
**Information Collection Request
for the Unregulated Contaminant
Monitoring Rule (UCMR 4)**

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ACRONYMS

µg/L	Microgram per liter
ADDA	(2S, 3S, 8S, 9S, 4E, 6E)-3-amino-9-methoxy-2,6,8-trimethyl-10-phenyl-4,6-decadienoic acid
ASDWA	Association of State Drinking Water Administrators
ASTM	American Society for Testing Materials
BLS	United States Bureau of Labor Statistics
CCL	Contaminant Candidate List
CCR	Consumer Confidence Report
CFR	Code of Federal Regulations
CWS	Community Water System
DBPR	Disinfectants and Disinfection Byproducts Rule
DSMRT	Distribution System Maximum Residence Time
EPA	United States Environmental Protection Agency
ELISA	Enzyme-linked Immunosorbent Assay
EPTDS	Entry Point to the Distribution System
FR	Federal Register
FTE	Full-Time Equivalent
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
GS	General Schedule
GW	Ground Water
GWUDI	Ground Water Under the Direct Influence of Surface Water
HAA _s	Haloacetic Acids
HAA5	Dibromoacetic Acid, Dichloroacetic Acid, Monobromoacetic Acid, Monochloroacetic Acid, Trichloroacetic Acid
HAA6Br	Bromochloroacetic Acid, Bromodichloroacetic Acid, Dibromoacetic Acid, Dibromochloroacetic Acid, Monobromoacetic Acid, Tribromoacetic Acid
HAA9	Bromochloroacetic Acid, Bromodichloroacetic Acid, Chlorodibromoacetic Acid, Dibromoacetic Acid, Dichloroacetic Acid, Monobromoacetic Acid, Monochloroacetic Acid, Tribromoacetic Acid, Trichloroacetic Acid
IC-MS/MS	Ion Chromatography/Tandem Mass Spectrometry
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
ICR	Information Collection Request
LC/MS/MS	Liquid Chromatography/Tandem Mass Spectrometry
LT2	Long Term 2 Enhanced Surface Water Treatment Rule
M	Million
MRL	Minimum Reporting Level
NAICS	North American Industry Classification System
NCOD	National Drinking Water Contaminant Occurrence Database
NPDWR	National Primary Drinking Water Regulation
NTNCWS	Non-Transient Non-Community Water System

OES	Occupational Employment Statistics
OGWDW	Office of Ground Water and Drinking Water
OMB	Office of Management and Budget
OW	Office of Water
PA	Partnership Agreement
PT	Proficiency Testing
PWS	Public Water System
PWSID	Public Water System Identification
QA	Quality Assurance
QA/QC	Quality Assurance/Quality Control
QC	Quality Control
RFA	Regulatory Flexibility Act
SBA	Small Business Administration
SDWA	Safe Drinking Water Act
SIC	Standard Industrial Classification
SM	Standard Methods
SMP	State Monitoring Plan
SPE	Solid Phase Extraction
SRF	State Revolving Fund
SW	Surface Water
SVOC	Semivolatile Organic Chemicals
TNCWS	Transient Non-Community Water System
TOC	Total Organic Carbon
UCMR	Unregulated Contaminant Monitoring Rule

– PART A OF THE SUPPORTING STATEMENT –

1 IDENTIFICATION OF THE INFORMATION COLLECTION

1(a) Title and Number of the Information Collection

Title: Information Collection Request for UCMR 4
OMB Control Number: 2040-0270
EPA Tracking Number: 2192.07

1(b) Short Characterization

Section 1445(a)(2) of the Safe Drinking Water Act (SDWA) requires that once every five years, beginning in 1999, the United States Environmental Protection Agency (EPA) issue a new list of no more than 30 unregulated contaminants to be monitored by public water systems (PWSs). Information collected under the program supports the Agency decision making regarding whether or not to regulate particular contaminants in drinking water. SDWA requires that EPA vary the frequency and schedule for the monitoring program based on the number of persons served, the source of supply, and the contaminants likely to be found. EPA is required by SDWA to only include a representative sample of PWSs serving 10,000 or fewer people. SDWA also requires EPA to enter the monitoring data into the National Drinking Water Contaminant Occurrence Database (NCOD).

EPA published the first Unregulated Contaminant Monitoring Rule (UCMR 1) for PWSs in the *Federal Register* (FR) on September 17, 1999 (64 FR 50556). In addition, EPA published several supplemental rules that established analytical methods, and provided clarifications and refinements to the initial rule. The second UCMR (UCMR 2) published in the FR on January 4, 2007, and the third UCMR (UCMR 3), published in the FR on May 2, 2012 (77 FR 26071), built on the established structure of the previous UCMRs, while making some changes to the rule design. EPA revised the contaminant list, analytical methods, cost assumptions and sampling design for the proposed UCMR 4.

The five-year UCMR 4 period spans 2017-2021. As proposed, UCMR 4 monitoring begins in 2018 and continues through 2020. The applicable three-year period for this particular Information Collection Request (ICR) is 2017-2019. The applicable ICR period overlaps with the first three years of the five year UCMR 4 period. Estimates of implementation burden and

cost over the entire five-year UCMR 4 period (including pre-monitoring activity and post-monitoring reporting) are attached as Appendix B to this ICR.

As proposed, a total of 1,600 PWSs serving 10,000 or fewer people (hereafter referred to as small PWSs), will conduct monitoring: 800 small PWSs served by surface water (SW) or ground water under the direct influence (GWUDI) sources will monitor for 10 List 1 cyanotoxins and a different set of 800 small PWSs served by SW, GWUDI, and ground water (GW) will monitor for 20 Additional List 1 chemicals. All PWSs serving more than 10,000 people will monitor for the 30 List 1 chemicals.¹ EPA pays for all sample kit preparation, sample shipping fees and analysis costs for small PWSs. UCMR 4 List 1 Assessment Monitoring includes monitoring for contaminants for which standard analytical methods or techniques are available.

The UCMR 4 proposed rule does not include a Screening Survey (List 2) or Pre-Screen Testing (List 3) component.

Water systems would be required to collect samples during a continuous 12-month period (excluding December through February) during the sampling time frame. With the exception of cyanotoxin monitoring, sampling would take place every two months for SW and GWUDI systems (a total of four sampling events), and at 6-month intervals for GW systems (a total of two sampling events). For cyanotoxin monitoring, SW and GWUDI systems would collect samples twice a month for four consecutive months (total of eight sampling events). GW PWSs would be excluded from cyanotoxin monitoring.

EPA expects that approximately one-third of the PWSs will monitor during each of the three monitoring years (2018-2020); approximately two-thirds of the PWSs are expected to monitor between 2018-2019. Approximately one-third of the PWSs will monitor during the second (renewal) UCMR 4 ICR period of 2020-2021.

Respondents to UCMR 4 include 1,600 small PWSs (800 for cyanotoxins monitoring and 800 for monitoring of the 20 additional chemicals), 4,292 large and very large PWSs, and 56 states and primacy agencies (referred to collectively as “states” for simplicity), for a total of 5,948 respondents. The frequency of response varies across respondents and years.

Small PWSs selected for UCMR 4 monitoring sample an average of 6.7 times per PWS (*i.e.*, number of responses per PWS) across the three-year ICR period. The estimated burden per response for small PWSs is 2.8 hours. Large PWSs and very large PWSs sample and report an average of 11.4 and 14.1 times per PWS, respectively, across the three-year ICR period. The estimated burden per response for large and very large PWSs, respectively, are 6.1 and 9.9 hours. States incur only labor costs associated with UCMR 4 implementation. State activities are determined through individual Partnership Agreements (PAs) with EPA. EPA assumed that state participation levels would reflect the participation levels that occurred in UCMR 3. States incur

¹ Transient non-community water systems are excluded from Assessment Monitoring under UCMR 4. PWSs served by ground water are excluded from cyanotoxin monitoring.

3.0 responses over the three-year ICR period related to coordination with EPA and PWSs, with an average burden per response of 366.5 hours. In aggregate, during the ICR period, the average response (i.e., responses from PWSs and states) is associated with a burden of 6.9 hours, with a labor plus non-labor cost of \$1,705 per response.

The annual average per respondent burden hours and costs for the ICR period are: small PWSs – 6.2 hours burden at \$171 for labor; large PWSs – 23.3 hours at \$682 for labor, and \$6,047 for analytical costs; very large PWSs – 46.5 hours at \$1,248 for labor, and \$16,298 for analytical costs; and states – 244.3 hours at \$11,598 for labor. Annual average burden and cost per respondent is 23.4 hours, with a labor plus non-labor cost of \$3,470 per respondent.

The annual burden to EPA for UCMR 4 program activities during the ICR years is 11,440 hours, at an annual labor cost of \$905,819. EPA's annual non-labor costs are \$4.4 million. EPA's non-labor costs are primarily attributed to the cost of sample analysis for small PWSs (sample analysis represents approximately 91% of non-labor cost).

2 NEED FOR AND USE OF THE COLLECTION

2(a) Need/Authority for the Collection

As part of its responsibilities under SDWA, EPA implements section 1445(a)(2), Monitoring Program for Unregulated Contaminants. This section, as amended in 1996, requires that once every five years, beginning in August 1999, EPA issue a list of no more than 30 unregulated contaminants to be monitored by PWSs. SDWA requires that EPA enter the monitoring data into the Agency's NCOD. EPA's UCMR program must ensure that only a nationally representative sample of PWSs serving 10,000 or fewer people are required to monitor. EPA must vary the frequency and schedule for monitoring based on the number of persons served, the source of supply and the contaminants likely to be found. EPA is using this authority as the basis for monitoring 29 of 30 contaminants proposed under this rule.

