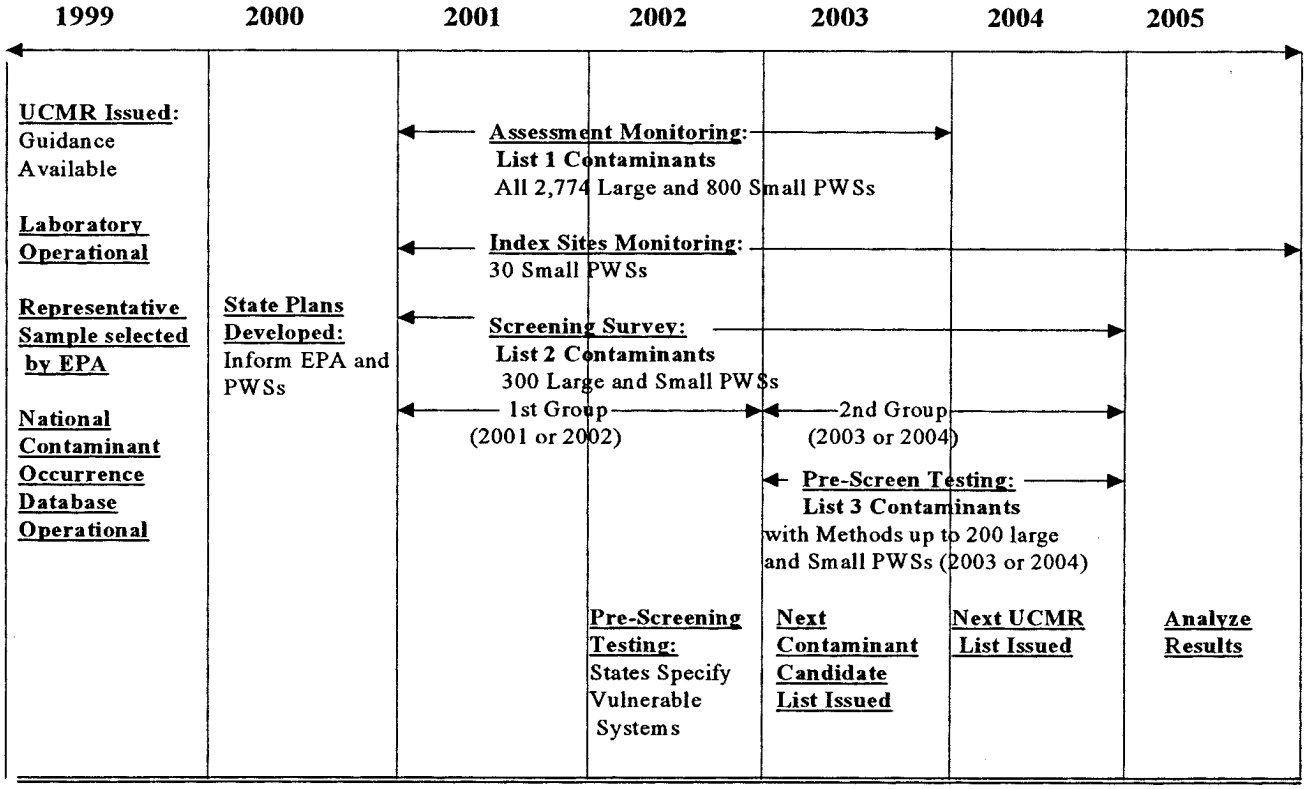

Figure 2
Proposed Implementation Timeline of UCMR and Related Activities

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B. Primacy Program Revision

The UCMR program has historically been a requirement for State assumption of primary enforcement authority (''primacy'') for the PWS program under SDWA. Primacy allows a State to be the primary agency for administering and enforcing the PWS program in that State. EPA believes that today's revision of the UCMR, when final, should also become part of a States's primacy program. Therefore, each State that currently has PWS primacy will need to address any changes in the existing State authorities necessary to implement this revised rule. The procedure for revision of State programs is found in 40 CFR 142.12.

C. Implementation in Indian Country

This proposed rule has several provisions applying to State governments; this preamble section is intended to clarify how these provisions would apply in Indian country and to request comment on EPA's proposed approach. First, with respect to state plans, as explained earlier in the section on designation of the representative sample, EPA intends to include all small systems in Indian country together as a single, separate group. Just as small systems in each State will be selected at random for participation in the UCMR, small systems located

anywhere in Indian country will be selected at random. Instead of notifying the State and allowing the State to select alternative systems due to closure, merger or water purchase, however, EPA will contact the appropriate tribal governments to make sure that the selected systems have not closed or merged and do not buy water from another system. The resulting group of systems will be the ''state plan'' for all Indian country. The appropriate EPA regional office will notify the selected systems of their UCMR responsibilities.

Under the proposal, states can also participate in the UCMR by specifying ''vulnerable'' systems for pre-screen testing, notifying systems of their participation in the monitoring and instructions for testing in lieu of EPA, and petitioning EPA for a monitoring waiver for large systems. EPA requests comment on whether, and to what extent, Indian tribal governments should or want to have these authorities as well. EPA could treat Indian tribes as states for purposes of implementing these authorities under two separate approaches. First, because UCMR is part of the primacy program, tribes that have treatment as a state status for PWS primacy would be able to carry out these authorities for selected systems under their jurisdiction. Second, EPA could amend the treatment as a state regulations to allow tribes to have treatment as a state status for purposes of carrying out these provisions of the UCMR. Under this second approach, a tribe would not need to demonstrate that it qualified for treatment as a state for any other purpose (for example, primacy or grant administration) other than the UCMR provisions. Because these authorities are so limited, EPA doubts that Indian tribes would want to seek treatment as a state for these limited purposes and, as a result, believes option 1 to be preferable. However, if there is significant interest in obtaining this authority apart from primacy, EPA may in the final rule amend the treatment as a state regulations (40 CFR 142.72 and 40 CFR 142.78) to obtain treatment as a state status solely for the purpose of implementing these specific UCMR authorities.

Finally, the statute allows the governors of seven or more states to petition EPA to add contaminants to the UCMR list. EPA requests comment on whether Indian tribal governments should or desire to have the same authority. EPA believes that for this authority, a tribe that has treatment as a state status for either primacy or PWS grant administration should be deemed to have treatment as a state for purposes of petitioning EPA to add a contaminant to the UCMR list. Since the petitioning role is not system specific, a tribe that has demonstrated the capability to administer a PWS grant should also have the capability to assess whether they believe a contaminant should be added to the monitoring list. Therefore, EPA does not expect to make a regulatory amendment to the treatment as a state regulations in order to allow Indian tribal governments to petition EPA to add contaminants to the UCMR list. If EPA decides to treat tribes as states for these purposes, EPA would revise the rule language to provide that seven governors or tribal leaders could petition EPA to add contaminants to the list.

D. Establishing the Laboratory Testing Program

To ensure that sound data are provided for future regulatory decisions, EPA will take three steps in establishing the laboratory testing program: (1) Identifying the methods that must be used to test for the unregulated contaminants under Assessment Monitoring, (2) establishing the laboratory testing program for systems serving more than 10,000 persons, and (3) establishing the laboratory testing program for systems serving 10,000 or fewer persons.

1. Analytical Methods for the Testing Program

The methods to be required are identified in § 141.40(a)(3), Table 1 of the proposed regulation, List 1, Assessment Monitoring. Additional sampling and quality control requirements are identified in § 141.40(a)(4) and (5) and Appendix A. EPA has prepared a draft sampling guidance, ''UCMR Guidance for Operators of Systems Serving 10,000 or Fewer Persons,'' which provides additional details on sampling requirements. EPA has also produced a draft methods and quality control manual, ''Unregulated Contaminant Monitoring Regulation Analytical Methods and Quality Control Manual,'' that provides detailed guidance regarding specific method requirements related to the unregulated contaminants on the Monitoring List. This manual provides additional guidance covering quality control steps for all testing under this program, as described above in ''Monitoring Requirement under the Proposed UCMR.'' These two draft guidance documents are available for review and public comment with this proposed regulation. Commenters can access the documents through Docket Number W–98–02, through the EPA Safe Drinking Water Hotline at 800–426–4791, or through the EPA Office of Ground Water and Drinking Water Internet Homepage. Today's proposed rule would require that systems serving more than 10,000 persons follow the methods and procedures in § 141.40(a)(3), (4), and (5). The draft methods and quality control manual referred to above would provide guidance to these large systems serving more that 10,000 persons in organizing and conducting their unregulated contaminant testing program. EPA will require laboratories that test samples of systems serving 10,000 or fewer persons to also comply with 40 CFR 141.40(a)(3), (4) and (5) and Appendix A.

2. Testing Program for Systems Serving More Than 10,000 Persons

Implementation of today's proposal would only cause Assessment Monitoring of List 1 contaminants. These contaminants have analytical methods currently in use and EPA plans to conduct reviews of laboratories' procedures for unregulated contaminant testing for Assessment Monitoring because of the high data quality requirements of this program.

EPA anticipates that contaminants proposed to be on List 2 for the Screening Survey may be monitored during the five-year listing cycle through separate rulemaking. Under today's proposal, EPA would statistically select approximately 150 large systems that would provide samples to laboratories that EPA has approved to conduct this testing. EPA's approval of a limited number of laboratories to do this testing would include, but may not be limited to, its evaluation of: (1) Laboratory capability, (2) test results of blind samples, (3) experience with similar methodologies, (4) willingness to accept samples from any public water system required to monitor under this regulation, and (5) provision of the testing for List 2 (and List 3) contaminants at a reasonable price to large systems required to do monitoring under this regulation. Large systems selected to be part of the Screening Survey (or Pre-Screen Testing for List 3 contaminants) will be notified by the State or primacy agency prior to the dates established for sample collection and submission for contaminants on List 2. EPA requests public comment on options for the testing of List 2 contaminants of (a) sending samples to laboratories that the Agency has approved for testing List 2 and List 3 contaminants or (b) EPA providing performance criteria for the testing of List 2 and List 3 contaminants

which these systems could use to decide to test at a laboratory of their choosing.

3. Testing Program for Systems Serving 10,000 or Fewer Persons

Based on a competitive selection process, EPA would designate one to five laboratories to conduct the testing for systems serving 10,000 or fewer persons. Under today's proposal, the selected laboratories would test Assessment Monitoring samples from the approximately 800 small systems included in State Monitoring Plans, along with the samples from the index systems, over the five-year cycle for the program. The laboratories would need to be able to provide all necessary sampling equipment to these systems, provide complete yet easy-to-follow instructions on use of the sampling equipment, coordinate the shipping of the equipment and receipt of the returned equipment and samples, provide appropriate sample preservation and testing, and report results to the public water systems, States, and EPA electronically following the reporting requirements of these proposed regulations. EPA will review and evaluate laboratory procedures to ensure that sufficient testing and data quality standards are met. The requirements proposed today and their supporting draft ''UCMR Analytical Methods and Quality Control Manual'' would also apply to these laboratories as conditions of the planned testing contracts that EPA expects to establish with the selected laboratories.

Once future rulemaking occur to implement the Screening Survey for List 2 contaminants, approximately 150 statistically selected small systems would provide samples during two to three years in the middle of the 5-year cycle. The same laboratories testing List 1 contaminants would then also test for List 2 contaminants.

E. Continued Analytical Methods Development

For the contaminants on the UCM Lists 2 and 3, EPA still needs to establish methods that can be widely used at reasonable cost. EPA is setting up a research program through its Office of Research and Development to identify additional methods. As methods are developed, EPA would publish for public comment an amendment to this regulation for the contaminants identified previously for the Screening Survey and Pre-Screen Testing to specify the analytical methods, sampling location, minimum reporting levels applicable to these contaminants, and sampling dates.

F. Determining the National Representative Sample and State Monitoring Plans

For systems serving 10,000 or fewer persons, EPA may only require a representative sample of such systems to monitor for unregulated contaminants in drinking water. Prior to the effective date of the program and not later than six months prior to the start of the Assessment Monitoring program, EPA would identify, through a statistical selection process using a random number generator, up to 800 systems (from a total of approximately 65,600 community and non-transient non-community water systems) serving 10,000 or fewer persons that must monitor and up to 800 alternate systems if replacements are needed. The selection process would allocate systems to each State, giving approximately equal probability to each person's water system being selected within water source type (ground water or surface water) and system size category (25 to 500 persons served, 501 to 3,300 persons, and 3,301 to 10,000 persons). Based on the appropriate number of systems in each State, Tribe or territory (identified by water source type and system size category), EPA would send these first system selections (i.e., the initial State Plan) and the replacement list of alternate systems to each State, Tribe, and territory, as appropriate.

The State, Tribe or territory would have 60 days to review the initial plan and (1) accept the initial plan as its State Monitoring Plan and inform the Regional Administrator of its acceptance of the initial plan along with its process for informing the selected systems of their responsibilities for monitoring; (2) propose deletions from and alternates to the initial plan as its State plan, including the reasons for the changes and the process it would use to inform the systems of their responsibilities, and inform the Regional Administrator of its proposal; or (3) take no action within 60 days allowing the Regional Administrator, after consulting with the State, to specify the final State plan. If a State, Tribe, or territory chooses option (1) or option (2) above, it must submit a description of the process it would use for informing the systems selected of their responsibilities for monitoring, when the process would be implemented, and any necessary modifications to the timing of sampling for each to coordinate with compliance monitoring at the State's discretion. However, a State that chooses no action in the initial plan may still choose to notify selected systems and provide the necessary information. States may also choose an alternate most vulnerable time for systems to sample if different from May through July, as proposed in the rule.

The PWSs which EPA selects through the use of a random number generator to be index sites would also be specified in the initial plan that EPA gives to the State. The replacement list for the initial plan would also be applied for the index sites that needed to be replaced. EPA expects to provide contractor support through the laboratories selected to conduct the testing for unregulated contaminants to collect, ship and test the samples and gather the additional data to support these ''index'' systems. EPA's procedure for selecting these index sites is described in a technical document titled ''National Representative Sample and State Plans for Unregulated Contaminant Monitoring at Public Water Systems Serving 10,000 or Fewer Persons.'' This document can be accessed through Docket Number W–98–02, through the EPA Safe Drinking Water Hotline at 800–426–4791, or through the EPA Office of Ground Water and Drinking Water Internet Homepage at www.epa.gov/ogwdw. EPA requests comment on the selection procedure detailed above and in this document.

While monitoring for List 2 contaminants under the Screening Survey is not proposed by today's action and would not be implemented until a new rulemaking activated these contaminants for monitoring, EPA proposes that EPA provide with the State Plans a list of systems that would conduct monitoring for List 2 contaminants. EPA believes that the methods for the contaminants on List 2 will be ready for use during the first three years of the five year listing cycle and that the Screening Survey will be implemented during that time. EPA would select approximately 300 systems (approximately 150 large and 150 small systems) using a random number generator to specify them at the same time that EPA prepares the initial plan described above. If this survey list was not sent at the same time of the initial State Plan, then EPA would have to provide a second list to each State to implement the Screening Survey. EPA believes that the preparation of a second list is unnecessary. The EPA specification and State review of the Survey list can occur at the same time.

For Pre-Screen Testing, States would need to specify from 5 up to 25 systems as being representative of systems most vulnerable to the contaminants on List 3. The number of systems to be selected in any State would be determined by

EPA based on the number of persons served by community and non-transient noncommunity water systems in a State. For the systems in this selection that serve 10,000 or fewer persons, States would modify their State Plans at the time of their selection and notify the EPA Regional Office of their addition to those Plans.

G. Specifying the Vulnerable Monitoring Period

The State may modify the vulnerable monitoring period specified in § 141.40(5)(ii)(B) applicable to all monitored systems. The State may consider environmental, precipitation, and system factors in changing this vulnerable period. The vulnerable monitoring period may be changed for a single system, a subset of systems or all monitored systems.