Section 1445(a)(1)(A) of SDWA, as amended in 1996, requires that every person who is subject to any SDWA requirement establish and maintain such records, make such reports, conduct such monitoring and provide such information as the Administrator may reasonably require by regulation to assist the Administrator in establishing SDWA regulations. Pursuant to this provision, EPA can require the monitoring of contaminants already subject to EPA's drinking water standards. EPA is using this authority as the basis for monitoring one of the chemical groups (Haloacetic Acids 5 (HAA5)) proposed under this rule.

The sections from SDWA, discussed in the previous paragraphs, are included as Appendix A of this document, in order by section number.

2(b) Practical Utility/Users of the Data

The UCMR 4 data supports the Administrator's determination of whether to regulate a contaminant through the Regulatory Determination process and, as appropriate, regulation development. If the contaminant has significant occurrence and health effects, EPA uses the results to: support an exposure assessment; establish the baseline for health effects and economic analyses; analyze contaminant co-occurrence; and evaluate treatment technologies, including contaminant source management. The results can suggest that contaminant occurrence is significant enough to initiate research on health effects and treatment technologies. Finally, the data can guide future source water protection efforts.

Each PWS maintains records of the analytical results of this monitoring. EPA-approved laboratories report these results to EPA's electronic data reporting system. PWSs review the information posted by the laboratory and submit the approved data to the state and EPA, via the

electronic reporting system. The data collected through the UCMR program are stored in the NCOD to facilitate analysis and review of contaminant occurrence.

The primary user of the information collected under this ICR is EPA's Office of Water (OW). Other users of this information could include the following:

- Primacy agencies, which include state regulators, Indian tribes, and, in some instances, EPA regional administrators.
- PWS managers.
- Staff from other EPA programs (such as the Office of Superfund Remediation and Technology Innovation; the Office of Resource Conservation and Recovery; the Office of Enforcement and Compliance Assurance; the Office of Pesticide Programs; and the Office of Research and Development).
- Federal Emergency Management Administration.
- Centers for Disease Control and Prevention.
- Military bases.
- Rural Development Administration/Farmers Home Administration.
- Department of Interior.
- Department of Housing and Urban Development.
- United States Army Corps of Engineers.
- White House Task Forces.
- American Water Works Association.
- Association of Metropolitan Water Agencies.
- National Rural Water Association.
- National Association of Water Companies.
- Association of State Drinking Water Administrators (ASDWA).
- Natural Resources Defense Council.
- Consumers Federation of America.
- Small Business Administration (SBA).
- Other environmental and industry groups.
- News organizations.
- Private industries.
- Individuals.

3 NON-DUPLICATION, CONSULTATIONS AND OTHER COLLECTION CRITERIA

3(a) Non-duplication

The data required by UCMR are not available from any other source and are not duplicative of information otherwise accessible to EPA. Under the 1996 amendments to SDWA, Congress established a stepwise risk-based approach for determining which contaminants would become subject to drinking water standards. The first step is the requirement for EPA to publish, every five years, a list of contaminants that are not yet regulated but which are known or anticipated to occur in PWSs; this is the Contaminant Candidate List (CCL). The second step is the requirement for EPA to monitor, every five years, up to 30 unregulated contaminants to determine their occurrence in drinking water systems; this is the UCMR program. The third step is the requirement for EPA to determine, every five years, whether or not at least five contaminants from the CCL warrant regulation, based, in part, on the UCMR occurrence information; these are known as Regulatory Determinations. Finally, SDWA requires EPA to issue national primary drinking water regulations (NPDWRs) for contaminants the Agency has determined should be regulated.

This statutory approach makes clear that Congress designed the CCL and UCMR as complementary programs. The CCL process identifies contaminants that may require regulation, while UCMR helps provide the data necessary for the Regulatory Determination process to determine if a contaminant occurs with a frequency and at levels of public health concern so that there is a meaningful opportunity for health risk reduction. The data collected through UCMR are stored in the NCOD to facilitate analysis and review of contaminant occurrence and support the Administrator's determination on whether to regulate a contaminant in the interest of protecting public health, as required under SDWA section 1412 (b)(1).

3(b) Public Notice Required Prior to ICR Submission to OMB

To comply with the 1995 Amendments to the Paperwork Reduction Act, EPA is seeking public comment on this ICR. To comment on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested approaches for minimizing respondent burden, including the use of automated collection techniques, EPA has established a public docket for UCMR 4, which includes this ICR, under Docket ID No. EPA-HQ-OW-2015-0218. The public can submit any comments related to the ICR for this proposed action to EPA and the Office of Management and Budget (OMB).

3(c) Consultations

EPA's Office of Ground Water and Drinking Water (OGWDW) incorporated early stakeholder involvement in the regulatory development process. In the late 1990s, EPA held meetings for the design and development of both the CCL and UCMR programs. Stakeholders who provided comments concerning the development of the UCMR program include PWSs, states, industry, and other organizations. Seventeen meetings were held concerning UCMR program development. A description of public involvement activities related to UCMR are provided in the September 17, 1999, UCMR Final Rule at 64 FR 50556. Stakeholder meeting feedback and public comment input were considered for both UCMR 2 and UCMR 3.

Specific to the development of UCMR 4, EPA held two public stakeholder meetings. EPA held the first meeting, focused on drinking water methods for CCL contaminants, on May 15, 2013, in Cincinnati, Ohio. Participants included representatives of state agencies, laboratories, PWSs, environmental organizations and drinking water associations. Meeting topics included an overview of the regulatory process (CCL, UCMR and Regulatory Determination) and drinking water methods under development, primarily for CCL contaminants. EPA held a second stakeholder meeting on June 25, 2014, in Washington, DC. Attendees representing state agencies, laboratories, PWSs, tribes, environmental organizations and drinking water associations participated in the meeting via webinar and in person. Meeting topics included the status of UCMR 3, UCMR 4 potential sampling design changes relative to UCMR 3; UCMR 4 candidate analytes and rationale; and the laboratory approval process.

EPA will hold a third public stakeholder meeting (via webinar) after publication of the proposed rule. Topics will include the proposed UCMR 4 monitoring requirements, analyte selection and rationale, analytical methods, the laboratory approval process, and GW representative monitoring plans.

3(d) Effects of Less Frequent Collection

EPA considered a wide range of alternatives for frequency of collection that could still allow the Agency to meet its statutory requirements and overall objectives. Less frequent data collection would affect the integrity of the data and result in insufficient data to fulfill the needs envisioned by the 1996 SDWA Amendments, including the continued development of the CCL, support of the Administrator's regulatory determinations and drinking water regulation development.

Monitoring frequencies are determined based on statutory requirements, which specify that monitoring be varied based on the number of people served by a PWS, contaminants likely to be found and source of water supply. The monitoring frequency design also considers that the number of people served affects exposure to contaminants and considers resources available to undertake monitoring activity. The collection frequencies in this rule are discussed further in section 5(b), part A of this ICR document. Monitoring frequencies have been carefully devised based on the following factors:

- Data quality needed for a representative sample;
- Precision and accuracy needed from the representative sample;
- Number of people served by the PWS;
- Source of the supply (*e.g.*, SW or GW);
- Likelihood of finding contaminants; and
- Temporal variability in occurrence.

The general timing of monitoring and the number of PWSs required to monitor for each component of the UCMR can be found in section 1(b) Part A of this ICR document. More detailed information on monitoring schedules can be found in section 5(d) Part A of this ICR document.

EPA used the statistical design established under UCMR 1 for its UCMR 4 national representative sample of small PWSs (800 PWSs for cyanotoxins, and 800 different PWSs for 20 additional List 1 chemicals) and census of large PWSs for Assessment Monitoring. EPA determined that the combination of a nationally representative sample of small PWSs and a census of large PWSs provides a powerful tool for assessing contaminant occurrence in PWSs; this is the most effective and accurate survey approach. A sample of 800 PWSs from the universe of over 63,000 small PWSs provides a confidence level of 99% with an allowable error of $\pm 1\%$. The set of representative PWSs are distributed among different size categories, but weighted by population served, to ensure that the sample can provide estimates of exposure.

EPA considered larger sample frames because of the many uncertainties involved, but the sample size of 800 was deemed adequate to meet the needs for the national estimate. Smaller sample sizes (*i.e.*, fewer PWSs monitored) were also considered, but rejected. Some population surveys with continuous variables use a lower level of confidence (95%) and/or a larger allowable error. The larger possible error is not acceptable for this program. Examination and analysis of current occurrence data show that many contaminants that are currently regulated, or being considered for regulation occur in a fraction of PWSs on a *national* basis. For many contaminants, low occurrence nationally can correspond to a substantially larger occurrence regionally. Even a small percentage of PWSs with detections can translate into a significant population affected. With a greater margin of error, and the resultant smaller sample size, such occurrence could be missed entirely. EPA made some judgments about the occurrence of contaminants in relation to source waters and different PWS size categories. Many statutes and current regulations differentiate implementation requirements based on PWS size or water source. While combining sampling results from the representative sample of small PWSs with that from all large PWSs provides increased statistical power in the total sample, EPA must be able to evaluate occurrence, and possible regulatory options, related to the small PWSs. SDWA and many current rules focus on burden reduction for small PWSs when feasible. There are many other uncertainties and sources of variance in such a sample program. For example, all contaminants have censored distributions (*i.e.*, “less than detection level” analytical results) and there are a myriad of factors that affect variability and vulnerability of GW PWSs. It remains unclear how

normal sampling theory accommodates these factors. The high confidence level, low allowable error, and larger sample size helps to ensure adequate data to meet the objectives of the UCMR program.

UCMR includes a provision for waivers for large PWSs on a state-wide, chemical-specific basis because some contaminants may not occur in a particular state. Waivers were not considered for small PWSs because eliminating them from the nationally representative sample would compromise the data quality and consistency requirements of a representative sample. The representative sample must provide adequate information on the presence and absence of contaminants for the PWSs sampled. Since EPA pays for this testing, there is no significant burden on small PWSs.

3(e) General Guidelines

This ICR was completed in accordance with the November 2009 version of *EPA's Guide to Writing Information Collection Requests Under the Paperwork Reduction Act of 1995* (hereafter, the "ICR Handbook"). The ICR Handbook was prepared by EPA's Office of Environmental Information, Collection Strategies Division. The ICR Handbook provides the most current instructions for ICR preparation to ensure compliance with the 1995 Paperwork Reduction Act Amendments and OMB's implementing guidelines.

EPA took an approach that minimizes burden on the respondents. This collection complies with all OMB guidelines for information collection activities. Specifically, the respondents are not required to:

- Prepare a written response to a collection of information in fewer than 30 days after receipt of a request.
- Submit more than an original and two copies of any document.
- Retain records, other than health, medical, government contract, grant-in-aid or tax records, for more than three years.
- Participate in a statistical survey that is not designed to produce data that can be generalized to the universe of the study.
- Use a statistical data classification that has not been reviewed and approved by OMB.
- Receive a pledge of confidentiality that is not supported by authority established in statute or regulation, that is not supported by disclosure and data security policies that are consistent with the pledge, or which unnecessarily impedes sharing of data with other agencies for compatible confidential use.
- Submit proprietary, trade secret, or other confidential information unless EPA can demonstrate that it has instituted procedures to protect the information's confidentiality to the extent permitted by law.

3(f) Confidentiality

This information collection does not require respondents to disclose confidential information.

3(g) Sensitive Questions

No questions of a sensitive nature are included in any of the information collection requirements outlined in this ICR.

4 RESPONDENTS AND THE INFORMATION

4(a) Respondents and North American Industry Classification System (NAICS)/Standard Industrial Classification (SIC) Codes

Data associated with this ICR would be collected and maintained by PWSs. States, territories, and tribes with primacy to administer the regulatory program for PWSs under SDWA would participate in UCMR 4 implementation through a PA with EPA. These primacy agencies would sometimes collect samples and maintain records. The North American Industry Classification System (NAICS) code for privately-owned PWSs is 221310. The NAICS code for municipal PWS operators and state agencies that include drinking water programs is 924110 (Administration of Air and Water Resources and Solid Waste Management Programs).

4(b) Information Requested

This ICR summarizes the data items and respondent activities associated with UCMR 4.

4(b)(i) Data Items, including recordkeeping requirements

A discussion of data and other information that are part of the reporting and record keeping requirements for PWSs is found in section 4(b)(i)(a), Part A of this ICR document. The requirements for states are discussed in section 4(b)(i)(b), Part A of this ICR document.

4(b)(i)(a) PWS Reporting and Record Keeping

40 Code of Federal Regulations (CFR) 141.35 requires PWSs that are subject to the UCMR requirements to report monitoring results for the 30 contaminants listed in 40 CFR 141.40 to EPA (see Exhibit 1 for the contaminant list).

Exhibit 1: Proposed UCMR 4 List 1 Analytes

Nine Cyanotoxins	
anatoxin-a	microcystin-LY
cylindrospermopsin	microcystin-RR
microcystin-LA	microcystin-YR
microcystin-LF	nodularin
microcystin-LR	

One Cyanotoxin Group	
total microcystins	
Two Metals	
Germanium	manganese
Nine Pesticides	
alpha-hexachlorocyclohexane	profenofos
chlorpyrifos	tebuconazole
Dimethipin	total permethrin (cis- & trans-)
Ethoprop	tribufos
Oxyfluorfen	
Three Brominated Haloacetic Acid (HAA) Groups	
HAA5	HAA9
HAA6Br	
Three Alcohols	
1-butanol	2-propen-1-ol
2-methoxyethanol	
Three Semivolatile Organic Chemicals (SVOCs)	
butylated hydroxyanisole	quinoline
o-toluidine	

The required data elements are listed in Exhibit 2. All PWSs must electronically report all 26 data elements with their Assessment Monitoring samples. All PWSs participating in UCMR monitoring must inform EPA of any changes to data elements 1 through 9, if applicable.

Exhibit 2: UCMR 4 Proposed Reporting Requirements

1. Public Water System Identification (PWSID) Code	14. Sample Identification Code
2. PWS Name	15. Contaminant
3. PWS Facility Identification Code	16. Analytical Method Code
4. PWS Facility Name	17. Extraction Batch Identification Code
5. PWS Facility Type	18. Extraction Date
6. Water Source Type	19. Analysis Batch ID
7. Sampling Point Identification Code	20. Analysis Date
8. Sampling Point Name	21. Sample Analysis Type
9. Sampling Point Type Code	22. Analytical Results – Sign
10. Disinfectant Type (primary disinfectants)	23. Analytical Result – Measured Value
11. Treatment Information (includes basic treatment information)	24. Additional Value
12. Disinfectant Residual Type (secondary disinfectant residual type added in distribution system)	25. Laboratory Identification Code
13. Sample Collection Date	26. Sample Event Code

4(b)(i)(b) State Reporting and Record Keeping

UCMR 4 is a direct implementation rule; therefore states would not be required to report to EPA. Implementation activities for each state would be identified and determined through PAs with EPA. If participating in a PA, states would voluntarily review and revise Initial State Monitoring Plans (SMPs), notify PWSs of their UCMR responsibilities, and provide EPA with a list of the PWSs notified. These state activities would be completed in 2017. Because states have no specified reporting cycle, this analysis assumes that states have 1.0 response per year during the ICR years, encompassing all communication and coordination activities with EPA and PWSs.

4(b)(ii) Respondent Activities

Respondents include both PWSs and states. PWS and state activities are discussed in sections 4(b)(ii)(a) and 4(b)(ii)(b), respectively (Part A of this ICR document).

4(b)(ii)(a) PWS Activities

To comply with the requirements in this regulation, PWSs would conduct the following activities:

- Read regulations and/or letter from state or EPA which outline requirements;
- Monitor or provide monitoring assistance (*e.g.*, sample collection and shipping);
- Report and maintain records; and
- Report monitoring results to the public.

Each of these activities is discussed in more detail below.

Read Regulations/State Letter: All PWSs participating in UCMR monitoring read the UCMR regulations and/or a state-issued guidance letter during the year in which their monitoring occurs. Small PWSs can rely on summarized information from the state or EPA for information pertaining to the regulation, rather than reading the regulation, because of the more limited scope of their responsibilities.

Monitoring or Monitoring Assistance: Monitoring activities that are considered in the PWS cost and burden estimates include receiving sampling kits from the laboratory, reading sampling instructions, traveling to the sampling location and collecting and shipping the sample.

As noted earlier, cyanotoxin monitoring would occur twice a month for four consecutive months (a total of eight sampling events) for SW and GWUDI systems. For the 20 additional List 1 chemicals, SW and GWUDI systems will sample every two months (four sampling events), and GW systems will sample twice (at 6-month intervals). All monitoring will take place during a continuous 12-month period (excluding December through February, except for resampling), during the sampling time frame.

Sample collection for the UCMR 4 contaminants would take place at the entry point to the distribution system (EPTDS), with the following exceptions/additions. Sampling for “total microcystins,” would also take place at the source water intake (concurrent with the collection of cyanotoxin samples at the EPTDS) unless the PWS purchases 100 percent of their water; “consecutive systems” would only sample for cyanotoxins at their EPTDS. Measurements for temperature and pH would take place at the source water intake (concurrent with total microcystin sampling). HAA sampling would take place in the distribution system. Sampling for Total Organic Carbon (TOC) and bromide would take place at a source water intake (concurrent with HAA sampling in the distribution system).

Large GW PWSs with multiple EPTDSs would only be required to sample at representative sampling locations for each GW source, as long as those sites have been approved by EPA or the state.

Reporting and Record Keeping: Activities related to these reporting requirements include:

- *Reporting Prior to Monitoring-*

Contact and zip code information: Large PWSs would be required to report contact information to EPA. This information includes the name, affiliation, mailing address, phone number and email address for the PWS Technical Contact and PWS Official (*i.e.*, the official spokesperson for a PWS's UCMR activities). Information would be submitted to EPA's electronic data reporting system within a specified time frame after rule promulgation. Small PWSs would provide this information in response to a specific written request that they receive from EPA. As a one-time reporting requirement under UCMR 4, PWSs would be required to report the U.S. Postal Service Zip Code(s) for all areas being served water by the PWS.