H. Conducting the Sampling

(1) All Monitored Systems

All monitored systems must sample for the unregulated contaminants identified on the Monitoring List 1 and should coordinate, at State discretion and to the extent practical, with their compliance monitoring schedule for regulated chemicals. For chemical contaminants, surface water-supplied systems must monitor every three months during a twelve-month period and ground water-supplied systems, two times six months apart in a twelve-month period of the years indicated in column 6 of UCMR Table 1, List 1, § 141.40(a)(3), of every five-year listing cycle. One sample at each entry point to the distribution system after any treatment representing all water sources in use during the twelve-month period or at each distribution system sampling point must be taken during the May-June-July time of the monitoring period, unless the State identifies a more vulnerable time for a particular system, subset of systems, or all monitored systems in the State. In sampling microbiological contaminants, the PWS must monitor at a site in the distribution system representative of the water supplied to the system's service area and at a site near the end of the distribution line with the longest residence time. One sampling event must occur at the most vulnerable time for the system, proposed as May 1 through July 31, or another time designated by the State as the most vulnerable period, and six months later.

In preparing this proposed regulation, EPA sought input of stakeholders on the timing of the monitoring cycle. Their input indicated that most States are on a three-year compliance monitoring schedule, with approximately one third of the systems being monitored each year. EPA proposes to use this same schedule for unregulated contaminant monitoring. The five-year unregulated contaminant listing cycle can be coordinated with the three-year compliance monitoring schedule by starting the next five year monitoring round in January 2001 and taking the samples with any compliance sampling being done, regardless of where the three-year cycle is in a particular State. Sampling in the remainder of the State would be done in the next two years, following the State's compliance monitoring schedule. This proposal means that a system may not be sampling for regulated contaminants during the 5-year listing cycle and may be required to conduct unregulated contaminant monitoring during that time.

(2) Systems Serving More Than 10,000 Persons

For Assessment Monitoring, systems serving more that 10,000 persons would follow the sampling requirements in § 141.40. These requirements are explained further in the draft methods and quality control manual.

(3) Systems in State Monitoring Plans

EPA has drafted guidance, ''UCMR Guidance for Operators of Public Water Systems Serving Less Than 10,000 People,'' on the responsibilities of the PWSs that are part of the representative sample and State Plans. This guidance further explains the requirements for operators of small systems proposed at § 141.40(a)(3), (4) and (5) and appendix A. This guidance addresses sampling instructions including frequency and location, receipt and use of sample equipment, sample shipping to laboratories, review of results, and reporting. States can use the guidance to give schedules and instructions to the systems as part of informing them of their responsibilities to participate in the representative sample and State plan. The draft guidance is available for public comment with this rule. Commenters can access the draft document through Docket Number W–98–02, through the EPA Safe Drinking Water Hotline at 800–426–4791, or through the EPA Office of Ground Water and Drinking Water Internet Homepage at www.epa.gov/ogwdw.

Systems serving 10,000 or fewer persons that are part of the State's representative sample plan must sample at the locations identified in the regulation, similar to the other systems described above. EPA would inform the competitively selected laboratories as to which systems are included in State Monitoring Plans and should, therefore, receive sampling equipment.

A statistically selected subset (ten percent) of systems in State Monitoring Plans would be required to collect duplicate samples for quality control purposes. These systems would follow the same procedures as for the first sample collection.

I. Screening Survey

The Screening Survey is not part of today's proposal, except to publish the List 2 contaminants that may be part of the Screening Survey as part of the EPA revised Unregulated Contaminant Monitoring List. When EPA develops methods for groups of contaminants on Monitoring List 2 for the Screening Survey, the Agency will by rule, after peer review of the analytical methods, require that samples for the List 2 contaminants be collected and submitted by small and large systems for testing. The rule would include a list of which contaminants PWSs would need to submit samples for the Screening Survey. EPA will pay for sample shipping and testing for systems serving 10,000 or fewer persons.

J. Pre-Screen Testing

Pre-Screen Testing is not part of today's proposal, except to publish the List 3 contaminants as part of revised UCM List. Pre-Screen Testing of List 3 contaminants would be implemented after EPA promulgates a rule, after peer review of the analytical methods, specifying the analytical methods, minimum reporting levels, and sample locations and dates for those contaminants. Pre-Screen Testing would be a limited sampling and testing activity, conducted under highly controlled conditions. The EPA Regional Office would send a letter to the State requesting the identification of the vulnerable systems for Pre-Screen Testing. The State would need to submit its selection of vulnerable systems within 60 days of receiving the EPA letter. States would identify, based on the population served by community water systems in the State and the vulnerability of the systems to the contaminant, 5 to 25 large and small systems that they determine to be most vulnerable to the contaminants specified from List 3 in order to identify a national set of up to 200 systems that may be sampled under Pre-Screen Testing. EPA wants to clarify that Pre-Screen Testing would only be representative of the most vulnerable systems and not of all systems in the nation. EPA intends to use these results to determine whether a more

representative monitoring effort should occur through Assessment Monitoring or a Screening Survey, not to generate a national occurrence estimate. However, EPA could elect to proceed directly to a determination to regulate one or more of these contaminants in the event of a clear and present public health threat, based on all available information.

For sampling contaminants that require specific training and skills to ensure the sample integrity, EPA may contract for the sampling, only requiring the PWS owner/operator to provide access to the sampling locations. EPA would pay for sample shipping and testing for the small and medium systems participating in Pre-Screening Testing, and would report the results to the PWS and State for review before allowing public access through the NCOD. Large systems would pay for the sampling, sample shipping and testing of these contaminants at EPA approved laboratories and report the results to the State for review and submission to the NCOD.

K. Testing

As discussed above, EPA has prepared a draft methods and quality control manual for the sampling and testing of the contaminants on the monitoring list that would, after public comment, be distributed to States and made generally available. This manual provides guidance on the requirements proposed in § 141.40(a)(3), (4) and (5) and appendix A. Laboratories that are conducting testing for these contaminants at the request of the public water systems would need to follow the requirements in § 141.40, Appendix A and the methods in the manual. EPA expects to set up a program to review methods implementation and performance of the participating laboratories.

For public water systems serving 10,000 or fewer persons that are included in State Plans, EPA would identify from one to five laboratories through a competitive process that would test for unregulated contaminants for this category of systems. EPA is doing this so it can pay the testing costs for small systems. EPA intends to issue a ''request for bids'' in 1999 for laboratories that desire to be considered for selection as one of the laboratories which will test the unregulated contaminant samples from these small systems. The first samples are expected to be available for testing after January 1, 2001.

L. Reporting Requirements

The results of the testing of any sample under the unregulated contaminant monitoring program would need to be reported along with the 20 data elements identified in the proposed regulation. EPA proposes that PWSs report electronically to States, unless the State, or EPA if the State does not have enforcement authority, specifies alternative reporting requirements. EPA also proposes that States report these results to EPA electronically. EPA encourages all laboratories that perform unregulated contaminant testing for public water systems to report results electronically. Under today's proposal, small PWSs included in State Plans will need to report the first nine data elements: PWS identification number; public water system facility identification number for source intake/well, treatment plant and sampling station; sampling station type; water source type; sample identification number; sample collection date; latitude of public water system facility for source intake/well, and treatment plant; and longitude of public water system facility for source intake/well and treatment plant to the EPA laboratory conducting the testing. The remaining data elements must be reported to the PWS by the laboratory. The State or EPA Regional Office may identify another reporting method for public water systems within its supervision, such as a standard hard copy or paper format that could be electronically scanned to put the data into an electronic format for computer storage, retrieval, and use. EPA requests public comment on alternative ways to report these data, instead of reporting electronically. EPA intends to provide States reporting guidance in ''Unregulated Contaminant Monitoring Reporting Guidance,'' that may include a standard hard copy format that systems could use if the State or EPA Regional Office waives the requirement to report electronically. This draft guidance is available for public comment through Docket Number W–98–02, through the EPA Safe Drinking Water Hotline at 800–426–4791, or through the EPA Office of Ground Water and Drinking Water Internet Homepage at www.epa.gov/ogwdw. States would be able to report unregulated contaminant data electronically to the EPA Safe Drinking Water Information System (SDWIS). SDWIS would have a storage area for the National Contaminant Occurrence Database (NCOD) to which unregulated contaminant data would be routed electronically.

M. Record Keeping

The PWS and the State would continue to have responsibilities for record keeping for the data from unregulated contaminant monitoring as currently required under § 141.33 for the PWS and § 142.14(a) for the State.

N. Modifying the Monitoring List

As required in Section 1445, every five years, EPA will modify today's proposed Table 1, Unregulated Contaminant Monitoring List, to include contaminants of greatest concern at that time. If EPA still requires additional data for some previously listed contaminants, those contaminants may remain on the list. As discussed previously, EPA is requesting public comment on maintaining a monitoring list with more than 30 contaminants, but only requiring monitoring for 30 contaminants within a particular five-year contaminant listing cycle.

States can also request a change to the Monitoring List through petition by seven or more governors. Their petition must clearly show that the proposed contaminant should be considered a greater health concern than other contaminants on the Monitoring List. The petition should also provide any available information on known or expected occurrence of the contaminant in drinking water, analytical methods that are or could be used to test for the contaminant(s) and other information that would assist EPA in determining whether the contaminant(s) should be added to the List. The EPA Administrator would make a determination as to whether the contaminant proposed is of greater health concern to warrant putting it on the Monitoring List in place of another contaminant.

O. Funding for Testing of Samples for Systems in State Monitoring Plans and for Pre-Screen Testing

EPA will pay for small system costs of sample testing. Grants to pay for a system's sample testing can only be made for monitoring costs that are incurred pursuant to a State Monitoring Plan. EPA considers the public water systems serving 10,000 or fewer persons included in State Plans as the grantee (recipient of the grant). The Agency can contract to establish the necessary laboratory testing capability, then grant the laboratory's services to the public water systems. EPA proposes to make payments to a laboratory, several laboratories, or other testing organizations to conduct the testing and make a grant of their service to these systems. However, because these funds

are authorized within the context of a State Monitoring Plan, any payments to another entity for this testing service would have to be limited to small systems included in final State Plans. To achieve reliability, quality control and consistency of the testing, EPA would specify that samples produced under the State plan must be submitted to a laboratory that meets the requirements in § 141.40(a)(3), (4) and (5) and appendix A, and further described in the methods and quality control manual, and has been approved for this work by the Agency. EPA expects to save up to $2 million per year as compared to the current UCM program through this testing program.

There are two authorizations for funding to carry out SDWA section 1445(a)(2)(C), both of which could be used for testing costs of a State Monitoring Plan for small systems if appropriations are provided. Beginning in fiscal year 1998, the Agency is required to reserve $2 million each year from funds appropriated under SDWA section 1452 Drinking Water State Revolving Loan Fund set-aside to pay for the costs of unregulated contaminant testing. Section 1445(a)(2)(H) authorizes $10 million annually through fiscal year 2003 to carry out all the purposes of the unregulated contaminant monitoring program. This could also include paying for the costs of testing for small systems under State monitoring plans. At this time, $2 million from the set-aside of the Drinking Water State Revolving Fund appropriation for FY 1998 and for FY 1999 are available to be spent to support unregulated contaminant monitoring for small systems. EPA will continue to use this set-aside from the Drinking Water SRF appropriation under SDWA in future budget years to cover the costs of this testing, as well as small system testing under the Screening Survey and Pre-Screen Testing. Should funding levels change for the UCM program, EPA would need to consider how to accommodate reduced funding. In this event, for example, EPA could recalculate the representative sample size to a lower confidence level, commensurate with available resources.

Funding for the monitoring approach described previously is as follows:

(1) Assessment Monitoring—EPA will pay for the sample equipment and shipping, testing, and electronic reporting for systems serving 10,000 or fewer persons. Systems serving more than 10,000 persons would need to pay for their own sample equipment and shipping, testing, and electronic reporting.

(2) Screening Survey—Since the methods in a Screening Survey may not have been evaluated on a multi-laboratory basis but the results would be a representative survey of contaminant occurrence and be consistent with the approach of Assessment Monitoring, large systems would need to pay for testing at a laboratory that EPA has approved for testing the contaminants on List 2. These methods will be peer reviewed to ensure that they can perform adequately before EPA proposes a rule to implement the Screening Survey.

Funding options within the water industry for the Screening Survey may be possible and would need to be considered by the industry itself. EPA would only pay the costs of sample collection, shipping and testing samples from systems serving 10,000 or fewer persons .

(3) Pre-Screen Testing—EPA proposes to pay for the sample collection and testing for small systems only. Large systems would pay for the costs of testing for List 3 contaminants at a laboratory that EPA has approved for testing these contaminants.

V. Relation of the Proposed Regulation to the Existing Regulation

Under a separate action, EPA published a Direct Final Rule on January 8, 1999, which will suspend the existing monitoring requirements for systems serving 10,000 or fewer persons only, beginning January 1, 1999, and until the requirements in this proposed rule are effective. This action modifies the existing regulation ahead of the promulgation and implementation of the proposed unregulated contaminant monitoring rule. The Direct Final Rule's purpose is to allow the systems serving 10,000 or fewer persons to save the cost of a third monitoring round under the existing regulation, which if performed would overlap with monitoring under the proposed revised rule. Today's proposed regulation revisions will entirely replace the existing sections of the Code of Federal Regulations at 40 CFR 141.35, 141.40, and 142.15(c)(3), and modify 142.16. The large systems should already have completed their third round of monitoring, and their fourth round is not due to begin until this rule has been promulgated.

VI. Cost and Benefit of a Revised UCMR Program

A. Program Cost Estimates

Today's proposed regulation would only require that Assessment Monitoring for List 1 contaminants be conducted. The contaminants on Lists 2 and 3 would not be monitored until EPA promulgates rules to activate the monitoring for those contaminants. EPA has estimated the costs of complying with the requirements of the new unregulated contaminant monitoring program (including the List 1, List 2 and List 3 components) in terms of labor costs and non-labor costs. Labor costs pertain to systems, State/Primacy Agencies, and EPA, and include activities such as reading the regulation, notification, sample collection (e.g., at entry points or distribution system sites), reporting, record keeping, and analysis of data. Non-labor costs are primarily incurred by EPA and systems serving more than 10,000 people, and include costs for shipping these samples to laboratories and the sample testing. The Agency will also incur non-labor costs to procure services to conduct quality assurance surveys at contract laboratories and to collect samples at a select number of Index systems (and at small systems selected for Pre-Screen Testing if the full program is implemented). Some of these costs are initial program startup costs which may not need to be replicated in future monitoring cycles.

The details of the cost estimates and their assumptions are presented in the Information Collection Request (ICR) document (ICR No. 1882.01). The ICR document presents estimated costs and burdens for the 1999–2001 period. In addition, a background cost document, titled ''Burden and Cost Calculations for the Unregulated Contaminant Monitoring Regulation'' is attached as an appendix to the ICR, and presents the estimated costs and burdens for the first five-year cycle of the proposed rule. Copies may be obtained from Sandy Farmer by mail at: OP Regulatory Information Division, U.S. Environmental Protection Agency (2137), 401 M St., SW; Washington, DC 20460, by email at: farmer.sandy@epamail.epa.gov, or by calling: (202) 260-2740. A copy may also be downloaded off the Internet at: http://www.epa.gov/icr.

While this proposed regulation would initially only require Assessment Monitoring, the cost estimates presented assume implementation of the full UCMR program. Full program cost estimates assume the Assessment Monitoring program will be supplemented by two one-year Screening Surveys and a more limited one-year Pre-Screen Testing program.

The Assessment Monitoring would be conducted for List 1 contaminants, which include 10 chemicals (i.e., all chemicals in List 1 in the Preamble) and one microbiological contaminant,

Aeromonas. The Assessment Monitoring would be performed over a three-year period and would be conducted by all 2,774 systems serving greater than 10,000 people and by the nationally representative sample of 800 systems serving 10,000 or fewer people.

Once regulations regarding the Screening Survey (List 2 contaminants) are promulgated, two Screening Surveys would be performed to monitor for the List 2 chemical contaminants specified in the UCMR regulations. The first Screening Survey would monitor for the List 2 contaminants for which preliminary sampling and analytical methods are now identified; the second Screening Survey would monitor the remaining List 2 chemicals (assuming suitable methods are available). Each Screening Survey would be conducted for one year and would include a separate representative sample of up to 300 public water systems selected from systems of all sizes. The two samples of 300 systems would be a subset of the systems conducting Assessment Monitoring. The Assessment Monitoring, together with the Screening Surveys, would provide information on the occurrence of all 24 chemical contaminants and one microbiological contaminant on the UCMR list.