Sampling location and inventory information: PWSs would be required to provide sampling location(s) and to associate each source water location with its entry point location(s) prior to sampling. For each sampling location or each approved representative sampling location, PWSs would be required to submit: PWSID Code; PWS Name; PWS Facility Identification Code; PWS Facility Name; PWS Facility Type, Water Source Type; Sampling Point Identification Code; Sampling Point Name; and Sampling Point Type Code.

Representative sampling plan proposal: Some PWSs that use GW as a source and have multiple EPTDSs can monitor at representative sampling location(s), rather than at each EPTDS. To qualify, these GW PWSs must have either the same treatment or no treatment at all of their well sources and they must have an EPTDS for each well within a well field (resulting in multiple EPTDSs from the same source, such as an aquifer). PWSs meeting these criteria would be allowed to submit a proposal to EPA or the state (if such a proposal has not been previously approved). The proposal must demonstrate that any EPTDS selected as representative of the GW supplied from multiple wells was associated with an individual well that draws from the same aquifer as the multiple wells (*i.e.*, those being represented). The representative well must be one of the higher annual volume producing and more consistently active wells in the representative array. If that representative well is not in use at the scheduled sampling time, an alternative representative well must be sampled.

Representative Intakes from Wholesaler: PWSs that purchase water with multiple connections from the same wholesaler would be permitted to monitor from one representative connection from that wholesaler. PWSs would choose a sampling location from among the higher annual volume EPTDS connections. If the

connection selected as the representative EPTDS is not available for sampling, an alternate representative connection would be sampled.

- *Reporting Monitoring Results*

Small PWSs: Small PWSs would only be required to record PWS and sample location information on the sampling forms and bottles that are sent to them by the UCMR Sampling Coordinator. The schedule for submitting this information is specified in the instructions sent to the PWS.

Large PWSs: Laboratories would post the analytical results and associated data elements to EPA’s electronic data reporting system within 120 days of sample collection. Large PWSs must ensure that their laboratory meets this requirement, and those PWSs must review, approve, and submit the data to the state and EPA via the electronic reporting system within 60 days from when the laboratory posts the data. After 60 days from the laboratory's posting, if the PWS has not taken action, the data are considered approved and final for EPA review.

- *Record Keeping*

Section 141.33 requires PWSs to maintain records of chemical monitoring data for 10 years. No changes were made to those record keeping requirements.

Reporting to the Public: SDWA section 1445(a)(2)(E) requires notification of the results of the UCMR program to be made available to those served by the PWS. Community water systems (CWSs) are required to notify their users of the detection of any contaminants (including unregulated contaminants) in their Consumer Confidence Reports (CCRs), pursuant to §141.153(d)(3)(iv), published in 63 FR 44512, August 19, 1998. Monitoring and reporting violations for all PWSs (CWSs, non-transient non-community water systems (NTNCWSs) and transient non-community water systems (TNCWSs)), are reportable under the Public Notification Rule (65 FR 25982, May 4, 2000). No changes were made to these reporting requirements.

4(b)(ii)(b) State Activities

For UCMR 1, EPA estimated state burdens and costs using the 1993 State Resource Model (documented in the “Resource Analysis Computer Program for State Drinking Water Agencies”). That model was designed by EPA in coordination with Association of State Drinking Water Administrators (ASDWA) and required specific input for a list of activities and variables related to state operation of the UCMR drinking water program (*e.g.*, number of PWSs affected, estimates of violation rates, etc.). Since that time, ASDWA updated and improved the previous version of the resource model. EPA used the updated resource model as documented in: “Insufficient Resources for State Drinking Water Programs Threaten Public Health: an Analysis

of State Drinking Water Programs' Resources and Needs" (December 2013), to estimate resources that states may need for the oversight and implementation of UCMR 4. Assumptions that were applied in using this resource assessment tool are described in section 6(b), Part A of this ICR document. EPA assumed that state participation would closely reflect that which occurred during UCMR 3. Therefore, model estimates were adjusted to account for actual levels of prior state participation.

Since UCMR is a direct implementation rule, specifics of each state's role would be delineated in PAs between the states and EPA. State activities include coordination, data management and support, program implementation and training/overhead. Though some states may choose to conduct sampling for their PWSs, this activity is not part of the PA agreement and is optional. Burden for sampling is currently attributed to PWSs. If states choose to conduct monitoring for PWSs, burden would be similar to that estimated for PWSs and would not impact the overall burden estimate.

State Coordination with EPA: State activities that involve coordination with EPA include coordination and development of a PA, review of and response to EPA's proposed SMP, review of PWS proposals for representative GW sampling locations, and general ongoing coordination.

Review of SMPs would be one of the first UCMR activities to take place at the state level. Each state would receive a proposed initial SMP from EPA, which lists all PWSs that would be required to conduct Assessment Monitoring, including small PWSs that were statistically selected as a sample, and all large PWSs subject to the rule by meeting applicability criteria. For PWSs that are part of the sample, EPA would also generate a list to provide similar replacement PWSs for states to select from, for those PWSs that may not have been correctly specified in the initial plan. If a state identifies PWSs on the original proposed SMP that it determines are not appropriate for the representative GW sampling locations (*e.g.*, if PWSs are inactive, or sell all of their water and do not have their own retail customers), the state could propose an alternative plan by selecting other PWSs from EPA's alternate list to replace the ineligible PWSs. The SMPs would also specify the year and months during which PWSs would monitor. States would be given the option to modify these schedules.

EPA assumed that some PWSs that use GW as a source of water would submit a proposal for monitoring at representative sample location(s), rather than monitoring at every EPTDS. State involvement in the review of these proposals would be determined in the PA process.

EPA also recognized that it would be necessary for states to maintain ongoing communications with EPA regarding UCMR requirements. For example, states could need clarification and guidance on a specific requirement of the regulation. These ongoing communication activities are included in estimated burdens across the entire UCMR 4 period of 2017-2021.

Data Management and Support: Though there are no state data management and support activities included in UCMR, EPA recognizes that many states update their databases to

accommodate the revised UCMR data elements. Activities likely include data entry/downloading of data and general record keeping.

Program Implementation: Program implementation activities for each state can include notification and guidance letter to PWSs, data review, ongoing PWS support and enforcement. Following review and finalization of SMPs, participating states would prepare a notification letter that described PWS monitoring schedules and requirements under the regulation. These states would send notification to each applicable PWS and send the list of these notified PWSs to EPA. EPA assumed that PWSs would periodically call states asking for clarification and guidance about UCMR requirements. States can elect to review monitoring results, in part, to determine whether a PWS has met its monitoring and reporting requirements.

State Staff Training and Overhead: EPA assumed that technical staff members would participate in training to assist them in understanding the regulation, their roles and responsibilities, and to allow the state to better provide technical assistance to PWSs. General overhead costs, such as clerical and managerial needs, are allocated to the UCMR staff requirements in ASDWA's estimates of state resource needs, which allocates support staff needs as a percentage of professional staff needs. See section 6(b), Part A of this ICR document, for further discussion of model assumptions.

5 INFORMATION COLLECTED—AGENCY ACTIVITIES, COLLECTION METHODOLOGY AND INFORMATION MANAGEMENT

5(a) Agency Activities

EPA Headquarters and regional offices are responsible for oversight of state PWS programs and processing and analysis of UCMR data. EPA implementation activities are categorized into three major categories: regulatory support activities; program oversight and data analysis; and small PWS testing program, which are described in 5(a)(i)-(iii).

5(a)(i) Regulatory Support Activities

Regulatory support activities include: laboratory approval and quality assurance/quality control (QA/QC); and technical support to PWSs, such as guidance documents.

Laboratory Approval and QA/QC Activities: EPA incurs various costs related to laboratory approval and laboratory quality assurance and control, including the following activities:

- *Laboratory approval/Proficiency Testing (PT) program* - EPA would assess whether laboratories meet the required equipment, laboratory performance and data reporting criteria. EPA would register and evaluate laboratories based on the applications. Selected laboratories would then participate in the UCMR 4 PT program. EPA expects to conduct these laboratory assessments during 2017.
- *QC audits of contract laboratories* - EPA conducts Quality Control (QC) audits at each of the approved laboratories not more than annually during each UCMR 4 monitoring year (January 2017 through December 2019).
- *Analytical standards provision and coordination* - EPA coordinates and distributes specialized analytical standards to participating laboratories.

Technical Support/Guidance Document Development: EPA expects to develop and distribute guidance for laboratory calculations and background information about the health effects (*e.g.*, fact sheets) of UCMR 4 contaminants. EPA expects to provide technical support during 2018 and 2019.

5(a)(ii) National and Regional Oversight/Data Analysis

EPA’s UCMR program activities include data analysis, management oversight and implementation assistance to states. These are key management and oversight activities that must be conducted by EPA Headquarters or its regional offices. Exhibit 3 illustrates the proposed timeline for UCMR implementation activities. EPA expects to develop its PAs with states and the SMPs prior to 2018, when monitoring would begin.

Exhibit 3: Proposed Timeline of UCMR 4 Activities

2017	2018	2019	2020	2021
<p><i>After proposed rule publication:</i> EPA lab approval program begins</p> <p><i>After final rule publication:</i> EPA/state primacy authorities (1) develop SMPs (including the nationally representative sample); and (2) inform PWSs/ establish monitoring plans</p>	<p style="text-align: center;">← Assessment Monitoring →</p> <p style="text-align: center;">List 1 Contaminants</p> <p style="text-align: center;"><i>All large systems serving more than 10,000 people;</i></p> <p style="text-align: center;"><i>800 small systems serving 10,000 or fewer people for cyanotoxins;</i></p> <p style="text-align: center;"><i>800 small systems serving 10,000 or fewer people for the 20 additional chemicals.</i></p>			<p>Complete reporting and analysis of data</p>

5(a)(iii) Costs for Small System Testing Program

Implementation of the small PWS testing program is the largest portion of Agency costs for the UCMR program. Prior to monitoring, EPA activities for logistical support of the small PWS testing program would include coordination of small PWS testing and provision of testing supplies.