The Pre-Screen Testing would be a smaller component of the UCMR program that will gather occurrence data and assess the viability of monitoring for at least three List 3 microbiological contaminants: Cyanobacteria (blue-green algae, other freshwater algae and their toxins), Coxsakieviruses, and Echoviruses. This monitoring would be conducted at a targeted sample of up to 200 systems identified as the most vulnerable to these microbiological contaminants. Again, these systems would be a subset of the systems conducting Assessment Monitoring. These systems would be identified as vulnerable by the States from all large and small systems (CWS and NTNCWS) in each State. From this listing, EPA would randomly select up to 200 systems to implement Pre-Screen Testing. It is estimated that this will be comprised of approximately 150 small systems and 50 large systems. As noted, EPA cannot pre-determine which of the most vulnerable small systems will coincide with those 800 systems selected for the national representative sample for Assessment Monitoring and Screening Surveys. Hence, it is possible that up to 150 additional small systems (for a total of 950) could be involved in the full implementation of the UCMR, if no Pre-Screen Testing systems came from the national sample selected for Assessment Monitoring. However, this situation is unlikely. For the cost and burden estimates discussed here and in Section VIII (Administrative Requirements), EPA assumes that only 800 small systems are included. The number of small Pre-Screen Testing systems does not affect the total cost estimates, but does affect some critical estimates of the cost and burden per system. Assuming only 800 systems presents a conservative, or worst-case, estimate because it evaluates the maximum total costs divided across a smaller number of systems.

Because existing sampling and analytical methods for the List 3 contaminants are problematic, all sampling at small systems would be done by EPA contractors, and all analyses will be performed at EPA selected laboratories. The sampling would be done during a one-year period, likely year four of the 5-year UCMR cycle. Large systems selected to conduct Pre-Screen Testing will be responsible for their own sample collection and for the costs of testing at an EPA approved laboratory.

Assessment Monitoring tasks and activities for monitoring chemicals contaminants follow proposal outlines: surface water systems would sample four times during one year and ground water systems would sample two times during one year in the UCMR cycle; EPA would pay for the testing costs (analytical services, shipping, etc.) for the representative sample of small systems, and these analyses would be performed by selected laboratories; large systems, serving more than 10,000 people, would pay for their own testing, using the laboratories of their choice (following UCMR quality control requirements), and; all systems would, to the extent practical, conduct their chemical sampling coincident with their standard compliance monitoring framework (SMF) to reduce labor burden and analytical costs where possible. The program would also include various quality assurance and quality control measures (e.g., ten percent duplicate samples from the representative systems). *Aeromonas* (a microbiological contaminant) would be sampled by both ground and surface water systems at a frequency of two times in the year of sampling, at two points in the distribution system. Additionally, a subset of 30 small systems, referred to as ''Index Systems'', would be sampled during all five years to assess any temporal occurrence trends, other data variability, or program problems.

Required monitoring frequencies and burden assumptions for the Screening Surveys are the same as those for Assessment Monitoring. Under Pre-Screen Testing, EPA contractors will conduct the sampling at each targeted small system twice during one year, at a maximum of four sampling points per system. Large systems will be required to follow the same monitoring schedule.

Standard assumptions and sources of information were utilized, which are the same as those used in other drinking water program ICR analyses, and include: public water system inventory, number of entry points, and labor rates. For State and some system activities, the labor burden was estimated using EPA's standard *State Resource Model*, which is documented in the *Resource Analysis Computer Program for State Drinking Water Agencies* (January 1993).

Analytical/laboratory services comprise approximately 80 percent of the national costs for a program such as the UCMR. These costs are generally calculated as follows: The number of systems multiplied by the number of entry or sampling points, multiplied by the sampling frequency, and multiplied by the analytical cost. (This calculation is repeated for each separate analytical method). Shipping costs are added to the calculated analytical/laboratory costs to derive the total direct analytical non-labor costs. Instead of assuming that large systems will pay the full analytical cost for Assessment Monitoring, systems are assumed to pay a smaller ''incremental'' analytical costs given UCMR monitoring coinciding with ongoing Phase II/V compliance monitoring. In some cases, UCMR analyses utilize the same laboratory analytical methods that are required for ongoing compliance monitoring. Therefore, when UCMR monitoring and Phase II/V monitoring are conducted concurrently, only incremental fees are charged for analysis of the additional UCMR compounds. With methods that are not currently in use, no cost savings can be realized. The full spectrum of assumptions are documented in the Information Collection Request, as noted.

The costs are averaged to an annual basis for the five-year UCMR cycle of 2001–2005. With this revised rule, the States and EPA would have some one-time start-up costs. Although start-up costs might be incurred before 2001, these costs are included and averaged as part of the five-year (2001–2005) program costs to simplify calculations. Systems will only incur costs during the five-year monitoring cycle. Full program (Assessment Monitoring, Screening Survey and Pre-Screen Testing) cost estimates appear first below. Following the full program costs are the costs for

Assessment Monitoring alone, which is the focus of this proposed rule.

Full Program. The Agency estimates that the average annual labor and non-labor costs associated with the required unregulated monitoring (with the assumptions noted above) are: EPA—$4.0 million, $3.0 million of which is for testing costs of the national representative sample and contractor site visits to Index and Pre-Screen Testing systems; States—$461,500; Systems serving 10,000 or fewer people (from the representative sample)—$19,860; all 2,774 systems serving greater than 10,000—$5.6 million. The total national average annual cost is approximately $10.1 million. Estimated average annual costs (labor plus non-labor) per system for systems serving 10,000 or fewer are approximately $25, and for systems serving more than 10,000 people are $2,000 per system.

Assessment Monitoring. EPA estimates that the average annual labor and non-labor costs of Assessment Monitoring for the 11 contaminants on List 1 are: EPA—$3.1 million, with $2.1 million for testing costs for the national representative sample; States—$461,500; Systems serving 10,000 or fewer people —$17,340; Systems serving greater than 10,000 persons—$4.8 million. The total national average annual cost, on this basis, is approximately $8.4 million. Average annual costs per system for systems serving 10,000 or fewer are approximately $22 per system and for systems serving greater than 10,000 persons are $1,730 per system. (Note that the total State cost is the same in the Assessment Monitoring program as it is in the Full Program. There would be some cost reductions to the States if no Screening Surveys or Pre-Screen Testing were conducted. However, these reductions would be minor since the majority of State UCMR activities will be necessary under the Assessment Monitoring component of the UCMR program. With Screening Survey and Pre-Screen Testing activities, States will need to manage some data additional to that generated by Assessment Monitoring activities. EPA estimates that, at most, Screening Survey and Pre-Screen Testing will account for 10 to 15 percent of State program costs. Thus, this estimate for the State Assessment Monitoring cost is conservative.)

Averaging costs over the entire cycle is not necessarily representative of peak costs, however. The majority of monitoring (and thus cost) is assumed to occur over a three-year time frame, allowing for follow-up work, data review, reporting and analysis. EPA peak year costs (e.g., during the 3 core years of Assessment Monitoring, primarily for the representative sample) are projected to be $4.7 million per year for the full program and $3.7 million for Assessment Monitoring only. Systems serving over 10,000 persons are projected to have peak year costs of about $9.5 million for the full program and $8.0 million for Assessment Monitoring only.

B. Net Costs

The net costs of the revised program were estimated by comparing the new program costs (stated above) with estimated costs for the existing program (baseline). The standard labor rates and activities that were used above were also used for estimating the burden of the existing program. For comparative purposes, the same water system inventory numbers were used. Complete UCMR program implementation was assumed. As a simplifying assumption, all systems serving over 500 people were assumed to conduct the monitoring during the same five-year interval. The existing regulation did not require systems serving 150 or fewer service connections to monitor for unregulated contaminants unless requested to do so by the State. Data in the unregulated contaminant monitoring information system suggest that States required about one third of systems serving 500 or fewer people to monitor; thus, one-third were included in the estimates. The other significant difference is in the list of contaminants.

The existing regulation requires monitoring of the 48 chemicals included in Table 1 of the Preamble. (While 14 of the chemicals in Table 1 were discretionary and not always included in the monitoring, their associated costs are derived from the same analytical method as required for the other unregulated contaminants and the regulated VOCs. Hence, they do not make a substantive difference in the cost estimates.) While there are more contaminants analyzed under the existing rule than under the proposed UCMR, monitoring requirements for the existing UCM program are derived from fewer analytical methods, and all are derived from standard methods used for routine compliance samples.

The proposed UCMR compared to the existing UCM Program—given the above assumptions and a full proposed UCMR implementation over five years—results in an estimated $35.8 million in savings to systems serving 10,000 or fewer. Annual per (small) system costs for those systems that participate in UCMR monitoring will be reduced by approximately $190 per year. Small systems will realize this savings because under the proposed program, none will be required to cover the cost of analysis for the unregulated chemicals (as many do under the existing program). Only those systems that are part of the national representative sample will incur any costs, and those costs will be labor costs only. Under full UCMR implementation, large system costs are increased by almost $14.0 million, primarily due to the increase in laboratory analytical costs. Annual per system costs for large systems are increased by approximately $1,000 per year under the UCM Program.

Baseline cost to the States is estimated to be $7.5 million over the analogous monitoring cycle of 2001 to 2005, plus year 2000 start-up costs. The total savings to States under the UCMR is estimated to be $5.2 million. For States, this savings is attributed to a decrease in required labor. States will be collecting and reporting monitoring data from many fewer water systems since only a representative sample of systems serving 10,000 or fewer people will be involved in the UCMR. EPA costs of running the existing program are estimated at $1.9 million for the analogous monitoring cycle of 2001 to 2005, plus start-up costs. EPA costs are significantly increased under the UCMR, primarily because, as proposed, it will fund all small system UCMR sample shipping and analytical costs.

EPA notes that reductions in costs can also be attributed to the ''Suspension of Unregulated Contaminant Monitoring Requirements for Small Public Water Systems (Direct Final Rule)'' (**Federal Register**, January 8, 1999), which is being issued in conjunction with the UCMR. The Direct Final Rule cancels the monitoring requirements (for systems serving less than 10,000 people) for another round of the existing list of unregulated contaminants, beginning January 1, 1999. This cancellation is being issued because monitoring for the existing contaminants would overlap with monitoring for the revised program. Approximately two-thirds of systems serving between 3,300 and 10,000 will save the costs of monitoring under the existing program (e.g., monitoring costs in 1999 and 2000) by the action of the Direct Final Rule, resulting an approximate system savings of $5.3 million.

C. Benefits

The revised Unregulated Contaminant Monitoring Regulation has significant burden reductions, particularly for small public water systems. The original Unregulated Contaminant Monitoring Program, initiated in 1988, required that all community water systems (CWSs)

monitor for the 48 contaminants listed in Table 1. The States had the authority to waive monitoring for systems serving150 or fewer service connections (although these systems were required to be available for monitoring under the regulation). Analysis of this first round of data (1988–1993) indicates that well over 25,000 public water systems are involved in the existing unregulated contaminant monitoring program. This revised program will involve only 3,574 systems: 2,774 large systems and up to 800 small systems in the nationally representative sample (or possibly up to 950 small systems, depending on the selection of the 150 most vulnerable systems for Pre-Screen Testing and the extent that they would overlap with the 800 systems in the national representative sample). Thus, many fewer systems will be required to monitor than in the past.

Additionally, for systems that will be regulated, fewer contaminants will be monitored; the number of contaminants are reduced by the UCMR rule from the current 48 to not more than 30. EPA will pay for the costs of the testing for the national representative sample, so that each small system selected will have minimal burden. EPA will not pay for the small system costs for collecting the samples and contacting the sample shipping service to pick up the samples. EPA anticipates that it will manage the laboratory testing program for these systems, minimizing time that the PWS will need to interact with the laboratories. Also, the laboratories contracted to perform the analyses will provide electronic reporting services for the small systems that do not have this capability. Thus, even those 800 small systems that are involved will have substantially reduced costs, compared to the past.

In considering the full program, cost savings can also be attributed to the use of the small sample numbers for the Screening Survey and Pre-Screen Testing. The Screening Survey of only 300 systems (across all sizes), and the Pre-Screen Testing of up to 200 systems (across all sizes), will allow statistical and targeted approaches to be applied to emerging contaminants. These early screening approaches will help to determine whether contaminants are occurring in public water systems and whether they should be included in future Assessment Monitoring in the subsequent contaminant sampling cycle. These steps, in place of an approach applying Assessment Monitoring for all 30 contaminants at *all* monitored systems, is projected to save over $50 million per year in future Assessment Monitoring costs for large systems and the EPA.

States will also see a reduction in burden. A substantial portion of State burden is related to the number of systems it must manage in a program. Even though there are some new elements to the revised UCMR, a burden reduction is apparent because there are significantly fewer systems involved, and thus a reduction in required oversight activity (e.g., record keeping, system notification).

Currently, twelve data elements must be reported with each sample. In the proposed rule, a net increase of eight new data elements (for a total of 20) will be required in reporting; the additional elements are included to make the data more useful for analysis. The additional burden to systems and States is minimal, however. Most of the additional elements would be provided by the laboratory, and many of these elements are already routinely recorded by laboratories. To date, EPA has not required that these additional elements be sent on to the State or EPA. The addition of data elements will not present an inordinate burden on the States or systems.

Database modifications will be minimal, since most States have electronic reporting. EPA plans to provide training to States on the review and interpretation of this data. Electronic reporting will facilitate minimal additional reporting burden. Once States have established electronic quality control of the data reported, State quality control review will also be minimal.

The long-term benefits of the revised unregulated contaminant monitoring regulation and program are:

1. Contaminants that do not have significant occurrence in drinking or source water will be identified early which will enable evaluations and decisions to minimize further monitoring and other resources otherwise committed to those contaminants;

2. Contaminants that do have significant occurrence will trigger additional research on health effects and treatment, as soon as practical, to protect the health of persons that may be sensitive to them; and

3. Use of a representative sample of small systems (which comprise the majority of public water systems), can provide a scientifically sound, statistically valid data set that can be used for improved analysis and program decisions at a reduced cost.

VII. Performance-Based Measurement System

In the near future, the Agency plans to implement a performance-based measurement system (PBMS) that would allow the option of either (A) using reference methods in its drinking water regulatory programs or (B) demonstrating and documenting ''performance criteria.'' PBMS would specify performance criteria or objectives that must be met for an analytical method to be considered comparable to a reference method and used broadly by other testing organizations and laboratories. As a result, under PBMS, the requirement to use only Agency specified and approved methods for SDWA regulatory programs would be removed, except for certain method-defined contaminants (e.g., such as Total Coliform and asbestos), and for data gathering prospective to regulation, such as the contaminants in this proposed rule.

As noted above, many of the contaminants of interest for the Unregulated Contaminant Monitoring (UCM) program can be classified as ''emerging'' and thus do not have existing reference methods, much less, performance criteria to describe such methods. The unregulated contaminant monitoring program will enable development of a reference method and performance criteria, as well as collect information about contaminant occurrence. While EPA has gathered single-matrix, multi-laboratory data for the chemical contaminants on the UCM list, monitoring conducted by PWSs would provide additional multi-matrix, multi-laboratory data needed to develop the performance criteria necessary to implement PBMS for contaminants selected for standards setting in future regulations. The UCM testing is designed to develop performance criteria that would be proposed with the MCL, monitoring requirements, etc. for the contaminant. For these reasons, the Agency is proposing to specify the method to be used for UCM testing. Once a contaminant proceeds to standards development as an NPDWR, EPA should have sufficient data and method development information to be able to propose both a validated reference method as well as associated performance criteria, either of which could be used for compliance monitoring of the contaminant under PBMS.

VIII. Solicitation of Public Comment

EPA solicits public comment on all aspects of this proposed regulation and its preamble. EPA knows that the public

comment period (45 days) is shorter than normal because of the statutory deadline. Commenters should know that for this same reason, no extension of the public comment period will be granted.