During the ICR period, EPA would pay for the sample kit preparation, sample shipping fees and analysis costs.

5(b) Information Collection Methodology and Management

Laboratories report analytical results and associated data elements to EPA's electronic data reporting system. Large PWSs are expected to ensure that their laboratory posts the data in EPA's electronic data reporting system; the PWS then has the opportunity to review, approve, and submit the data to the state and EPA via the EPA electronic reporting system. As proposed, laboratories have 120 days from sample collection to report analytical results and required data elements. PWSs have 60 days from the laboratory's posting to review and approve the reported results. After this, if the PWS has not taken action, the data would be considered approved and final for EPA review. Electronic reporting provides significant collection efficiencies, and reduces the possibility of data input error. This approach has worked well in prior UCMRs.

The UCMR data are maintained and analyzed through NCOD. The data collected under UCMR are used to support regulation development, to analyze the significance of occurrence and health effects, and to support the critical Agency function of program oversight. The public receives information regarding UCMR monitoring results through the CCRs, and will be able to access data through the NCOD. PWSs that fail to monitor for unregulated contaminants must notify the public of their failure to monitor.

EPA conducts ongoing data analysis, which includes checks for anomalies in the data that may be related to data entry or laboratory errors. Data quality review and analysis includes: continuous analysis of laboratory results, review of all program data, and NCOD review.

5(c) Small Entity Flexibility

<p>Note: The following Small Business Regulatory Enforcement Fairness Act analysis summary is the same as that provided in the preamble to the rule. The Regulatory Flexibility Act (RFA) analysis is based on the entire five-year UCMR implementation period of 2017-2021, rather than the three-year ICR period of 2017-2019.</p>
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I certify that this action will not have a significant economic impact on a substantial number of small entities under the RFA. In making this determination, the impact of concern is any significant adverse economic impact on small entities. An agency may certify that a rule will not have a significant economic impact on a substantial number of small entities if the rule relieves regulatory burden, has no net burden or otherwise has a positive economic effect on the small entities subject to the rule.

For purposes of assessing the impacts of this proposed rule on small entities, EPA considered small entities to be PWSs serving 10,000 or fewer people, because this is the system size specified in SDWA as requiring special consideration with respect to small system flexibility. As required by the RFA, EPA proposed using this alternative definition in the FR, (63 FR 7606, February 13, 1998), requested public comment, consulted with the Small Business Administration, and finalized the alternative definition in the Consumer Confidence Reports

rulemaking, (63 FR 44512, August 19, 1998). As stated in that Final Rule, the alternative definition would be applied to future drinking water rules, including this rule.

The evaluation of the overall impact on small systems, summarized in the preceding discussion, is further described as follows. EPA analyzed the impacts for privately-owned and publicly-owned water systems separately, due to the different economic characteristics of these ownership types, such as different rate structures and profit goals. However, for both publicly- and privately-owned systems, EPA used the "revenue test," which compares annual system costs attributed to the rule to the system's annual revenues. EPA used median revenue data from the 2006 CWS Survey for public and private water systems. The revenue figures were updated to 2014 dollars, and to account for three percent inflation. EPA assumes that the distribution of the sample of participating 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 in Exhibit 4.

Exhibit 4: Number of Publicly- and Privately-Owned Small Systems Subject to UCMR 4

System Size (# of people served)	Publicly-Owned	Privately-Owned	Total¹
Ground Water			
500 and under	21	64	85
501 to 3,300	161	62	223
3,301 to 10,000	179	41	220
Subtotal GW	361	167	528
Surface Water (and GWUDI)			
500 and under	18	21	39
501 to 3,300	241	86	327
3,301 to 10,000	548	158	706
Subtotal SW	807	265	1,072
Total of Small Water Systems	1,168	432	1,600

¹ PWS counts were adjusted to display whole numbers in each size category.

The basis for the proposed UCMR 4 RFA certification is as follows: for the 1,600 small water systems that would be affected, the average annual cost for complying with this rule represent no more than 0.8% of system revenues (the highest estimated percentage is for GW systems serving 500 or fewer people, at 0.8% of its median revenue). Exhibit 5 presents the yearly costs to small

systems, and to EPA for the small system sampling program, along with an illustration of system participation for each year of UCMR 4.

Exhibit 5: Implementation of UCMR 4 at Small Systems

Cost Description	2017	2018	2019	2020	2021	Total ¹
Costs to EPA for Small System Program (Assessment Monitoring)						
	\$0	\$5,971,948	\$5,971,948	\$5,971,948	\$0	\$17,915,845
Costs to Small Systems (Assessment Monitoring)						
	\$0	\$273,210	\$273,210	\$273,210	\$0	\$819,630
Total Costs to EPA and Small Systems for UCMR 4						
	\$0	\$6,245,159	\$6,245,159	\$6,245,159	\$0	\$18,735,476
System Monitoring Activity Timeline²						
Assessment Monitoring: Cyanotoxins		1/3 PWSs Sample	1/3 PWSs Sample	1/3 PWSs Sample		800
Assessment Monitoring: 20 Additional Chemicals		1/3 PWSs Sample	1/3 PWSs Sample	1/3 PWSs Sample		800

¹ Totals may not equal the sum of components due to rounding.

² Total number of systems is 1,600. No small system conducts Assessment Monitoring for both cyanotoxins and the 20 additional chemicals.

PWS costs are attributed to the labor required for reading about UCMR 4 requirements, monitoring, reporting, and record keeping. The estimated average annual burden across the five-year UCMR 4 implementation period of 2017-2021 is estimated to be 2.8 hours at \$103 per small system. Average annual cost, in all cases, is no more than 0.8% of system revenues. By assuming all costs for laboratory analyses, shipping, and QC for small entities, EPA incurs the entirety of the non-labor costs associated with UCMR 4 small system monitoring, or 96% of total small system testing costs. Exhibits 6 and 7 present the estimated economic impacts in the form of a revenue test for publicly- and privately-owned systems.

Exhibit 6: UCMR 4 Relative Cost Analysis for Small Publicly-Owned Systems (2017-2021)

System Size (# of people served)	Annual Number of Systems Impacted ¹	Average Annual Hours per System (2017-2021)	Average Annual Cost per System (2017-2021)	Revenue Test ²
Ground Water Systems				
500 and under	4	1.6	\$59	0.16%
501 to 3,300	32	1.7	\$63	0.04%
3,301 to 10,000	36	1.9	\$67	0.01%
Surface Water (and GWUDI) Systems				
500 and under	4	3.3	\$118	0.17%
501 to 3,300	48	3.3	\$118	0.04%
3,301 to 10,000	109	3.4	\$123	0.01%

¹ PWS counts were adjusted to display as whole numbers in each size category.

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.

Exhibit 7: UCMR 4 Relative Cost Analysis for Small Privately-Owned Systems (2017-2021)

System Size (# of people served)	Annual Number of Systems Impacted ¹	Average Annual Hours per System (2017-2021)	Average Annual Cost per System (2017-2021)	Revenue Test ²
Ground Water Systems				
500 and under	13	1.6	\$59	0.81%
501 to 3,300	12	1.7	\$63	0.05%
3,301 to 10,000	8	1.9	\$67	0.01%
Surface Water (and GWUDI) Systems				
500 and under	4	3.3	\$118	0.29%
501 to 3,300	17	3.3	\$118	0.04%
3,301 to 10,000	32	3.4	\$123	0.01%

¹ PWS counts were adjusted to display as whole numbers in each size category.

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.

The Agency has determined that 1,600 small PWSs (for Assessment Monitoring), or approximately 4.2% of small systems, would experience an impact of less than 0.8% of revenues; the remainder of small systems would not be impacted.

Although this proposed rule will not have a significant economic impact on a substantial number of small entities, EPA has attempted to reduce the impact of this rule on them. EPA will assume all costs for analyses of the samples and for shipping the samples from small systems to laboratories contracted by EPA to analyze UCMR 4 samples (the cost of shipping is now included in the cost of each analytical method). EPA has set aside \$2.0 million each year from the Drinking Water State Revolving Fund (SRF) with its authority to use SRF monies for the purposes of implementing this provision of SDWA. Thus, the costs to these small systems will be limited to the labor hours associated with collecting a sample and preparing it for shipping.

We have therefore concluded that this action will have no significant net regulatory burden for all directly regulated small entities. The Agency continues to be interested in the potential impacts of the proposed rule on small entities and welcomes comments on issues related to such impacts.

5(d) Collection Schedule

Public water systems would be required to collect samples during a continuous 12-month period (excluding December through February) during the sampling time frame. With the exception of cyanotoxin monitoring, sampling would take place every two months, for SW and GWUDI systems (a total of four sampling events), and at 6-month intervals for GW systems (a total of two sampling events). For cyanotoxin monitoring, SW and GWUDI systems would collect samples twice a month for four consecutive months (total of eight sampling events). GW systems would be excluded from cyanotoxin monitoring.