IX. Administrative Requirements

A. Executive Order 12866—Regulatory Planning and Review

Under Executive Order 12866, (58 FR 51735, October 4, 1993), the Agency must determine whether the regulatory action is ''significant'' and therefore subject to OMB review and the requirements of the Executive Order. The Order defines ''significant regulatory action'' as one that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.'' Pursuant to the terms of Executive Order 12866, it has been determined that this rule is a ''significant regulatory action.'' As such, this action was submitted to OMB for review. Changes made in response to OMB suggestions or recommendations will be documented in the public record.

B. Executive Order 13045—Protection of Children From Environmental Health Risks and Safety Risks

Executive Order 13045, ''Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), applies to any rule that (1) is determined to be ''economically significant'' as defined under E.O. 12866, and (2) concerns an environmental health or safety risk that EPA has reason to believe may have a disproportionate effect on children. If the regulatory action meets both criteria, the Agency must evaluate the environmental health or safety effects of the planned rule on children, and explain why the planned regulation is preferable to other potentially effective and reasonably feasible alternatives considered by the Agency.

This proposed rule is part of the Agency's overall strategy for deciding whether to regulate the contaminants identified on the Contaminant Candidate List (63 FR 10273). The purpose of today's proposed rule is to ensure that EPA has data on the occurrence of contaminants on the CCL where those data are lacking. EPA is also taking steps to ensure that the Agency will have data on the health effects of these contaminants on children through its research program. The Agency will use these data—both contaminant occurrence and health effects—to decide whether or not to regulate any of these contaminants.

This proposed rule is not subject to E.O. 13045 because it is not economically significant as defined in E.O. 12866 and it does not establish environmental standards intended to mitigate health or safety risks. For the most part, this rule only establishes procedures for monitoring of unregulated contaminants on the Agency's Contaminant Candidate List. However, given EPA's interest in protecting children's health, as part of the provisions in the rule allowing State governors to petition EPA to add contaminants to the Unregulated Contaminant Monitoring List, EPA is specifically asking Governors to include any information that might be available regarding disproportional risks to the health or safety of children. Such information would help inform EPA's decision making regarding future lists.

C. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Pub. L. 104–4, establishes requirements for Federal agencies to assess the effects of their regulatory actions on State, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''Federal mandates'' that may result in expenditures to State, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more in any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation of why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant Federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

EPA has determined that this rule does not contain a Federal mandate that may result in expenditures of $100 million or more for State, local, and tribal governments, in the aggregate, or the private sector in any one year. Potential annual costs of today's action for small entities, including local and tribal governments, are $2.1 million for sample collection, shipping, testing and reporting for Assessment Monitoring, of which EPA will pay 99 percent. Average annual costs to States are projected to be $0.5 million for Assessment Monitoring oversight and reporting (over the 5-year implementation period). Thus, today's rule is not subject to the requirements of section 202 and 205 of the UMRA.

EPA has determined that this rule contains no regulatory requirement that might significantly or uniquely affect small governments because EPA will pay for the reasonable costs of sample testing for the small public water systems required to sample and test for unregulated contaminants under this rule, including those owned and operated by small governments. While the covered small public water systems will be required to participate in the unregulated contaminant monitoring program, the most significant cost they would incur—the testing of the samples—will be paid by EPA. The only costs that small systems will pay would be the costs attributed to (1) the labor associated with reading the regulations, guidance and instructions to implement the monitoring requirements, (2) collecting the samples and packing them for shipping to the laboratory (EPA will pay for shipping), and (3) reporting and record keeping. Thus, today's rule is not subject to the requirements of section 203 of UMRA.

D. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the

Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* An Information Collection Request (ICR) document has been prepared by EPA (ICR No. 1882.01), which presents estimated costs and burdens for the 1999–2001 period. In addition, a background cost document ''Burden and Cost Calculations for the Unregulated Contaminant Monitoring Regulation'' is attached as an appendix to the ICR, and presents the estimated costs and burdens for the first five-year cycle of the proposed rule. A copy of these may be obtained from Sandy Farmer by mail at OP Regulatory Information Division; U.S. Environmental Protection Agency (2137), 401 M St., SW., Washington, DC 20460; by email at: farmer.sandy@epamail.epa.gov; or by calling: (202) 260–2740. A copy may also be downloaded off the Internet at: http://www.epa.gov/icr.

The information proposed to be collected under a revised UCM Regulation is to fulfill the statutory requirements of section 1445(a)(2) of the Safe Drinking Water Act, as amended in 1996. The data to be collected will describe the source water, location and UCMR test results for samples taken from public water systems. The concentrations of any identified UCMR contaminants will be evaluated regarding health effects and will be considered for future regulation accordingly. Reporting is mandatory. The data is not subject to confidentiality protection.

Burden is defined as the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a Federal agency. This includes the time needed to: review instructions; develop, acquire, install and utilize technology and systems for the purposes of collecting, validating, verifying, processing, maintaining, disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; search data sources; complete and review the collection of information; and transmit or otherwise disclose the information.

The annual burden and cost estimates described below are for the implementation assumptions described in Section VI, which include the Assessment Monitoring, Screening Survey and Pre-Screen Testing components of the UCMR Program. For this full UCMR Program, the respondents to the UCMR are the 800 small water systems (in the national representative sample of systems serving 10,000 or fewer people), the 2,774 large public water systems, and the 56 States and primacy agents (3,630 total respondents). (As noted, it is possible that up to 150 additional small systems could be involved if all small Pre-Screen Testing systems selected fall outside of the national representative sample. Using an assumption of only 800 systems, however, is a conservative, or worst case, assumption, when estimating the burden and cost per system. Hence, this assumption is used in the following estimates.) The frequency of response varies across respondents and years. System costs, (particularly laboratory analytical costs) vary depending on the number of entry or sampling points. Small systems will sample and report an average of 3.4 times over the 5-year implementation period. Large systems will sample and report an average of 3.0 times over the 5-year implementation period. On average, States will report quarterly. Over the UCMR Program cycle of 2001–2005, the annual average per respondent burden hours and costs are: small systems—1.2 hour burden at $25 per year; large systems—2.0 hours at $57, and $1,950 for analytical costs; and States—194 hours at $7,740 for labor and $500 for non-labor. In aggregate, the average respondent (e.g., small systems, large systems, and the States), incurs an annual average burden and cost of 4.8 hours per respondent, with a labor plus non-labor cost of $1,670 per respondent.

Burden and cost per response for the total program are estimated to be: for small systems—1.7 hour burden at $36 per response; large systems—3.4 hours at $95 for labor, and $ 3,280 for analytical costs; and States—40.3 hours at $1,700 for labor. In aggregate, the average response (e.g., responses from small systems, large systems, and the States) is associated with a burden of 7.0 hours, with a labor plus non-labor cost of $2,460 per response.

For Assessment Monitoring alone, the average burden and response are only slightly less because there is only a subset of the same systems involved in the Screening Survey and Pre-Screen sampling. In summary, for the Assessment Monitoring respondents to the UCMR are the 800 small water systems (in the national representative sample), the 2,774 large public water systems, and the 56 States and primacy agents (3,630 total respondents). The frequency of response varies across respondents and years. Small systems will sample and report an average of 3.0 times over the 5-year implementation period. Large systems will sample and report an average of 2.9 times over the 5-year implementation period. On average, States will report quarterly. Over the UCMR program cycle of 2001–2005, the annual average per respondent burden hours and costs are: Small systems—1.2 hour burden at $22 per year; large systems—2.0 hours at $56, and $1,680 for analytical costs; and States—194 hours at $7,740 for labor, and $500 for non-labor costs. In aggregate, the average respondent (e.g., small systems, large systems, and the States), incurs an annual average burden and cost of 4.7 hours per respondent, with a labor plus non-labor cost of $1,455 per respondent.

Burden and cost per response for Assessment Monitoring only are estimated to be: For small systems—1.7 hour burden at $36 per response; large systems—3.4 hours at $96 for labor, and $2,840 for analytical costs; and States—40.3 hours at $1,700 for labor. In aggregate, the average response (e.g., responses from small systems, large systems, and the States) is associated with a burden of 7.2 hours, with a labor plus non-labor cost of $2,210 per response.

The Agency estimates the annual burden to EPA for total proposed UCMR Program activities to be approximately 16,290 hours, at an annual labor cost of $651,600. EPA's annual non-labor costs are estimated to be $2.5 million for Assessment Monitoring only, or $ 3.4 million for the total UCMR program (Assessment Monitoring, Screening Surveys, and Pre-Screen Testing).

Non-labor costs are primarily attributed to the cost of sample testing for the 800 small systems. Annual burdens, as discussed, are based on a 5-year monitoring cycle.

An Agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR Chapter 15. Comments are requested on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques. Send comments on the ICR document to the Director, OP Regulatory Information Division, U.S. Environmental Protection Agency (2137), 401 M St., SW., Washington, DC 20460, and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., NW., Washington, DC 20503, marked ''Attention: Desk Officer for EPA.'' Include the ICR number in any correspondence. Since OMB is required

to make a decision concerning the ICR between 30 and 60 days after April 30, 1999, a comment to OMB is best assured of having its full effect if OMB receives it by June 1, 1999. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

E. Regulatory Flexibility Act

Under the Regulatory Flexibility Act (RFA), as amended by the Small Business Regulatory Enforcement Fairness Act (SBREFA), EPA generally is required to prepare a regulatory flexibility analysis describing the impact of the rule on small entities as part of rulemaking. However, under section 605(b) of the RFA, if EPA certifies that the rule will not have a significant economic impact on a substantial number of small entities, EPA is not required to prepare a regulatory flexibility analysis. Pursuant to section 605(b) of the Regulatory Flexibility Act, 5 U.S.C. 605(b) and for the reasons set forth below, the Administrator certifies that this rule will not have a significant economic impact on a substantial number of small entities.

For purposes of RFA analyses for SDWA rulemakings, the Agency defines small entities as systems serving 10,000 or fewer customers. Because this is the system size category specified in SDWA as requiring special consideration with respect to small system flexibility, EPA established systems serving 10,000 or fewer persons an alternative small entity definition for SDWA drinking water rules for the purposes of regulatory flexibility analysis. This alternative definition was established for all drinking water rules in the Consumer Confidence Reports rulemaking (63 FR 44511–44536 (August 19, 1998)). EPA also consulted with the Small Business Administration about the alternative definition as it relates to small businesses. For further information on the establishment of this definition of small entities, see the referenced **Federal Register** notice.

EPA has determined that the UCMR will affect small water utilities, since it is applicable to a subset of small community and non-transient noncommunity water systems. However, the systems impacted limited to a representative sample of approximately 800 small public water systems serving 10,000 or fewer persons, or 1.2 percent of systems serving 10,000 or fewer persons. These systems will be required to conduct monitoring, as specified in the UCMR (i.e., collect and prepare samples for shipping). EPA will assume all costs for testing of the samples and for shipping the samples from these systems to specific certified laboratories located throughout the United States. EPA has set aside $2 million from the State Revolving Fund (SRF) in Fiscal Years 1998 and 1999, and plans to do so into the future with its authority to set aside SRF monies for the purposes of implementing this provision of SDWA.

EPA has estimated the impact of the proposed rule and concludes that the rule will not have a significant economic impact on a substantial number of small entities. The rationale for this conclusion is that EPA plans to pay the full costs of shipping and testing samples for small systems and does not plan, under any scenario, to ask systems to pay these costs. (The costs to these systems will be limited to the labor hours associated with collecting a sample and preparing it for shipping.) EPA will seek to implement an optimum and scientifically credible UCM program that will provide a firm basis for future regulatory decisions.

As noted, it is possible that up to 150 additional small systems could be involved in the unlikely event that all small Pre-Screen Testing systems selected fall outside of the national representative sample. Using an assumption of only 800 systems involved, however, is a conservative, or worst case, assumption, when estimating the burden and cost *per* system; i.e., this allocates the total cost and burden of the full implementation over 800 systems versus 950 systems. Hence, this assumption is used in the following estimates.

EPA evaluated the cost to small entities under two scenarios. Under either scenario, EPA will assume the cost of shipping and testing samples for small systems. The ''full implementation'' scenario assumes full funding from funds set aside from the Drinking Water SRF through the year 2005. The ''limited implementation'' scenario assumes that EPA will fund the costs of the testing with the funds already set aside for this program. Under either scenario, this rule will not have a significant economic impact on a substantial number or small entities. Accordingly, EPA certifies that this rule will not have a significant impact on a substantial number of small entities. Cost summaries for both scenarios are provided below.

Full Implementation Scenario

EPA analyzed the small entity impact for privately-owned and publicly-owned entities separately due to the different economic characteristics of these ownership types. For publicly-owned systems, EPA used the ''revenue test'', which compares annual system costs attributed to the rule to the system's annual revenues. EPA used a ''sales test'' for privately-owned systems which involves the analogous comparison of UCMR-related costs to a privately-owned system's sales. EPA assumes that the distribution of the national representative sample of small systems will reflect the proportions of publicly- and privately-owned systems in the national inventory. The estimated distribution of the representative sample, categorized by ownership type, source water, and system size, is presented below in Table 10.

TABLE 10.—NUMBER OF PUBLICLY- AND PRIVATELY-OWNED SYSTEMS TO PARTICIPATE IN ASSESSMENT MONITORING

Size category	Publicly-owned systems		Privately-owned systems		Total—all systems
	Non-index systems	Index systems	Non-index systems	Index systems	
GROUND WATER SYSTEMS					
500 and under	20	1	76	2	99
501 to 3,300	159	6	72	3	240
3,301 to 10,000	158	7	44	2	211
Subtotal Ground	337	14	192	7	550
SURFACE WATER SYSTEMS					
500 and under	3	0	8	0	11

TABLE 10.—NUMBER OF PUBLICLY- AND PRIVATELY-OWNED SYSTEMS TO PARTICIPATE IN ASSESSMENT MONITORING—Continued

Size category	Publicly-owned systems		Privately-owned systems		Total—all systems
	Non-index systems	Index systems	Non-index systems	Index systems	
501 to 3,300	56	2	25	1	84
3,301 to 10,000	116	5	33	1	155
Subtotal Surface	175	7	66	2	250
Total	512	21	258	9	800

The basis for the UCMR RFA certification under full UCMR implementation is as follows: the average annual compliance costs of the rule represent less than one percent of revenues/sales for the 800 small water systems that will be affected. The EPA estimates that Agency and system costs for implementing small system sampling for the full UCMR program (2001–2005) will be approximately $15.1 million. Since the Agency specifically structured the rule to avoid significantly impacting a substantial number of small entities by assuming all costs for laboratory analyses, shipping, and quality control for small entities, EPA costs comprise approximately 99 percent ($15.0 million) of the total costs. (Note that EPA's contribution to the small system program is assumed to include all small system analytical and shipping costs, as well as all non-labor program support costs.) Table 11 presents the annual costs to small systems and to EPA for the small system sampling program, along with the number of participating small systems during each of the five years of the program.

TABLE 11.—EPA COSTS FOR SMALL SYSTEMS UNDER FULL IMPLEMENTATION OF UCMR

Cost description [1]	2001 (AM)	2002 (AM & SS1)	2003 (AM & SS2)	2004 (AM for Index only & PST)	2005 (AM Index only)	Total
Costs to EPA for Small System Program (including Assessment Monitoring, Screening Survey, and Pre-Screen Testing): quality assurance, ongoing coordination, data analysis, analytical costs, shipping costs, and costs for contractor site visits to small Index and Pre-Screen Testing systems [2]						
	$3,392,183	$3,538,029	$3,533,202	$3,814,617	$752,537	$15,030,568
Costs to Small Systems (including Assessment Monitoring, Screening Survey, and Pre-Screen Testing): additional labor for monitoring or monitoring assistance						
	27,871	26,915	26,915	15,116	2,499	99,316
Total Costs to EPA and Small Systems for UCMR						
	3,420,054	3,564,944	3,560,117	3,829,733	755,036	$15,129,884
Number of Systems to be Monitoring each Year: Non-Index and Index in 2001–2003, Index only in 2004–2005 [3]						
Public	191	191	191	107	21	533
Private	96	96	95	81	9	267
Total	287	287	286	188	30	800

[1] AM = Assessment Monitoring; SS1 and SS2 = Screening Surveys Years One and Two; PST = Pre-Screen Testing.
[2] EPA costs during the year 2001 include some start-up costs that may actually be incurred during the year 2000.
[3] Total number of systems is 800. All 30 Index systems sample during each year 2001–2005. One-third of Non-Index systems sample during each year from 2001–2003. A total of 180 small systems conduct Screening Surveys during each year, 2002 and 2003. 158 small systems conduct the Pre-Screen Testing during 2004. The rows do not add across, because the same 30 Index systems sample during every year of 5-year implementation cycle, and because the Screening Survey systems are a subset of the original sample of 800 systems (e.g., they are conducting multiple types of sampling). Pre-Screen Testing systems may or may not be a subset of the original 800 Assessment Monitoring systems.

System costs are attributed to the additional labor required for reading State letters, monitoring, reporting, and record keeping. Assuming that systems will efficiently conduct UCMR sampling (e.g., coincident with other required monitoring), the estimated average annual per system labor burden for full UCMR implementation will be: $17 (0.8 hours) for ground water systems; and $31 (1.3 hours) for surface water systems. In total, ground water and surface water systems average 1.2 hour of burden per year with an average annual cost of $25. Average annual cost, in all cases, is less than 0.3 percent of system revenues/sales. Therefore, as stated above, the Administrator certifies that this proposed rule, as funded by EPA, will not have a significant economic impact on small entities. Tables 11a and 11b below present the estimated economic impacts in the form of revenue/sales tests for publicly- and privately-owned systems.

TABLE 12a.—UCMR FULL IMPLEMENTATION SCENARIO: ANALYSIS FOR PUBLICLY-OWNED SYSTEMS (2001–2005)

System size	Annual number of systems impacted [1]		Average annual hours per system (2001–2005)		Average annual cost per system (2001–2005)		"Revenue test" [2]	
	Number	Percent of U.S. total	Non-index	Index	Non-index	Index	Non-index (percent)	Index (percent)
GROUND WATER SYSTEMS								
500 and under	5.8	0.01	0.8	3.0	$10.99	$42.78	0.07	0.26
501 to 3,300	41.4	0.34	0.8	3.8	11.44	54.38	0.01	0.05
3,301 to 10,000	42.5	1.77	1.0	4.6	29.29	128.80	0.01	0.03
SURFACE WATER SYSTEMS								
500 and under	2.3	0.12	2.9	0.0	42.49	0.00	0.15	0.00
501 to 3,300	17.9	0.98	1.6	5.2	22.66	75.40	0.01	0.04
3,301 to 10,000	30.5	3.03	1.3	5.0	35.28	140.00	0.00	0.02

[1] Calculated as 1/5 of the Non-Index sample, plus all Index systems for each year from 2001–2005; actual sampling for Non-Index systems takes place over three years, while that of Index systems occurs over each of five years. Since Screening Survey systems are a subset of the Assessment Monitoring systems, this does not affect the average annual number of systems (e.g., these systems are conducting monitoring for two components of the UCM Program at the same time).

[2] The "Revenue Test" was used to evaluate the economic impact of an information collection on small government entities (e.g., publicly-owned systems); costs are presented as a percentage of median annual revenue in each size category.

TABLE 12b.—UCMR FULL IMPLEMENTATION SCENARIO: ANALYSIS FOR PRIVATELY-OWNED SYSTEMS (2001–2005)

System size	Annual number of systems impacted [1]		Average annual hours per system (2001–2005)		Average annual cost per system (2001–2005) [1]		Sales test [2]	
	Number	Percent of U.S. total	Non-index	Index	Non-Index	Index	Non-index (percent)	Index (percent)
GROUND WATER SYSTEMS								
500 and under	21.4	0.05	0.8	3.0	10.99	42.78	0.07	0.27
501 to 3,300	18.8	0.15	0.8	3.8	11.44	54.38	0.01	0.05
3,301 to 10,000	11.9	0.50	1.0	4.6	29.29	128.80	0.00	0.02
SURFACE WATER SYSTEMS								
500 and under	6.5	0.34	2.9	0.0	42.49	0.00	0.19	0.00
501 to 3,300	8.1	0.45	1.6	5.2	22.66	75.40	0.01	0.05
3,301 to 10,000	8.5	0.85	1.3	5.0	35.28	140.00	0.01	0.02

[1] Calculated as 1/5 of the Non-Index sample, plus all Index systems for each year from 2001–2005; actual sampling for Non-Index systems takes place over three years, while that of Index systems occurs over each of five years. Since Screening Survey systems are a subset of the Assessment Monitoring systems, this does not affect the average annual number of systems (e.g., these systems are conducting monitoring for two components of the UCM Program at the same time).

[2] The "Sales Test" was used to evaluate the economic impact of an information collection on small private entities (e.g., privately-owned systems); costs are presented as a percentage of median annual sales in each size category.

Limited Implementation Scenario

Despite the expected $2 million per year budget, EPA recognizes that funding levels vary from year to year and thus cannot guarantee the precise amount that will ultimately be available to implement its UCM program (although a considerable portion of those funds are currently on hand). In the event that an amount commensurate with funding the optimal UCM program (in terms of numbers of small systems sampled and numbers of contaminants analyzed) may not be available, the Agency will adjust the UCM program to accommodate the available funds. This adjustment may necessitate use of relatively fewer sample sites, testing of fewer contaminants, or both. EPA would use a random number generator select a representative sample of systems that would accommodate the available funds.

While the Agency considers the scenario of no additional funding to be unlikely, EPA also evaluated the scenario of "current funds only" for purposes of this RFA analysis. This "current available funds" scenario is the case in which EPA would receive no further funding for small system testing beyond the $4 million that is currently set aside from the State Revolving Funds from Federal Fiscal Years 1998 and 1999. EPA anticipates funding this program such that no small system would incur testing costs as intended in the legislation. Small systems would only be responsible for taking the sample. By analyzing small system impact under such a scenario, EPA can demonstrate that, regardless of funding levels, this rule will not have a significant economic impact on a substantial number of small entities. Given the flexibility of the proposed rule, EPA can ensure defensible results, balanced with available funding.

In the optimal anticipated program, the sample of 800 systems is derived by applying a 99 percent confidence level, with 1 percent error tolerance. To accommodate a $4 million budget, the representative sample of small systems would be reduced to approximately 390 systems. Although this smaller sample size would be less rigorous than the anticipated sample of 800 systems, the sample error would still remain within a range of plus or minus 5 percent. These 390 systems would incur only labor costs for collecting and packing

the samples, while EPA would pay the shipping and testing costs for these samples.

With the currently available $4 million, EPA will be able to fund approximately 48 percent of the planned Assessment Monitoring program for small systems. To estimate the costs under this scenario, it is assumed that only the Assessment Monitoring component of UCMR would be implemented. It is also assumed that the smaller representative sample would be allocated across system size categories in the same proportions as those in the sample of 800 systems, with ten of these systems being Index sites, as seen below in Table 13. Furthermore, preparations for the Screening Surveys, Pre-Screen Testing, and future UCMR cycles are assumed to be dropped, since with limited funds, current implementation would take precedence over planning for further monitoring. Finally, for the cost analysis of this current funds scenario, it is assumed that the national representative sample will reflect the proportions of publicly- and privately-owned systems in the national inventory of public water systems.[1] Because EPA's statistical approach utilizes a random selection process for systems in the national representative sample, publicly—and privately-owned systems should be selected in the same proportions for that sample as they occur in set of all community and non-transient, noncommunity water systems in the nation.

The Agency is concerned that a reduced sample size will reduce the statistical likelihood that the observed contaminant occurrence levels will be representative of actual occurrence across the nation. Because of this, the Agency will actively pursue funding for the full program described in this Preamble.

TABLE 13.—NUMBER OF PUBLICLY- AND PRIVATELY-OWNED SYSTEMS TO PARTICIPATE IN ASSESSMENT MONITORING, FOR LIMITED FUNDING PROGRAM [1]

Size category	Publicly- owned systems		Privately-owned systems		Total—all systems
	Non-index systems	Index systems	Non-index systems	Index systems	
GROUND WATER SYSTEMS					
500 and under	11	0	38	1	50
501 to 3,300	80	2	36	1	119
3,301 to 10,000	79	2	22	1	104
Subtotal Ground	170	4	96	3	273
SURFACE WATER SYSTEMS					
500 and under	1	0	4	0	5
501 to 3,300	28	1	13	0	42
3,301 to 10,000	58	2	16	0	76
Subtotal Surface	87	3	33	0	123
Total	257	7	129	3	396

[1] The Limited Funding Program assumes that the only funds available to run the program are those that are currently in hand—$4 million of set aside funds from Federal Fiscal Years 1998 and 1999. This is a ''worst case'' funding scenario.

Under the limited funding scenario, EPA costs for Assessment Monitoring would primarily be incurred from 2001 to 2003. Systems are assumed to sample during one year of the three-year period, with one-third of systems sampling during each year. However, Index systems are assumed to monitor during each of the three Assessment Monitoring years. The distribution of costs to EPA and small systems over the entire five years is presented below in Table 14.

TABLE 14.—EPA COSTS FOR SMALL SYSTEMS—LIMITED $4 MILLION PROGRAM

Cost description	2001	2002	2003	2004	2005	Total
Costs to EPA for Assessment Monitoring Program: Quality assurance, ongoing coordination, data analysis,						
	$1,367,947	$1,082,341	$1,082,341	$280,422	$186,948	$3,999,999
Costs to Small Systems (Assessment Monitoring): Including additional labor for monitoring or monitoring						
	13,405	11,756	11,756	0	0	36,917
Total Costs to EPA and Small Systems for Assessment Monitoring						
	1,381,352	1,094,097	1,094,097	280,422	186,948	4,036,916

[1] Publicly- and privately-owned systems allocations are estimated using data from the 1995 Community Water System Survey. Publicly owned systems are those that are owned by a city, town, township, village, municipal government, State or federal government, or any other publicly-owned or operated system. Privately-owned systems include those owned by private investors or homeowners' associations.

TABLE 14.—EPA COSTS FOR SMALL SYSTEMS—LIMITED $4 MILLION PROGRAM—Continued

Cost description	2001	2002	2003	2004	2005	Total
Number of Systems each Year: Assessment Monitoring and Index Systems in 2001–2003 [1]						
Public	92	92	92	0	0	264
Private	46	46	46	0	0	132
Total	138	138	138	0	0	396

[1] Rows do not add across because the 10 Index systems sample during each year 2001–2003. One-third of Non-Index systems sample during each year from 2001–2003.

Under this limited $4 million program, EPA costs represent approximately 98 percent of the national cost for the small system sampling program. As in full UCMR implementation, small system costs are attributed to the additional labor required for reading State letter, monitoring, reporting, and record keeping. It is estimated that under the limited program (e.g., Assessment Monitoring only), the average annual per system labor burden will be: $15 (0.7 hours) for ground water systems; and $27 (1.26 hours) for surface water systems. In total, ground water and surface water systems average 0.9 hours of burden per year, with an average annual cost of $19. System burdens here are lower than in the full implementation scenario primarily because no Screening Surveys or Pre-Screen Testing will occur under this scenario.

Through revenue and sales tests, determinations of economic impact are presented below in Tables 14a and 14b, respectively. Under this limited $4 million program, systems will be subject to *less* required monitoring than in the full UCMR program. For both full UCMR implementation and the limited funding scenario, average annual cost is in all cases lower than 1 percent of annual sales/revenues. Thus, even in this worst case, limited implementation scenario, EPA certifies that this proposed rule would not impose a significant economic impact on small entities.

TABLE 15A.—UCMR LIMITED IMPLEMENTATION SCENARIO: ANALYSIS FOR PUBLICLY-OWNED SYSTEMS (2001–2005)

System size	Annual number of systems impacted [1]		Average annual hours per system (2001–2005) (percent)		Average annual cost per system (2001–2005)		"Revenue Test" [2] (percent)	
	Number	Percent of U.S. total	Non-Index	Index	Non-Index	Index	Non-Index	Index
GROUND WATER SYSTEMS								
500 and under	2.2	0.00	0.3	0.6	$4.48	$8.65	0.03	0.05
501 to 3,300	17.1	0.14	0.3	0.7	5.05	9.81	0.00	0.01
3,301 to 10,000	17.2	0.72	0.1	0.8	2.81	23.71	0.00	0.00
SURFACE WATER SYSTEMS								
500 and under	0.3	0.01	0.5	0.0	$7.97	$0.00	0.03	0.00
501 to 3,300	6.0	0.33	0.7	1.1	10.45	16.63	0.01	0.01
3,301 to 10,000	12.6	1.25	0.0	1.1	0.00	30.99	0.00	0.00

[1] Calculated as ⅕ of publicly-owned Non-Index sample, plus all public Index systems for each year from 2001–2003; actual sampling for Non-Index takes place over three years, Index over each of three years.

[2] The "Revenue Test" was used to evaluate the economic impact of an information collection on small governments (e.g., publicly-owned systems); costs are presented as a percentage of median annual revenue in each size category.

TABLE 15B.—UCMR LIMITED IMPLEMENTATION SCENARIO: ANALYSIS FOR PRIVATELY OWNED SYSTEMS (2001–2005)

System size	Annual number of systems impacted [1]		Average annual hours per system (2001–2005) (percent)		Average annual cost per system (2001–2005) [1]		"Sales Test" [2] (percent)	
	Number	Percent of U.S. total	Non-Index	Index	Non-Index	Index	Non-Index	Index
GROUND WATER SYSTEMS								
500 and under	8.0	0.02	0.6	1.9	$8.06	$27.41	0.05	0.17
501 to 3,300	7.8	0.06	0.6	2.1	9.15	30.89	0.01	0.03
3,301 to 10,000	4.8	0.20	0.8	2.6	22.16	73.92	0.00	0.01
SURFACE WATER SYSTEMS								
500 and under	0.8	0.04	1.1	0.0	$15.41	$0.00	0.07	0.00
501 to 3,300	2.7	0.15	1.2	3.2	17.07	46.98	0.01	0.03

TABLE 15B.—UCMR LIMITED IMPLEMENTATION SCENARIO: ANALYSIS FOR PRIVATELY OWNED SYSTEMS (2001–2005)—Continued

System size	Annual number of systems impacted [1]		Average annual hours per system (2001–2005) (percent)		Average annual cost per system (2001–2005) [1]		"Sales Test" [2] (percent)	
	Number	Percent of U.S. total	Non-Index	Index	Non-Index	Index	Non-Index	Index
3,301 to 10,000	3.5	0.35	1.1	3.1	31.35	87.36	0.01	0.02

[1] Calculated as 1/5 of the Non-Index sample, plus all Index systems for each year from 2001–2005; actual sampling for Non-Index systems takes place over three years, while that of Index systems occurs over each of three years.

[2] The "Sales Test" was used to evaluate the economic impact of an information collection on small private entities (e.g., privately-owned systems); costs are presented as a percentage of median annual sales in each size category.

F. National Technology Transfer and Advancement Act

Under § 12(d) of the National Technology Transfer and Advancement Act (NTTAA), the Agency is required to use voluntary consensus standards in its regulatory activities unless doing so would be inconsistent with applicable law or otherwise impractical. Voluntary consensus standards are technical standards (e.g., material specifications, analytical methods, sampling procedures, business practices, etc.) that are developed or adopted by voluntary consensus standard bodies. Where available and potentially applicable voluntary consensus standards are not used by EPA, the Act requires the Agency to provide Congress, through the Office of Management and Budget (OMB), an explanation of the reasons for not using such standards.

In preparing this proposal, EPA searched for consensus methods and the methods found were published by the three major voluntary consensus method organizations, Standard Methods, AOAC International, and American Society for Testing and Materials (ASTM), that would be acceptable for compliance determinations under SDWA for the UCM List. The voluntary consensus methods found are listed in preamble section III.A.1.(c), Analytical Methods Applicable to the Monitoring List. For the Assessment Monitoring portion of the proposed rule, EPA is approving the use of all of the non-EPA analytical methods, adopted by these voluntary consensus groups, that are applicable to the analyses of these unregulated contaminants, when used in conjunction with the required quality-control practices specified in the rule.