The Assessment Monitoring sampling time frame would take place during the compressed period of March through November to better characterize occurrence in drinking water; EPA anticipates that sampling in the December through February period would not accurately reflect occurrence for some of the contaminants, particularly pesticides and cyanotoxins. Therefore, no sampling will take place during the months of December, January or February, except for resampling purposes.

Sample collection for the UCMR 4 contaminants would take place at the EPTDS, with the following exceptions/additions. EPA is proposing a phased sample-analysis approach for microcystins to reduce analytical costs (i.e., PWSs must collect all required samples for each sampling event but not all samples may need to be analyzed). Initially, source water intake samples (collected by “non-consecutive” SW and GWUDI PWSs) would be analyzed for total microcystins with an ADDA-based ((2S, 3S, 8S, 9S, 4E, 6E)-3-amino-9-methoxy-2,6,8-trimethyl-10-phenyl-4, 6-decadienoic acid) Enzyme-linked Immunosorbent Assay (ELISA) methodology. If the source water intake ELISA result is less than 0.3 micrograms per liter (µg/L)

(i.e., the reporting limit for total microcystins), then the other collected samples (from the EPTDS) would not be analyzed for that sample event and only that source water result would be reported to EPA. If the ELISA result from the source water intake is greater than or equal to 0.3 µg/L, that result would be reported to EPA and the sample from the EPTDS would then also be analyzed for total microcystins by ELISA. (ELISA analysis of the EPTDS sample would be the first step for consecutive systems.) If the EPTDS ELISA result is less than 0.3 µg/L, then no additional analyses would be needed for that particular sample event and that result would be reported to EPA. If the EPTDS ELISA result is greater than or equal to 0.3 µg/L, then that result would be reported to EPA and the other microcystin sample collected at the EPTDS would be analyzed using EPA Method 544, to identify particular microcystin congeners. Measurements for temperature and pH would take place at the source water intake (concurrent with total microcystin sampling).

This phased sample-analysis approach for microcystins has the potential to achieve significant cost savings. A similar approach is not feasible for cylindrospermopsin and anatoxin-a samples. Therefore, EPA proposes that cylindrospermopsin and anatoxin-a sampling be conducted simultaneously with the microcystins, twice a month for four consecutive months only at the EPTDS, and that the samples be analyzed using EPA Method 545.

HAA sampling would take place in the distribution system. Sampling for TOC and bromide would take place at a single source water intake (concurrent with HAA sampling in the distribution system). The TOC and bromide data, along with the disinfectant type and water treatment information, would aid in the understanding of brominated HAA formation.

EPA proposes that PWSs monitor for HAAs only in the distribution system. If the system's treatment plant/water source is subject to sampling requirements under 40 CFR 141.622 (monitoring requirements for Stage 2 DBPR), the water systems must collect samples for the HAAs at the sampling locations identified for that rule (71 FR 388, January 4, 2006). If a treatment plant/water source is not subject to Stage 2 DBPR monitoring, then the water system must collect HAA distribution system samples at a location that represents the distribution system maximum residence time (DSMRT). UCMR 4 HAA samples and HAA Stage 2 DBPR compliance monitoring samples may be collected by the PWS at the same time. However in such cases, PWSs would need to arrange for UCMR 4 HAA samples to be analyzed by an approved lab using EPA Method 552.3; this is one of multiple method options for analysis of Stage 2 DBPR samples.

For purposes of total-microcystin sampling, temperature and pH measurement, and TOC and bromide sampling, EPA defines source water under UCMR as untreated water entering the water treatment plant (i.e., a location prior to any treatment). Systems that are subject to Long Term 2 Enhanced Surface Water Treatment Rule (LT2) should use their source water sampling site(s) (71 FR 654, January 5, 2006). Systems subject to Stage 1 Disinfectants and Disinfection Byproducts Rule (DBPR) should use their TOC source water sampling site(s) (66 FR 3770, January 16, 2001). TOC source water sampling site(s) were set under Stage 1 DBPR and remain

unchanged under Stage 2 DBPR. If a system has two different source water sampling locations for LT2 and Stage 1 DBPR, the system should select the sample point that best represents the definition of source water sample location(s) for UCMR.

With the exception of the increased sample frequency, phased sample-analysis for microcystins, revised sampling locations, and the compressed monitoring schedule, the approach to UCMR 4 Assessment Monitoring remains consistent with that for UCMR 3.

Large system schedules (year and months of monitoring) would initially be determined by EPA in conjunction with the states; these PWSs would have an opportunity to modify this schedule for planning purposes or other reasons (e.g., to conduct monitoring during the months the system or the state believes the PWS is most vulnerable, because of budget constraints, if a sampling location will be closed during the scheduled month of monitoring, etc.). EPA proposes to schedule and coordinate small system monitoring, working closely with partnering states. SMPs provide an opportunity for states to review and revise the initial sampling schedules that EPA proposes.

UCMR activities that occur after 2019 are not included in the body of this ICR analysis. Appendix B contains estimations for the five-year UCMR 4 period, 2017-2021. Exhibits 3 and 9 illustrate the timeline of general UCMR activities, and PWS monitoring activities, respectively.

6 ESTIMATING THE BURDEN AND COST OF THE COLLECTION

This section describes the respondent burden and cost for activities under UCMR 4. The burden and cost estimates for PWSs are shown in section 6(a), burden and costs to states are shown in section 6(b), and the Agency's burden and cost estimates are shown in section 6(c) (all in Part A of this ICR document).

The body of this ICR focuses only on the cost of the UCMR data collection over the years 2017-2019. Cost tables that are presented in this section have analogous tables in Appendix B, which present costs for the entire monitoring period (2017-2021).

There are two primary categories of costs associated with UCMR: (1) labor costs, such as program implementation, sample collection, record keeping, reporting and data analysis; and (2) non-labor costs, such as laboratory fees for analyses of samples, shipping charges and contractor costs. The majority of costs are directly attributed to the fees for laboratory analytical services.

EPA is committed to accurately characterizing the burden and costs of rules it promulgates. In the development of various drinking water program rule ICRs, EPA developed a consistent set of assumptions to use in calculations. These have been developed and utilized in other drinking water program evaluations. Pertinent to the UCMR ICR are the standard assumptions for labor rates, PWS inventory numbers (the number of PWSs in the various size categories by primary water source), the number of sampling points for each PWS and analytical services. The sources and assumptions used in estimating costs and burdens are described in this section.

6(a) Estimating Burden and Cost to PWSs

Specific assumptions used in estimating PWS labor burden and cost, as well as non-labor costs are discussed in sections 6(a)(i) and 6(a)(ii), respectively (Part A of this ICR document). A summary of the cost estimates is provided in section 6(a)(iii), Part A of this ICR document.

EPA used the following sources of PWS information to develop cost and burden estimates:

- *Inventory Data:* CWS and NTNCWS inventory was based on a September 30, 2014, inventory extract from SDWIS/Fed.
- *EPTDS Data:* All EPTDS data were taken from the Community Water System Survey Volume II: Detailed Tables and Survey Methodology (<http://water.epa.gov/infrastructure/drinkingwater/pws/upload/cwssreportvolumeI2006.pdf>).
- *DSMRT Data:* The number of DSMRT samples per PWS is based on the number of samples required to be collected for the Stage 2 DBPR. The Stage 2 DBPR and UCMR 4 PWS size categories differ for the large PWSs. Under the Stage 2

DBPR, SW or GWUDI PWSs serving more than 100,000 people, are binned into four different size categories. PWSs in these size categories collect Stage 2 DBPR samples from eight, 12, 16, or 20 locations per monitoring period. Because the UCMR 4 has only one size category for PWSs serving more than 100,000 people, EPA used an average number of sample locations to determine costs, and assumes that all SW or GWUDI PWSs in this size category would collect samples from 14 locations. GW PWSs serving over 100,000 people collect samples from either six or eight locations under the Stage 2 DBPR. EPA used an average of seven samples for the cost estimates for the UCMR 4, for those GW PWSs serving more than 100,000 people. This may overestimate the number of samples required for some PWSs, while underestimating the number of samples required for others.

6(a)(i) Estimating Burden and Labor Costs

The general timing of monitoring was discussed in section 1(b) of Part A of this document (Short Characterization). The UCMR program affects approximately 5,892 PWSs, roughly two-thirds of which will conduct monitoring in 2018 and 2019. Exhibit 8 presents the estimated numbers of regulated PWSs expected to participate. Exhibit 9 presents the timeline in which the PWS monitoring activities take place.

While developing the cost estimates for UCMR 3, some public commenters suggested that EPA underestimated PWS burden. In response to these comments, EPA reviewed the UCMR burden estimates against burden estimates used in recently published drinking water rules. In all aspects of burden assumptions (e.g., time allotted for reading rule requirements, sampling reporting, etc.), the UCMR estimates were on par with, or more conservative (higher) than estimates made for other drinking water regulations. For UCMR 4, EPA re-examined all cost estimates and assumptions to ensure that the most recently available data were used. All PWS burden estimates represent average burden hours, which include SW and GWUDI PWSs that may have very few sampling points, and thus lower sampling burden, as well as those PWSs with higher numbers of sampling points that would therefore have greater sampling activity labor burden. A PWS's burden is primarily incurred during its one year of required UCMR monitoring. However, in compliance with the requirements of the Paperwork Reduction Act (44 U.S.C. 3501 et seq.), these cost and burden estimates are presented as an average over the applicable three-year ICR period. Small PWSs have the lowest burden because of the smaller size of their infrastructure, and because these PWSs receive a great deal of direct assistance from EPA and/or their state.

Exhibit 8: Systems to Participate in UCMR 4 Monitoring

System Size (# of people served)	National Sample Assessment Monitoring		Total # of Systems per Size Category
	10 List 1 Cyanotoxins	20 Additional List 1 Chemicals	
Small Systems¹			
25 – 10,000	800 randomly selected SW or GWUDI systems	800 randomly selected SW, GWUDI and GW systems	1,600
Large Systems²			
10,001 and over	All SW or GWUDI systems (1,987)	All SW, GWUDI and GW systems (4,292)	4,292
TOTAL	2,787	5,092	5,892

¹Total for small systems is additive because these systems would only be selected for one component of UCMR 4 sampling (10 cyanotoxins or 20 additional chemicals). EPA would pay for all analytical costs associated with monitoring at small systems.

²Large system counts are approximate. The number of large systems is not additive. All SW and GWUDI systems would monitor for cyanotoxins; those same systems would also monitor for the 20 additional List 1 chemicals, as would the large GW systems.

Exhibit 9: UCMR 4 Sampling Activity Timeline for Cost and Burden Estimations

UCMR 4 – 2017 – 2021				
2017	2018	2019	2020	2021
<i>Designated ICR Years</i>				
No UCMR Monitoring Activity	Assessment Monitoring ¹			No UCMR Monitoring Activity
	~ 1/3 of PWSs sample	~ 1/3 of PWSs sample	~ 1/3 of PWSs sample	

¹The following assumptions, based on the specifications in UCMR 4, were used to estimate cost and burden:

- All Assessment Monitoring PWSs would conduct sampling evenly across March 2018-November 2020 (i.e., one-third in each of the three consecutive periods).
- Approximately two-thirds of PWSs would conduct monitoring in the current ICR years of 2018 and 2019, and approximately one-third of PWSs would conduct monitoring during the ICR years of 2020-2022.

The PWS labor burden consists of three primary activities: (1) reading the regulations or state guidance letter; (2) monitoring or monitoring assistance; and (3) reporting and record keeping.

Hourly labor rates (including overhead) are taken from the Bureau of Labor Statistics (BLS), National Occupational Employment and Wage Estimates, United States, BLS SOC Code 51-8031, "Local Government - Water and Liquid Waste Treatment Plant and System Operators". May 2013 data (published in April 2014). <http://stats.bls.gov/oes/current/oes518031.htm>. The

local government Occupational Employment Statistics (OES) Designation of \$22 was multiplied by a loading rate of 1.6 to account for benefits to remain consistent with the estimates used by the renewal ICR for the drinking water regulations (in progress). The wage rate was then escalated to 2014 dollars. Thus, the hourly wage rate for all PWSs was estimated to be \$36.

6(a)(i)(a) Reading the Regulations/Guidance Letter

EPA assumed that PWSs read the regulations and/or a state-issued guidance letter during the year in which PWSs monitor. Approximately two-thirds of PWSs would therefore read the regulations or a state-issued guidance letter in 2018 and 2019. Small PWSs can rely on the state and EPA for information pertaining to their requirements, rather than reading the regulation; EPA assumed small PWSs would spend one hour, on average, reading the letter or guidance. EPA assumed that PWSs serving more than 10,000 people read the regulation and information from the state, requiring on average four hours. National costs are estimated by multiplying the average burden hours by the average PWS labor rate, times the number of PWSs affected. Small PWSs would only be selected to monitor for the 10 cyanotoxins or the 20 additional Assessment Monitoring chemicals. Each small PWS selected to monitor would have one hour to read a letter or guidance document. All large and very large PWSs served by SW or GWUDI are expected to monitor for the 10 cyanotoxins. All large and very large PWSs also monitor for 20 additional Assessment Monitoring chemicals. The large and very large PWSs may need extra time to read about and understand the cyanotoxin and HAA monitoring requirements because the requirements differ from the other Assessment Monitoring chemicals; thus, these PWSs are allotted four hours for this purpose. This may overestimate burden for some of these PWSs, thus EPA is providing a conservative cost estimate.

6(a)(i)(b) Monitoring Burden

Exhibit 9 provides an illustration of the timeline for PWS sampling activity. For Assessment Monitoring, EPA assumed that each PWS would incur an estimated burden of 0.5 hours per sampling point to collect samples for analysis. EPA assumed that PWSs would not be able to collect all samples at the same time or at the same locations. The monitoring burden includes separate sample collection burden estimates for PWSs to collect EPTDS samples and certain distribution samples. PWSs will also need additional time to collect cyanotoxins samples at the EPTDS and at source water locations. EPA assumed that PWSs would collect source water TOC and bromide samples at the same time as HAA samples. Since PWSs may collect some samples at the same time, the burden estimate may overestimate the time needed for some PWSs and therefore, EPA is providing a conservative cost estimate.

The monitoring burden for Assessment Monitoring includes receipt of monitoring kit, reading laboratory instructions, travel time to collect samples and collection and shipping of samples. It is calculated by: (hour burden per sampling point) times (number of sampling points) times (number of PWSs) times (number of sample events per year). This estimate is an average. Some PWSs need less than 0.5 hours per sampling point to collect a sample, while other PWSs need

more time. Many GW PWSs realize savings in their sampling burden as a result of the allowance for representative sample points. Thus, sampling burden accounts for the estimated reduction in entry points where these PWSs will sample (as described in section 6(a)(ii), Part A of this ICR document). Certain PWSs that purchase all of their water from a single wholesaler, and that have more than one connection to that wholesaler, may elect to sample from only one entry point. Because this cost savings has not been factored into the cost estimates, the sampling costs are conservative.

6(a)(i)(c) Reporting and Record Keeping

PWSs would be required to report specific information prior to monitoring, and would be required to report some information with their monitoring results.

- *Reporting Prior to Monitoring:* As with the reading burden (described above, in Section 6(a)(i)(a)), all initial reporting prior to UCMR 4 monitoring (including proposals for representative EPTDSs) would be completed in 2017.

Small PWSs: EPA assumed that small PWSs would send contact and sampling point information prior to monitoring. EPA estimated this one-time reporting burden would take PWSs two hours.

Large SW (and GWUDI) PWSs: EPA assumed that large SW and GWUDI PWSs would send contact and sampling point information prior to monitoring. EPA allotted a one-time reporting burden of six hours.

Large GW PWSs: EPA assumed that large GW PWSs would send contact and sampling point information, which would require a one-time burden of six hours. An additional eight hours were allotted to some GW PWSs to account for compilation and submission of GW representative sampling locations proposals. Since it was unlikely that all PWSs would submit these proposals, EPA conservatively assumed that half of GW PWSs serving 10,001 to 100,000 people would compile and submit this proposal; EPA assumed that all GW PWSs serving more than 100,000 people would submit these proposals.

- *Reporting with Monitoring Results*

Small PWSs: Small PWSs can review their UCMR monitoring results, but would not be required to do so. Some PWSs may not review sample results at all, while others may review the sample results in detail. As a conservative assumption, EPA estimated that it would take each small PWS 0.5 hours per sampling period for data review.

Large PWSs: Large PWSs are expected to review, approve, and submit the data to the state and EPA via the EPA electronic reporting system. EPA assumed it would take these PWSs two hours per sampling period for data review and submission.

6(a)(i)(d) Public Notification

PWSs are required to notify their consumers of the detection of any unregulated contaminants. CWSs must report UCMR monitoring results in CCRs (63 FR 44512 (August 19, 1998)). CWSs and NTNCWSs must report any failure to monitor for unregulated contaminants required through UCMR under the Public Notification Rule (65 FR 25982, May 4, 2000). No additional public notification burden is assumed under UCMR.

6(a)(ii) *Estimating Non-labor Costs*

Under UCMR, small PWSs only incur labor costs. By design of the rule, EPA will assume all costs for analyses of the samples and for shipping the samples from small systems to laboratories contracted by EPA to analyze UCMR 4 samples (the cost of shipping is now included in the cost of each analytical method).

Thus, the laboratory analysis and shipping cost estimates described here are the basis for EPA and large PWS non-labor costs. Separate shipping fees are no longer calculated for UCMR 4. Laboratories that provided method costs estimates informed EPA that the cost of shipping is generally included in the method costs. Laboratories provide PWSs with pre-paid shipping labels so samples can be shipped back to the laboratory for analysis.

The most significant cost associated with the implementation of UCMR is the cost of laboratory services for sample analysis. Estimates of laboratory analytical costs associated with the analysis of each sample are presented in this section. UCMR 4 sampling and analysis does not coincide with other compliance monitoring. EPA estimates are based on consultations with national drinking water laboratories.

For those PWSs that collect samples for cyanotoxins, not all samples collected would necessarily need to be analyzed. Initially, source water intake samples would be analyzed for total microcystins with an ADDA-based ELISA methodology. If the source water intake ELISA result is less than 0.3 µg/L (i.e., the reporting limit for total microcystins), then the other collected samples (from the EPTDS) would not be analyzed for that sample event and only that source water result would be reported to EPA. If the ELISA result from the source water intake is greater than or equal to 0.3 µg/L, that result would be reported to EPA and the sample from the EPTDS would then also be analyzed for total microcystins by ELISA. (ELISA analysis of the EPTDS sample would be the first step for consecutive systems.) If the EPTDS ELISA result is less than 0.3 µg/L, then no additional analyses would be needed for that particular sample event and that result would be reported to EPA. If the EPTDS ELISA result is greater than or equal to

0.3 µg/L, then that result would be reported to EPA and the other microcystin sample collected at the EPTDS would be analyzed using EPA Method 544, to identify particular microcystin congeners. Samples for cylindrospermopsin and anatoxin-a sampling would be conducted twice a month for four consecutive months only at the EPTDS, and those samples would be analyzed only by EPA Method 545.