For those chemical and microbiological parameters not included in the Assessment Monitoring portion of this proposal, EPA was unable to find either an EPA or voluntary consensus method organization method that was applicable to the monitoring required. In those cases where the contaminant was listed in a consensus method organizations method, the method either used technology that EPA believes is not consistent with modern laboratory practices (large volume liquid-liquid acid base neutral extractions, and packed column chromatography), or the contaminant was subject to rapid degradation in samples stored under the specified conditions. Therefore, EPA is conducting the methods development necessary to establish acceptable methods for the determination of these parameters.

EPA welcomes comments on this aspect of the proposed rulemaking and, specifically invites the public to identify potentially applicable voluntary consensus standards and to explain why such standards should be used in this regulation.

G. Executive Order 12898—Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (February 11, 1994), focuses federal attention on the environmental and human health conditions of minority populations and low-income populations with the goal of achieving environmental protection for all communities.

By seeking to identify unregulated contaminants that may pose health risks via drinking water from all Public Water Systems, the unregulated contaminant monitoring regulation furthers the protection of public health for all citizens, including minority and low-income populations using public water supplies. Using a statistically-derived set of systems for the national representative sample that is population-weighted within each system size category in each State, the proposed rule ensures that no group within the population is under represented.

H. Executive Order 12875—Enhancing Intergovernmental Partnerships

Under Executive Order 12875, EPA may not issue a regulation that is not required by statute and that creates a mandate upon a State, local or tribal government, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by those governments or EPA consults with those governments. If EPA complies by consulting, Executive Order 12875 requires EPA to provide to the Office of Management and Budget a description of the extent of EPA's prior consultation with representatives of affected State, local and tribal governments, the nature of their concerns, any written communications from the governments, and a statement supporting the need to issue the regulation. In addition, Executive Order 12875 requires EPA to develop an effective process permitting elected officials and other representatives of State, local and tribal governments "to provide meaningful and timely input in the development of regulatory proposals containing significant unfunded mandates."

EPA has concluded that this rule will create a mandate on State, local, and tribal governments and that the Federal government will not provide the funds necessary to pay the full direct costs incurred by these governments in complying with the mandate. However, EPA will pay for the sample testing costs of small systems serving 10,000 or fewer persons and has set aside funds in its budget to do so.

EPA consulted with State, local, and tribal governments to enable them to provide meaningful and timely input in the development of this rule. Specifically, EPA received input through its public stakeholder process from 21 States and eight large water systems serving more than 10,000 persons, as well as 62 other Federal, State and local government agencies, non-profit organizations, and associations and industry who attended

17 public meetings beginning in December 1996 and continuing through June 1998, in Washington, DC. EPA announced five of these meetings in the **Federal Register** to allow as broad as possible a representation at these meetings, with the remaining meetings being topical meetings of representatives from the public meetings. EPA also sent out nearly 400 targeted mailings directly to 360 tribes, tribal organizations, and small water system organizations to ensure that they were informed of the proposed rule's expected requirements and had an opportunity to comment on these requirements. The principal concerns raised were that: (1) EPA should fund the testing of samples from systems serving 10,000 or fewer persons, and that larger systems should provide their own testing. (2) EPA should implement a monitoring program commensurate with the information needed about and the analytical methods that could reliably be used for the contaminants of concern. (3) EPA should establish as full a list of 30 contaminants as possible to maximize the use of the program. EPA believes this proposal fully addresses these concerns. (4) EPA should consider targeted, rather than representative random, sampling for tribal water systems. EPA is asking for public comment on the issue of targeted monitoring. (5) EPA should consider the applicability of ''treatment as a State'' for Tribes for the purposes of this regulation. EPA is asking for public comment on this issue.

I. Executive Order 13084—Consultation and Coordination with Indian Tribal Governments

Under Executive Order 13084, EPA may not issue a regulation that is not required by statute, that significantly or uniquely affects the communities of Indian tribal governments, and that imposes substantial direct compliance costs on those communities, unless the Federal government provides the funds necessary to pay the direct compliance costs incurred by the tribal governments or EPA consults with those governments. If EPA complies by consulting, Executive Order 13084 requires EPA to provide to the Office of Management and Budget, in a separately identified section of the preamble to the rule, a description of the extent of EPA's prior consultation with representatives of affected tribal governments, a summary of the nature of their concerns, and a statement supporting the need to issue the regulation. In addition, Executive Order 13084 requires EPA to develop an effective process permitting elected officials and other representatives of Indian tribal governments ''to provide meaningful and timely input in the development of regulatory policies on matters that significantly or uniquely affect their communities.''

Today's rule does not significantly or uniquely affect the communities of Indian tribal governments. Only one tribal water system serves more than 10,000 persons. All the other tribal water systems serve 10,000 or fewer persons and in today's proposal would have an equal probability of being selected in the national representative sample of systems of this size for which EPA will pay the costs of testing of unregulated contaminants. Thus, these tribal water systems would be treated the same as water systems of a State.

This rule will not impose substantial direct compliance costs on such communities either because the Federal government will provide most of the funds necessary to pay the direct costs incurred by the tribal governments in complying with the rule, with the exception of the one large tribal water system. Accordingly, the requirements of section 3(b) of Executive Order 13084 do not apply to this rule. Nevertheless, in developing this rule, EPA consulted with representatives of tribal governments pursuant to both Executive Order 12875 and Executive Order 13084. The extent of EPA's consultation, the nature of the governments' concerns, and EPA's position supporting the need for this rule, are discussed in the preamble section that addresses compliance with Executive Order 12875. Tribes were consulted and raised issues concerning the utility of a targeted, rather than a representative random, sampling approach, and the applicability of ''treatment as a State'' under this proposed rule. The Agency is requesting public comment on these issues. Systems serving 10,000 or fewer persons on tribal lands will have the same opportunity to be selected for participation in the monitoring program as any other system of that size and EPA will pay for the testing costs.

X. Public Involvement in Regulation Development

EPA's Office of Ground Water and Drinking Water has developed a process for stakeholder involvement in its regulatory activities for the purpose of providing early input to regulation development. Activities related to the Unregulated Contaminant Monitoring Regulation included meetings for developing the Contaminant Candidate List (CCL) and the information requirements of the National Drinking Water Contaminant Occurrence Data Base (NCOD), as well as specific meetings focused on revising the unregulated contaminant monitoring program. During the development of the UCMR, stakeholders from a wide range of public and private entities provided key perspectives. Representatives from public water systems, States, industry, and other organizations attended two stakeholders meetings to discuss options directly related to the UCMR. An additional 17 meetings were held with stakeholders and the public concerning issues related to the UCMR. In total, twenty-one State health and environmental agencies, five water systems, six water associations, six health associations, five industrial associations, four environmental organizations, four community and consumer organizations, twenty-nine companies, and seven federal agency offices participated in meetings that were instrumental in the development of the proposed regulation.

As noted above, the CCL identifies contaminants for which EPA may take regulatory action and for which EPA needs additional data. The contaminants for which additional data are needed before EPA can determine their regulatory status include contaminants on the Unregulated Contaminant Monitoring List. The meetings to develop the CCL have included stakeholder meetings to discuss the list broadly and meetings focused on particular issues conducted through the National Drinking Water Advisory Council's (NDWAC) Working Group on Occurrence and Contaminant Selection, as follows:

December 2–3, 1996 Stakeholders Meeting
April 3–4, 1997 NDWAC Working Group
June 23, 1997 NDWAC Working Group
July 17, 1997 NDWAC Working Group
January 7, 1998 NDWAC Conference Call

These meetings resulted in the Drinking Water Contaminant Candidate List (63 FR 10274, March 2, 1998) The contaminants that are proposed in this rule for unregulated contaminant monitoring are taken from the CCL ''Occurrence Priorities.''

The NCOD development activities have included ten public meetings on information requirements that should be considered for inclusion in that data base. These meetings were held from October 1997 to February 1998. The work of the NCOD development team has been incorporated in the preparation of this proposed unregulated contaminant monitoring regulation as the reporting requirements

for sample testing. Several documents are included in the docket for this rule concerning the NCOD development which were used in the public meetings:

Options for the National Drinking Water Contaminant Occurrence Data Base, Background Document (Working Draft), EPA 815–D–97–001, May 1997;

National Drinking Water Contaminant Occurrence Data Base—Development Strategy, Background Document (Working Draft), EPA 815–D–97–005, December 1997; and

Options for Design of the National Drinking Water Contaminant Occurrence Data Base, Background Document (Working Draft), EPA 815–D–98–001, January 1998.

EPA held its first stakeholders meeting to discuss options for the development of the Unregulated Contaminant Monitoring Regulation on December 2–3, 1997, in Washington, DC. A range of stakeholders attended that meeting, including representatives of public water systems, States, industry, health and laboratory organizations, and the public. EPA prepared a background document for the meeting, *Options for Developing the Unregulated Contaminant Monitoring Regulation* (Working Draft), EPA 815–D–97–003, November 1997. A summary of the meeting is also available. Prior to preparation of this proposed regulation, EPA held a second stakeholders meeting on June 3–4, 1998, to obtain input from interested parties on significant issues evolving from drafting the regulation, which needed further public input. EPA prepared a public review document for that meeting, *Background Information and Draft Annotated Outline for a Proposed Unregulated Contaminant Monitoring Regulation,* Background Document, (Working Draft), May 1998. A meeting summary is available. EPA also sent special requests for review of stakeholder documents to more than 360 tribes (exclusive of the Alaskan native villages) and to small systems organizations to obtain their input.

In all, EPA has held 17 public meetings with stakeholders and interested parties related directly or closely to the proposed Unregulated Contaminant Monitoring Regulation.

XI. References

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List of Subjects

40 CFR Part 141

Analytical methods, Chemicals, Environmental protection, Intergovernmental relations, Microorganisms, Monitoring, Water supply.

40 CFR Part 142

Analytical methods, Chemicals, Environmental protection, Intergovernmental relations, Microorganisms, Monitoring, Water supply.

Dated: April 14, 1999.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40 of the Code of Federal Regulations is proposed to be amended as follows:

PART 141—NATIONAL PRIMARY DRINKING WATER REGULATIONS

1. The authority citation for part 141 continues to read as follows:

Authority: 42 U.S.C. 300f, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–4, 300j–9, and 300j–11.

2. Section 141.35 is revised to read as follows:

§ 141.35 Reporting of unregulated contaminant monitoring results.

(a) *Does this reporting apply to me?* This section applies to any owner or operator of a public water system required to monitor for unregulated contaminants under § 141.40. This rule requires you to report the results of this monitoring.

(b) *To whom must I report?* (1) You must report the results of unregulated contaminant monitoring to the primary enforcement authority for the public water system program for your state, which will usually be the State drinking water agency, but will, in some parts of the country, be the EPA Regional office. (The primary enforcement authority for a public water system is also known as the ''primacy agency'.) You must also notify the public of the monitoring results as provided in Subpart O (Consumer Confidence Reports) and Subpart Q (Public Notification) of this part.

(2) Exception. You do not need to report results of the screening survey, if you are a system serving a population of 10,000 or less, or the results of a pre-screen test, since in both cases EPA will arrange for testing and reporting of the results. However, you will still need to comply with public notification requirements for these results.

(c) *When do I report monitoring results?* You must report the results of unregulated contaminant monitoring within ten (10) days of receiving the results from the laboratory or within the first ten (10) days following the end of the required monitoring period specified by the primacy agency, whichever comes first.

(d) *What information must I report?* You must report the information specified in the following table:

TABLE 1.—UNREGULATED CONTAMINANT MONITORING REPORTING REQUIREMENTS

Data element	Definition
1. Public Water System (PWS) Identification Number.	The code used to identify each PWS. The code begins with the standard two-character postal State abbreviation; the remaining seven characters are unique to each PWS.
2. Sampling Station Type	The sampling station type from which the sample came. The valid choices are: (a) Finished Water from treatment system. (b) Finished/treated water from Entry Point to the distribution system after treatment. (c) Finished/treated water from Within the Distribution System. (d) Finished/treated water from End of the Distribution line with longest residence time. (e) Finished/treated water from household/drinking water tap. (f) Finished/treated water from unknown location. (g) Other Finished/treated water. (h) Raw/untreated water.
3. Water Source Type	The source type represented by the sample. The valid choices are: (a) Surface water from a stream or purchased surface water from a stream. (b) Surface water from a lake or reservoir, or purchased surface water from a lake or reservoir. (c) Ground water under the direct influence of surface water or purchased Ground water under the direct influence of surface water. (d) Ground water or purchased ground water.
4. Sample Identification Number	A unique identifier assigned by the PWS for each sample.
5. Sample Collection Date	The date the sample is collected.
6. Contaminant	The unregulated contaminant for which the sample is being analyzed.
7. Analytical Results—Sign	An alphanumeric value indicating whether the sample analysis result was: (a) (<) ''less than'' means the contaminant was not detected or was detected at a level ''less than'' the MRL. (b) (=) ''equal to'' means the contaminant was detected at a level ''equal to'' the value reported in ''Analytical Result—Value.''
8. Analytical Result—Value	The actual numeric value of the analysis for chemical and microbiological results.
9. Analytical Result—Unit of Measure	The unit of measurement for the analytical results reported. (e.g., micrograms per liter, µg/L; colony-forming units per milliliter, CFU/mL, etc.)
10. Analytical Method Number	The method number of the analytical method used.
11. Public Water System Facility Identification Number—Source Intake/Well, Treatment Plant and Sampling Station.	An identification number established by the State, or, at the State's discretion, the PWS, and unique to the system for an intake for each source of water, a treatment plant and a sampling station. Within each PWS, each intake, treatment plant and sampling point must receive a unique identification number, including, for intake, surface water intake, ground water well or wellfield centroid, and including, for sampling station, entry points to the distribution system, wellhead, intake, or locations within the distribution system. The same identification number must be used consistently through the history of unregulated contaminant monitoring to represent the facility.
12. Public Water System Facility Type	The facility type represented by the water system facility identification number: (a) Intake (for surface water sources). (b) Well or wellfield (for ground water sources). (c) Treatment Plant. (d) Sampling Station. (e) Entry Point to Distribution System. (f) Reservoir. (g) Booster Station. (h) Unknown.
13. Latitude of the Public Water System Facility for Source Intake/Well and Treatment Plant.	The east-west coordinate of each source intake, well or wellfield centroid, and treatment plant associated with a sample expressed as decimal degrees.
14. Longitude of the Public Water System Facility for Source Intake/Well and Treatment Plant.	The north-south coordinate of each source intake, well or wellfield centroid, and treatment plant associated with a sample expressed as decimal degrees.
15. Sample Type	The type of sample collected. Permitted values include: (a) Reference Sample—calibration or QC samples. (b) Field Sample—sample collected and submitted for analysis under this rule. (c) Confirmation Sample—a sample analyzed to confirm an initial contaminant detection. (d) Field Blank—reagent water or other blank matrix placed in a sample container in the laboratory and treated as a sample in all respects, including shipment to the sampling site, storage, preservation, and all analytical procedures. (e) Equipment Blank—samples generated by processing reagent water through the equipment using the same procedures used in the field to demonstrate that the equipment is free from contamination. (f) Split Sample—sample divided into sub-samples submitted to different laboratories or analysts for analysis. (g) Duplicate Sample—two aliquots of the same sample analyzed separately with identical procedures. (h) Spiked Sample—a sample to which known quantities of the method analytes are added.
16. Detection Level	''Detection level'' is referring to the detection limit applied to both the method and equipment. Detection limits are the lowest concentration of a target contaminant that a given method or piece of equipment can reliably ascertain and report as greater than zero (i.e., Instrument Detection Limit, Method Detection Limit, Estimated Detection Limit).

TABLE 1.—UNREGULATED CONTAMINANT MONITORING REPORTING REQUIREMENTS—Continued

Data element	Definition
17. Detection Level Unit of Measure	The unit of measure to express the concentration, count, or other value of a contaminant level for the detection level reported. (e.g., μg/L, colony forming units/mL (CFU/mL), etc.)
18. Analytical Precision	For purposes of the UCMR, Analytical Precision is defined as the relative percent difference (RPD) between spiked matrix duplicates. The RPD for the spiked matrix duplicates analyzed in the same batch of samples as the analytical result being reported is to be entered in this field. Precision is calculated as Relative Percent Difference (RPD) between spiked matrix duplicates using, RPD = $[(X_1 - X_2)/\{(X_1 + X_2)/2\}] \times 100$.
19. Analytical Accuracy	For purposes of the UCMR accuracy is defined as the percent recovery of the contaminant in the spiked matrix sample analyzed in the same analytical batch as the sample result being reported and calculated using; % recovery = [(amt. found in Sp—amt. found in sample) / amt. spiked] $\times$ 100.
20. Presence/Absence	*Chemicals:* Presence—a response was produced by the analysis (i.e., greater than or equal to the MDL but less than the minimum reporting level)/Absence—no response was produced by the analysis (i.e., less than the MDL). *Microbiologicals:* Presence—indicates a response was produced by the analysis /Absence—indicates no response was produced by the analysis.

(e) *How must I report this information*? You must report this information in the electronic or other format specified by the primacy agency.

(f) *Can the laboratory to which I send samples report the results for me*? Yes, as long as the laboratory sends you a copy for review and recordkeeping.

3. Section 141.40 is revised to read as follows:

§ 141.40 Monitoring requirements for unregulated contaminants.

(a) *Requirements for owners and operators of public water systems.*—(1) *Do I have to monitor for unregulated contaminants?*—(i) *Transient systems.* If you own or operate a transient non-community water system, you do not have to monitor for unregulated contaminants.

(ii) *Large systems.* If you own or operate a public water system (other than a transient system) that serves more than 10,000 persons and do not purchase your entire water supply from another public water system, you must monitor as follows:

(A) You must monitor for the unregulated contaminants on List 1 of the Unregulated Contaminant Monitoring List.

(B) You must monitor for the unregulated contaminants on List 2 of the Unregulated Contaminant Monitoring List if notified by your State or EPA regional office that you are part of the screening survey.

(C) You must monitor for the unregulated contaminants on List 3 of the Unregulated Contaminant Monitoring List if notified by your State or EPA regional office that you are part of the pre-screen testing.

(iii) *Small systems.* If you own or operate a public water system (other than a transient system) that serves 10,000 persons or fewer and do not purchase your entire water supply from another public water system, you must monitor as follows:

(A) You must monitor for the unregulated contaminants on List 1 of the Unregulated Contaminant Monitoring List if you are notified by your State or EPA regional office that you are part of the State Monitoring Plan for small systems.

(B) You must monitor for the unregulated contaminants on List 2 of the Unregulated Contaminant Monitoring List if you are notified by your State or EPA regional office that you are part of the screening survey.

(C) You must monitor for the unregulated contaminants on List 3 of the Unregulated Contaminant Monitoring List if you are notified by your State or EPA regional office that you are part of the pre-screen testing.

(2) *How would I be selected for the monitoring under the State Monitoring Plan, the screening survey, or the pre-screen testing?*—(i) *State Monitoring Plan.* Only a representative sample of small systems must monitor for unregulated contaminants. EPA will select a national representative sample of small public water systems in each state through the use of a random number generator. Selection will be weighted by population served within each system water source type (surface or ground water) and system size category (systems serving persons numbering 25–500, 501–3,300, and 3,301–10,000). EPA will also select a small group of systems to be ''index sites.'' Systems selected as index sites provide information about their site and operation that will serve to allow extrapolation of their results to other systems of similar size, rather than collecting detailed information at every small system. Each State will have the opportunity to make some modifications to this selection. You will be notified by EPA or the State that your system is part of the final State Monitoring Plan.

(ii) *Screening Survey.* The purpose of the screening survey is to determine the occurrence of contaminants in drinking water or sources of drinking water for which analytical methods have recently been developed for unregulated contaminant monitoring. EPA will select up to 300 systems to participate in this survey by using a random number generator. You will be notified by EPA or the State that your system has been selected for monitoring under the screening survey.

(iii) *Pre-screen testing.* The purpose of pre-screen testing is to determine the occurrence of contaminants for which EPA needs to determine that new analytical methods can measure their existence in locations most likely to be found. EPA will select up to 200 systems to participate in this testing considering the characteristics of the contaminants, precipitation, system operation, and environmental conditions. You will be notified by EPA or the State that your system has been selected for monitoring under the pre-screen testing program.

(3) *For which contaminants must I monitor?* Lists 1, 2 and 3 of unregulated contaminants are as follows:

TABLE 1.—UNREGULATED CONTAMINANT MONITORING LIST

1—Contaminant	2—CAS Identification No.	3—Analytical methods	4—Minimum reporting level	5—Sampling location	6—Date monitoring to begin
List 1—Assessment Monitoring Organic Chemical Contaminants					
2,4-dinitrotoluene	121–14–2	EPA 525.2[a]	2.4 ug/L[e]	EPTDS[f]	2001–2003
2,6-dinitrotoluene	606–20–2	EPA 525.2[a]	2.0 ug/L[e]	EPTDS[f]	2001–2003
DCPA mono acid degradate	887–54–7	EPA 515.1[a] EPA 515.2[a] D5317–93[b] AOAC 992.32[c]	1.0 ug/L[e]	EPTDS[f]	2001–2003
DCPA di acid degradate	2136–79–0	EPA 515.1[a] EPA 515.2[a] D5317–93[b] AOAC 992.32[c]	1.0 ug/L[e]	EPTDS[f]	2001–2003
4,4′-DDE	72–55–9	EPA 508[a] EPA 508.1[a] EPA 525.2[a] D5812–96[b] AOAC 990.06[c]	0.75 ug/L[e]	EPTDS[f]	2001–2003
EPTC	759–94–4	EPA 507[a] EPA 525.2[a] D5475–93[b] AOAC 991.07[c]	1.2 ug/L[e]	EPTDS[f]	2001–2003
Molinate	2212–67–1	EPA 507[a] EPA 525.2[a] D5475–93[b] AOAC 991.07[c]	0.87 ug/L[e]	EPTDS[f]	2001–2003
MTBE	1634–04–4	EPA 524.2[a] D5790–95[b] SM6210D[d]	5.0 ug/L[g]	EPTDS[f]	2001–2003
Nitrobenzene	98–95–3	EPA 524.2[a] D5790–95[b] SM6210D[d]	12 ug/L[g]	EPTDS[f]	2001–2003
Terbacil	5902–51–2	EPA 507[a] EPA 525.2[a] D5475–93[b] AOAC 991.07[c]	23 ug/L[e]	EPTDS[f]	2001–2003
List 1—Assessment Monitoring Microbiological Contaminants					
Aeromonas Hydrophila	Reserved	Membrane filter, in review.	1 colony forming unit.	(1) Near end of distribution line with longest residence time; (2) at a representative site in the distribution system.	2001–2003

Chemical Contaminant	CAS identification No.	Anticipated analytical methods	Minimum reporting level[e]	Sampling location	Date monitoring to begin
List 2.—Screening Survey: Organic Chemical Contaminants To Be Sampled After Notice of Analytical Methods Availability					
1,2-diphenylhydrazine	122–66–7	EPA 525.2[i]	Reserved[h]	EPTDS[f]	Reserved.[h]
2-methyl-phenol	95–48–7	SPE/GC/MS[l]	Reserved	EPTDS[f]	Reserved.[h]
2,4-dichlorophenol	120–83–2	SPE/GC/MS[l]	Reserved[h]	EPTDS[f]	Reserved.[h]
2,4-dinitrophenol	51–28–5	SPE/GC/MS[l]	Reserved.[h]	EPTDS[f]	Reserved.[h]
2,4,6 trichlorophenol	88–06–2	SPE/GC/MS[l]	Reserved[h]	EPTDS[f]	Reserved.[h]
Acetochlor	34256–82–1	EPA 525.2[i]	Reserved[h]	EPTDS[f]	Reserved.[h]
Alachlor ESA		TBD[h]	Reserved[h]	EPTDS[f]	Reserved.[h]
Diazinon	333–41–5	EPA 525.2[k]	Reserved[h]	EPTDS[f]	Reserved.[h]
Disulfoton	298–04–4	EPA 525.2[k]	Reserved[h]	EPTDS[f]	Reserved.[h]
Diuron	330–54–1	SPE/HPLC/U V[j]	Reserved[h]	EPTDS[f]	Reserved.[h]
Fonofos	944–22–9	EPA 525.2[i]	Reserved[h]	EPTDS[f]	Reserved.[h]
Linuron	330–55–2	SPE/HPLC/U V[j]	Reserved[h]	EPTDS[f]	Reserved.[h]
Prometon	1610–18–0	EPA 525.2[k]	Reserved[h]	EPTDS[f]	Reserved.[h]
Terbufos	13071–79–9	EPA 525.2[k]	Reserved[h]	EPTDS[f]	Reserved.[h]

References:

[a] The version of the EPA methods being approved will be dependant upon the status of the approval of new versions for compliance monitoring. If appropriate regulations approving new versions of EPA compliance monitoring methods are completed prior to the promulgation of this regulation, the following versions of the above methods will be approved. *Methods for the Determination of Organic Compounds in Drinking Water—Supplement III*, EPA–600/R–95–131, August 1995. NTIS PB95–261616. Copies are also available from the National Technical Information Service (NTIS), U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161. The toll-free number is 800–553–6847. If new regulations changing the versions of methods being approved for compliance monitoring are not completed prior to the promulgation of this regulation, then the following versions of the EPA methods are being approved for monitoring under the Unregulated Contaminant Monitoring Rule. Methods 507, 508, and 515.1 are in *Methods for the Determination of Organic Compounds in Drinking Water*, EPA–600/4–88–039, December 1988, Revised, July 1991. Methods 515.2 and 524.2 are in *Methods for the Determination of Organic Compounds in Drinking Water—Supplement II*, EPA/600/R–92/129, August 1992. These documents are available from the National Technical Information Service, (NTIS) U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Virginia 22161 (800) 553–6847. Methods 508.1 and 525.2 are available from US EPA NERL-Cincinnati, Cincinnati, Ohio 45268, (513) 569–7586.

[b] *Annual Book of ASTM Standards*, 1996 and 1998, Vol. 11.02, American Society for Testing and Materials. Method D5812–96 is located in the *Annual Book of ASTM Standards*, 1998, Vol. 11.02. Methods D5790–95, D5475–93, and D5317–93 are located in the *Annual Book of ASTM Standards*, 1996 and 1998, Vol 11.02. Copies may be obtained from the American Society for Testing and Materials, 101 Barr Harbor Drive, West Conshohocken, PA 19428.

[c] Official Methods of Analysis of AOAC (Association of Official Analytical Chemist) International, Sixteenth Edition, 4th Revision, 1998, Volume I, AOAC International, First Union National Bank Lockbox, PO Box 75198, Baltimore, MD 21275–5198. 1–800–379–2622.

[d] 18th and 19th editions of *Standard Methods for the Examination of Water and Wastewater*, 1992 and 1995, American Public Health Association; either edition may be used. Copies may be obtained from the American Public Health Association, 1015 Fifteenth Street NW, Washington, DC 20005.

[e] Minimum Reporting Level determined by multiplying by 10 the least sensitive method's minimum detection limit (MDL=standard deviation times the Student's T value for 99% confidence level with n-1 degrees of freedom), or when available, multiplying by 5 the least sensitive method's estimated detection limit (where the EDL equals the concentration of compound yielding approximately a 5 to 1 signal to noise ratio or the calculated MDL, whichever is greater).

[f] Entry Points to the Distribution System, After Treatment, representing each water source in use over the twelve-month period of monitoring.

[g] Minimum Reporting Levels (MRL) for Volatile Organic Compounds (VOC) determined by multiplying either the published Method Detection Limit (MDL) or 0.5 ug/L times 10, whichever is greater. The MDL of 0.5 ug/L (0.0005 mg/L) was selected to conform to VOC MDL requirements of 40 CFR 141.24(f)(17(E).

[h] To be Determined at a later time.

[i] Compound currently not listed as an contaminant in this method. Methods development currently being conducted in an attempt to add it to the scope of this method.

[j] Methods development currently in progress to develop a solid phase extraction/high performance liquid chromatography/ultraviolet method for the determination of this compound.

[k] Compound listed as being an contaminant using EPA Method 525.2; however, adequate sample preservation is not available. Preservation studies currently being conducted to develop adequate sample preservation.

[l] Methods development currently in progress to develop a solid phase extraction/gas chromatography/mass spectrometery method for the determination of this compound.

Microorganism	Identification No.	Sampling location	Date monitoring to begin
List 3.—Pre-Screen Testing: Contaminants with Analytical Methods Not Anticipated To Be Available by Regulation Implementation			
Cyanobacteria (blue-green algae, other freshwater algae and their toxins)	Reserved [a]	Reserved [a]	Reserved.[a]
Echoviruses	Reserved [a]	Reserved [a]	Reserved.[a]
Coxsackieviruses	Reserved [a]	Reserved [a]	Reserved.[a]
Helicobacter pylori	Reserved [a]	Reserved [a]	Reserved.[a]
Microsporidia	Reserved [a]	Reserved [a]	Reserved.[a]
Caliciviruses	Reserved [a]	Reserved [a]	Reserved.[a]
Adenoviruses	Reserved [a]	Reserved [a]	Reserved.[a]

[a] To be Determined at a later time

(4) *What general monitoring requirements must I follow for List 1 monitoring?*—(i) *All systems.* You must:

(A) Collect samples of the listed contaminants in accordance with paragraph (e) of this section and any other specific instructions provided to you by EPA or the State;

(B) Review the laboratory testing results to ensure reliability; and

(C) Report the results as specified in § 141.35.

(ii) *Large systems.* In addition to paragraph (d)(1) of this section, you must arrange for testing of the samples according to the methods specified for each contaminant in the Unregulated Contaminant Monitoring List and in Appendix A to this section.

(iii) *Small systems.* In addition to paragraph (d)(1) of this section, you must:

(A) Properly receive, store and use the sampling equipment sent to you from the laboratory;

(B) Sample at the times specified by the State or the EPA Regional office;

(C) Collect and pack samples in accordance with the instructions sent to you by the laboratory; and

(D) Send the samples to the laboratory designated by EPA.

(5) *What specific sampling and quality control requirements must I follow for monitoring of List 1 contaminants? (i) All systems.* You must comply with the following requirements:

(A) *Sample collection and shipping time.* If you must ship the samples for testing, you must collect the samples early enough in the day to allow adequate time to send the samples for overnight delivery to the laboratory since some samples must be processed at the laboratory within 30 hours of collection. You must not collect samples on Friday, Saturday or Sunday because sampling on these days would not allow samples to be shipped and received at the laboratory within 30 hours.

(B) *No compositing of samples.* You must not composite (that is, combine, mix or blend) the samples. You must collect, preserve and test each sample separately.

(C) *Review and reporting of results.* After you have received the laboratory results, you must review and confirm the system information and data regarding sample collection and test results. You must report the results as provided in § 141.35.

(ii) *Large systems.* In addition to paragraph (e)(1) of this section, you must comply with the following:

(A) *Timeframe.* You must collect the samples in one twelve-month period during the years indicated in column 6 of the Unregulated Contaminant Monitoring List.

(B) *Frequency.* You must collect the samples according to the following frequency specified by contaminant type and water source type:

Contaminant type	Water source type	Timeframe	Frequency
Chemical	Surface water	12 months	Every three months with one sampling event during the vulnerable time [a].
	Ground water	12 months	Vulnerable time [a] and six (6) months later.
Microbiological	Surface and ground water.	12 months	Vulnerable time [a] and six (6) months later.

[a] Vulnerable time means May 1 through July 31, unless the State or EPA Regional Office informs you that it has selected a different time period as your system's vulnerable time.

(C) *Location.* You must collect samples at the location specified for each listed contaminant in column 5 of the Unregulated Contaminant Monitoring List.

(D) *Sampling instructions.* You must follow the sampling procedure for the method specified in column 3 of the Unregulated Contaminant Monitoring List for each contaminant.

(E) *Testing and analytical methods.* You must use the analytical method specified for each listed contaminant in column 3 of the Unregulated Contaminant Monitoring List, the minimum reporting levels in column 4 of the Unregulated Contaminant Monitoring List, and the quality control procedures specified in appendix A to this section.

(F) *Sampling deviations.* If you do not sample according to the procedures specified for a listed contaminant, you must resample following the procedures specified for the method.

(G) *Testing.* You must arrange for the testing of the contaminants by a laboratory certified under § 141.28.

(iii) *Small systems that are part of the State Monitoring Plan.* In addition to paragraph (a)(5)(i) of this section, you must comply with the following:

(A) *Frequency.* You must collect samples at the times specified for you by the State or EPA regional office, following the frequency specified in paragraph (a)(5)(ii)(B) of this section for the contaminant type and water source type.

(B) *Location.* You must sample at the locations specified for you by the State or EPA regional office.

(C) *Sampling deviations.* If you do not collect a sample according to the instructions provided to you, then you must report the deviation on the sample reporting form that you send to the laboratory with the samples.

(D) *Sample kits.* You must store and maintain the sample collection kits sent to you by the laboratory in a secure place until used for sampling. If indicated in the kit's instructions, you must freeze the cold packs. The sample kit will include all necessary containers, packing materials and cold packs, instructions for collecting the sample and sample treatment (such as dechlorination or preservation), report forms for each sample, contact name and telephone number for the laboratory, and a prepaid return shipping docket and return address label. If any of the materials listed in the kit's instructions are not included or arrive damaged, you must notify the laboratory which sent you the sample collection kits.

(E) *Sampling instructions.* You must comply with the instructions sent to you by the State or EPA Regional office concerning use of containers, collection (how to fill the sample bottle), dechlorination and/or preservation, and sealing and preparing the sample and shipping containers for shipment. You must also comply with the instructions sent to you by the laboratory concerning the handling of sample containers for specific contaminants.

(F) *Duplicate samples.* EPA will select systems in the State Monitoring Plan that must collect duplicate samples for quality control. If your system is selected, you will receive two sample kits that you must use. You must use the same sampling protocols for both sets of samples, following the instructions in the duplicate sample kit.

(G) *Sampling forms.* You must completely fill out the sampling forms sent to you by the laboratory, including the data elements 1 through 9 listed in § 141.35 for each sample. You must sign and date the sampling forms.

(H) *Sample submission.* Once you have collected the samples and completely filled in the sampling forms, you must send the samples and the sampling forms to the laboratory designated in your instructions.

(6) *What additional requirements must I follow if my system is selected as an Index site?* If your system is selected as an index site in the State Monitoring Plan, you must assist EPA or the State in identifying appropriate sampling locations and provide information on which wells and intakes are in use at the time of sampling, well casing and screen depths (if known) for those wells, and the pumping rate of each well or intake at the time of sampling.

(7) *What must I do if my system is selected for the screening survey or pre-screen testing?*—(i) *Large systems.* If your system serves over 10,000 persons, you must collect and arrange for testing of the contaminants in List 2 and List 3 of the unregulated contaminant monitoring list in accordance with the requirements set out in paragraph (a)(4) and (5) of this section. You must send the samples to one of the laboratories designated by EPA in your notification. You must report the test results to the State.

(ii) *Small systems.* If your system serves 10,000 persons or fewer, you must collect samples in accordance with the instructions sent to you by the State or EPA, or, if informed by the State or EPA that the State or EPA will collect the sample, you must assist the State or EPA in identifying the appropriate sampling locations and in taking the samples. EPA will report the test results to you and the State.

(b) *Requirements for State and Tribal Participation*—(1) *How can I as the director of a State or Tribal drinking water program participate in the State Monitoring Plan and Screening Survey for small systems?* You may participate in the selection of systems for the State Monitoring Plan and the timing of monitoring as follows:

(i) *Initial plan.* EPA will first specify the number of systems serving 10,000 or fewer persons by water source and size in an initial plan for each State using a random number generator. EPA will also generate a replacement list of systems for systems that may not have been correctly specified on the initial plan. This initial plan will also indicate the week, month, and year that each system must monitor for the contaminants in List 1 of the

Unregulated Contaminant Monitoring List. EPA will provide you with the initial plan for your State or Tribe, including systems to be index sites and those small systems to be part of the screening survey.

(ii) *State acceptance or modification of the list of systems.* Within 60 days of receiving the initial plan, you may notify EPA that you either accept it as your State Monitoring Plan or request to modify the initial plan by removing systems closed, merged or purchasing water from another system. In place of any such systems, you must use systems from the replacement list in the order listed. Your request must include the modified plan and the reason for replacement of systems. You may also specify an alternative week, month and year in which the monitoring is to occur for each system in the State Plan as long as approximately one-third of the systems in the State Plan must monitor in each year specified in Table 1, column 6. This monitoring may be coordinated with regulated contaminant compliance monitoring at your discretion.

(iii) *State modification of the timing of monitoring.* Within 60 days of receiving the initial plan, you may also modify the plan by selecting an alternative week, month and year for monitoring for each system in the State Monitoring Plan as long as approximately one-third of the systems in the Plan monitor in each year specified in column 6 of the Unregulated Contaminant Monitoring List. This monitoring may be coordinated with regulated contaminant compliance monitoring at your discretion. You must send the modified plan to EPA.

(iv) *Determination of alternate vulnerable time.* Within 60 days of receiving the initial plan, you may also determine that the most vulnerable time of the year for any or all of the systems is different than the May 1 through July 31. If you make this determination, you must modify the State Monitoring Plan to indicate the alternate vulnerable time and to which systems the alternate vulnerable time applies. You must also notify the system(s) of the most vulnerable time of the year that you have specified for them to sample for one of their sampling events. You must notify them at least 90 days before their first unregulated contaminant sampling is to occur.

(v) *Notification of systems.* If you decide to accept or modify the initial plan, you must provide to EPA your plan for notifying each public water system of its selection for the plan and instructions for monitoring. You must provide notification to systems at least 90 days before sampling must occur.

(vi) *No modification.* If you do not accept the initial plan or submit a request to EPA to modify the initial plan within 60 days, the initial plan will become the State Monitoring Plan for your State or Tribe. In that case, you may still notify each public water system of its selection for the plan and instructions for monitoring as long as you notify EPA that you will be undertaking this responsibility.

(2) *What instructions do I provide to systems that are part of the State Monitoring Plan?* If you choose to notify systems that they are part of the State Monitoring Plan, you must send a monitoring schedule to each system listed in the State Monitoring Plan and instructions on location, frequency, timing of sampling, use of sampling equipment, and handling and shipment of samples based on these regulations. EPA will provide you with guidance for these instructions.

(3) *Can I also change the vulnerable time for monitoring of large systems?* Yes. If you desire to change the vulnerable time for monitoring at large systems, then not later than 120 days prior that monitoring, you must send written notification to the EPA Regional Office indicating your State is modifying the most vulnerable time of the year for any or all of the large systems to be different than the period of May 1 through July 31 and specify the vulnerable time for each system to which any modification applies. You must also notify the system(s) of the most vulnerable time of the year that you have specified for them to sample for one of their sampling events. You must notify them at least 90 days before their first unregulated contaminant sampling is to occur.

(4) *How can I participate in monitoring for the Screening Survey for large systems?* Within 120 days prior to sampling, EPA will notify you which systems have been selected to participate in the screening survey, the sampling dates, the designated laboratory for testing, and instructions for sampling. You may choose to notify the selected systems in your State of these screening survey requirements. If you choose to do so, you must notify EPA within 30 days of EPA's notification to you. You must provide the necessary screening survey information to the selected systems at least 90 days prior to the sampling date.

(5) *How can I participate in monitoring for Pre-Screen Testing?* You can participate in pre-screen testing in two ways.

(i) First, within 60 days of EPA's letter to you concerning initiation of Pre-screen testing for specific contaminants, you can identify from 5 up to 25 systems in your State that you determine to be representative of the most vulnerable systems to these contaminants, modify your State Monitoring Plan to include these most vulnerable systems, and notify the EPA Regional Office of the addition of these systems to the State Plan. These systems must be selected from all community and non-transient noncommunity water systems. EPA will use the State-identified vulnerable systems to select up to 200 systems nationally to be monitored considering the characteristics of the contaminants, precipitation, system operation, and environmental conditions.

(ii) Second, within 120 days prior to sampling, EPA will notify you which systems have been selected, sampling dates, the designated laboratory for testing of samples for systems serving 10,000 or fewer persons and approved laboratories for systems serving more than 10,000 persons, and instructions for sampling. You may choose to notify the owner or operator of the selected systems in your State of these pre-screen testing requirements. If you choose to do so, you must notify EPA within 30 days of EPA's notification to you. You must provide the necessary pre-screen testing information to the owner or operator at least 90 days prior to the sampling date.

(6) *Can I add contaminants to the Unregulated Contaminant Monitoring List?* Yes, the SDWA allows Governors of seven or more States to petition the EPA Administrator to add one or more contaminants to the Unregulated Contaminant Monitoring List. The petition must clearly identify the reason for adding the contaminant(s) to the monitoring list, including the potential risk to public health, particularly any information that might be available regarding disproportional risks to the health and safety of children, the expected occurrence documented by any available data, any analytical methods known or proposed to be used to test for the contaminant(s), and any other information that could assist the Administrator in determining which contaminants present the greatest public health concern and should, therefore, be included on the Unregulated Contaminant Monitoring List.

(7) *Can I waive monitoring requirements?* Only with EPA approval and under very limited conditions. Following are the procedures for requesting the only type of waiver available under these regulations.

(i) You may apply to EPA for a state-wide waiver from the monitoring requirements for public water systems serving more than 10,000 persons. To apply for such a waiver, you must submit an application to EPA that includes the following information:

(A) The list of contaminants on the Unregulated Contaminant List for which you request a waiver, and

(B) Documentation demonstrating, for each contaminant in your request, that during the past 15 years it has not been used, stored, disposed of, released, naturally present or detected in the source waters or distribution systems in the State.

(ii) EPA will notify you if EPA determines that you may waive monitoring requirements.

Appendix A to § 141.40—Quality Control Requirements for Testing All Samples Collected

Your system must ensure that the quality control requirements listed below for testing of samples collected and submitted under § 141.40 are followed:

(1) *Sample Collection/Preservation*. Follow the sample collection and preservation requirements for the specified method for each of the contaminants in Table 1. These requirements specify sample containers, collection, dechlorination, preservation, storage, sample holding time, and extract storage and/or holding time that the laboratory must follow. Samples with methods that specify storage at 4°C must be shipped in ice or frozen gel packs.

(2) *Method Detection Limit*. Calculate the laboratory method detection limit (MDLs) for each contaminant in Table 1, List 1, using the appropriate specified method according to procedures in 40 CFR part 136, appendix B with the exception that the contaminant concentration used to fortify reagent water must be less than or equal to the minimum reporting level (MRL) for the contaminants as specified in Table 1 of § 141.40(a)(3). The calculated MDL is equal to the standard deviation times the Student's T value for 99% confidence level with n-1 degrees of freedom. (The MDL must be less than or equal to one-half of the MRL.)

(3) *Calibration*. Perform a three to six point initial calibration depending on the method utilized. Calibration must be verified initially with a low-level standard at a concentration within ±10% of the MRL for each contaminant. Perform a continuing calibration verification following every 10th sample. The calibration verification must be performed by alternating low-level and mid-level calibration standards. The low-level standard is defined as a concentration within ±10% of the MRL with an acceptance range of ±40%. The mid-level standard is in the middle of the calibration range with an acceptance range of ±20%.

(4) *Reagent Blank Analysis*. Analyze one laboratory reagent (method) blank per sample set/batch that is treated exactly as a sample. The maximum allowable background concentration is one-half of the MRL for all contaminants. A field reagent blank is required only for EPA Method 524.2 (or equivalent listed methods, D5790.95 and SM6210D).

(5) *Quality Control Sample*. Obtain a quality control sample from an external source to check laboratory performance at least once each quarter.

(6) *Matrix Spike and Duplicate*. Prepare and analyze matrix spike (MS) for accuracy and matrix spike duplicate (MSD) samples for precision to determine method accuracy and precision for all contaminants in Table 1, List 1. MS/MSD samples must be prepared and analyzed at a frequency of 5% (or one MS/MSD set per every 20 samples) or with each sample batch whichever is more frequent. In addition, the MS/MSD spike concentrations must be alternated between a low-level spike and mid-level spike approximately 50% of the time. (For example: a set of 40 samples will require preparation and analysis of two MS/MSD sets. The first set must be spiked at either the low-level or mid level, and the second set must be spiked with the other standard, either the low-level or mid-level whichever was not used for the initial MS/MSD set). The low-level MS/MSD spike concentration must be within ±10% of the MRL for each contaminant. The mid-level MS/MSD spike concentration must be within ±10% of the mid level calibration standard for each contaminant. There are no acceptance criteria specified for MS/MSD recoveries.

(7) *Internal Standard Calibration*. As appropriate to a method's requirements to be used, test and obtain an internal standard for the methods for each chemical contaminant in Table 1, List 1, a pure contaminant of known concentration, for calibration and quantitation purposes. The methods specify the percent recovery or response that you must obtain for acceptance.

(8) *Method Performance Test*. As appropriate to a method's requirements to be used, test for surrogate compounds, a pure contaminant unlikely to be found in any sample, to monitor method performance. The methods specify the percent recovery that you must obtain for acceptance.

(9) *Detection Confirmation*. Confirm any chemical contaminant detected above the MRL by gas chromatographic/mass spectrometric (GC/MS) methods. If testing resulted in first analyzing the sample extracts via specified gas chromatographic methods, an initial confirmation by a second column dissimilar to the primary column may be performed. If the contaminant detection is confirmed by the secondary column, then the contaminant must be reconfirmed by GC/MS using 3 specified ion peaks for contaminant identification. Use one of the following confirming techniques: (i) perform single point calibration of the GC/MS system for confirmation purposes only as long as the calibration standard is at a concentration within ± 50% of the concentration determined by the initial analysis; or (ii) perform a three point calibration with single point daily calibration verification of the GC/MS system regardless of whether that verification standard concentration is within ± 50% of sample response. If GC/MS analysis confirms the initial contaminant detection, report results determined from the initial analysis.

(10) *Reporting*. Report the analytical results and other data, with the required data listed in § 141.35, Table 1. Report this data electronically to the State or EPA Regional Office, unless the State or EPA Regional Office specifies otherwise. Systems must coordinate with their laboratories for electronic reporting to the State or EPA Regional Office to ensure proper formatting and timely data submission.

PART 142—NATIONAL PRIMARY DRINKING WATER REGULATIONS IMPLEMENTATION

1. The authority citation for part 142 continues to read as follows:

Authority: 42 U.S.C. 300f, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–4, 300j–9, and 300j–11.

2. Section 142.15 is amended by revising paragraph (c)(3) to read as follows:

§ 142.15 Reports by States.

* * * * *

(c) * * *

(3) *Unregulated contaminant monitoring.* The State must report the results from the unregulated contaminant monitoring required under 40 CFR 141.40, including the information identified in 40 CFR 141.35(b) to the National Drinking Water Contaminant Occurrence Data Base. This report must be in an electronic format and sent to EPA through the Safe Drinking Water Information System or other information system specified by the Agency not later than the quarter following receipt of the unregulated contaminant monitoring results from the public water system or its laboratory.

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3. Section 142.16 is amended by revising paragraphs (e) introductory text, (e)(1) introductory text, and (e)(1)(i)(C) to read as follows:

§ 142.16 Special primacy requirements.

* * * * *

(e) An application for approval of a State program revision which adopts the requirements specified in 40 CFR 141.11, 141.23, 141.32, 141.61 and 141.62 must contain the following (in addition to the general primacy requirements enumerated elsewhere in this part, including the requirement that State regulations be at least as stringent as the federal requirements):

(1) If a State chooses to issue waivers from the monitoring requirements in 40 CFR 141.23 and 141.24, the State shall describe the procedures and criteria which it will use to review waiver applications and issue waiver determinations.

(i) * * *

(C) The State decision criteria, including the factors that will be considered in deciding to grant or deny waivers. The decision criteria must include the factors specified in 40 CFR 141.24(f)(8) and 141.24(h)(6).

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