To estimate the percentage of positive samples, and the percentage of samples that would need to be subsequently analyzed, EPA discussed the matter with several states that have been affected by algal blooms and associated cyanotoxins. Based on those discussions, EPA estimated that 20 percent of the source water intake ELISA samples would be positive, and the corresponding EPTDS samples would need to be analyzed. EPA then assumed that two percent of the EPTDS samples would be positive, and the EPTDS samples would need to be analyzed using Method 544. Measurements for temperature and pH would take place at the source water intake (concurrent with total microcystin sampling). Consecutive SW and GWUDI PWSs are not expected to collect source water intake samples.

Exhibit 10 shows the analytical costs per sample.

Exhibit 10: Assessment Monitoring (List 1) Analytical Costs

Method Type	Average Analysis Cost per UCMR 4 Sample ¹
3 Alcohols using EPA Method 541 (Gas Chromatography/Mass Spectrometry (GC/MS))	\$337
Bromide ²	\$55
3 Brominated HAA Groups using EPA Method 552.3 (Gas Chromatography (GC) or 557 (Ion Chromatography/Tandem Mass Spectrometry (IC-MS/MS))	\$194
One Cyanotoxin group using ELISA	\$163
7 Cyanotoxins using EPA Method 544 (Solid Phase Extraction (SPE) Liquid Chromatography/Tandem Mass Spectrometry(LC/MS/MS))	\$445
2 Cyanotoxins using EPA Method 545 (LC/MS/MS)	\$428
2 Metals using EPA Method 200.8 (Inductively Coupled Plasma Mass Spectrometry (ICP-MS))	\$80
9 Pesticides and a Pesticide Byproduct using EPA Method 525.3 (SPE GC/MS)	\$415
3 Semivolatile Organic Chemicals using EPA Method 530 (GC/MS)	\$384
TOC (TBD) ²	\$61
Total	\$2,562

¹The average analytical cost for Assessment Monitoring was determined by averaging estimates provided by three drinking water laboratories.

²TOC and Bromide are HAA indicators and are analyzed using methods to be determined by PWSs and their laboratories. TOC methods include: Standard Method (SM) 5310 B or 5310 B-00, SM 5310 C or 5310 C-00, SM 5310 D or 5310 D-00, EPA Method 415.3 (Rev. 1.1 or 1.2) (40 C.F.R. § 141.131 (d)(3)). Bromide methods include: EPA Methods 300.0, 300.1, 317.0 (Rev. 2.0), 326.0 or American Society for Testing Materials (ASTM) D 6581-00) (40 C.F.R. § 141.131 (d)(2)).

The UCMR 4 proposal specifies that some samples be collected at EPTDSs. Some large PWSs that use GW sources and have multiple EPTDSs may be able to realize significant savings by sampling representative sample point(s) rather than sampling each EPTDS. PWSs must meet certain PWS configuration criteria; submit a proposal regarding representative sample points; and receive approval from EPA or the state. Labor related to submission and coordination of these proposals is discussed in section 6(a)(i)(c), Part A of this ICR document. To account for the savings on laboratory fees that will be realized by large GW PWSs, EPA assumed that large PWSs would sample approximately 75% of the current EPTDSs, and that very large PWSs would sample at 50% of the current EPTDS.

PWSs that purchase all of their water from a wholesale PWS, and that have more than one intake from that wholesaler may collect EPTDS samples from a representative intake. The representative site has to be one of the higher annual volume EPTDS connections. Because this

is the first time this allowance has been made, EPA did not attempt to estimate the number of PWSs that would take advantage of this allowance. Thus, the cost estimates presented in this ICR are conservative.

Total laboratory and shipping fees were estimated per required sampling location, per sampling event, as follows: (number of PWSs) times (number of periods per year) times (number of sampling points per PWS) times (method and shipping costs).

6(a)(iii) Summary of Labor and Non-labor Costs to PWSs

Exhibit 11a displays a summary of labor and non-labor costs, by year, for the three-year ICR period. Analogous information presenting estimated costs over the five-year UCMR 4 implementation period is provided in Exhibit B-1a, in Appendix B. Small PWSs incur labor costs only. Large PWSs incur both labor and non-labor costs.

The nationwide cost to PWSs for implementing the total UCMR program over the three-year ICR period is \$67.1 million. Large and very large PWSs incur about 99% of the total PWS cost, \$66.6 million. Annual cost per small PWSs for UCMR implementation over the three-year ICR period is \$171 per PWSs, all attributed to labor. Annual cost per large PWSs is \$682 for labor plus \$ 6,047 for analytical (non-labor) costs, with very large PWSs costs of \$1,248 for labor plus \$16,298 for analytical (non-labor) costs. Exhibits 8 and 9 illustrate the number of participating PWSs and timing of monitoring. Per-PWSs labor burdens and costs are presented in Exhibit 11b. This exhibit presents a summary of burden and cost per response. Analogous information for the five-year implementation period is provided in Exhibit B-1b, in Appendix B. “Response” is defined as each required reporting event for a PWS. All labor and non-labor costs associated with a reporting event (reading the regulations, monitoring and reporting) are included in the per-response cost estimate.

Exhibit 11a: Yearly Cost to Systems, by PWS Size and by Type of Cost (2017-2019)
(corresponds to Exhibit B-1a)

Cost Description	2017	2018	2019	Total ¹
SMALL PWSs (standard sample serving 10,000 or fewer people)				
Labor Costs				
Reading and Initial Reporting	\$0	\$57,620	\$57,620	\$115,240
Monitoring	\$0	\$151,440	\$151,440	\$302,881
Reporting of Results	\$0	\$64,150	\$64,150	\$128,300
Non-Labor Costs (Laboratory Analysis and Shipping (paid for by EPA))	\$0	\$0	\$0	\$0
Subtotal – Small PWSs	\$0	\$273,210	\$273,210	\$546,421
LARGE PWSs (serving 10,001 to 100,000 people)				
Labor Costs				
Reading and Initial Reporting	\$0	\$652,904	\$652,904	\$1,305,809
Monitoring	\$0	\$938,437	\$938,437	\$1,876,874
Reporting of Results	\$0	\$1,059,340	\$1,059,340	\$2,118,680
Non-Labor Costs (Laboratory Analysis and Shipping)	\$0	\$23,491,630	\$23,491,630	\$46,983,259
Subtotal – Large PWSs	\$0	\$26,142,311	\$26,142,311	\$52,284,621
VERY LARGE PWSs (serving greater than 100,000 people)				
Labor Costs				
Reading and Initial Reporting	\$0	\$71,473	\$71,473	\$142,945
Monitoring	\$0	\$298,629	\$298,629	\$597,258
Reporting of Results	\$0	\$137,903	\$137,903	\$275,807
Non-Labor Costs (Laboratory Analysis and Shipping)	\$0	\$6,633,274	\$6,633,274	\$13,266,547
Subtotal – Very Large PWSs	\$0	\$7,141,279	\$7,141,279	\$14,282,557
ALL PWSs				
Total Labor for All Systems	\$0	\$3,431,896	\$3,431,896	\$6,863,793

Cost Description	2017	2018	2019	Total ¹
Total Non-Labor for All Systems	\$0	\$30,124,903	\$30,124,903	\$60,249,807
Total Labor and Non-Labor for All PWSs	\$0	\$33,556,800	\$33,556,800	\$67,113,599

¹Totals may not equal the sum of components due to rounding.

Exhibit 11b: Per System (Respondent) and Per Response UCMR Costs (2017-2019)
(corresponds with Exhibit B-1b)

Burden / Cost	Total over 2017-2019			Annual Average over 2017-2019		
	Small PWSs	Large PWSs	Very Large PWSs	Small PWSs	Large PWSs	Very Large PWSs
PER RESPONDENT:						
Labor Cost	\$512	\$2,047	\$3,745	\$171	\$682	\$1,248
Non-Labor Cost	\$0	\$18,140	\$48,894	\$0	\$6,047	\$16,298
Burden (labor hours)	18.5	69.8	139.4	6.2	23.3	46.5
PER RESPONSE:						
Number Responses per Respondent	6.7	11.4	14.1	2.2	3.8	4.7
Labor Cost per Response	\$77	\$180	\$265	\$26	\$60	\$88
Non-Labor Cost per Response	\$0	\$1,596	\$3,463	\$0	\$532	\$1,154
Burden (labor hours) per Response	2.8	6.1	9.9	0.9	2.0	3.3

6(b) Estimating the Burden and Cost to States

Since the UCMR is a direct implementation rule, individual state costs largely depend on specifications in their PA. EPA assumed that states incur only labor costs, because no capital investments are expected for UCMR 4. Because states are involved in a variety of UCMR implementation and oversight activities but have few defined responses, burden estimates are based on yearly activities. Thus, for “per response” estimates, states have an average of 1.0 response per year.

EPA used updated estimates from ASDWA’s “Insufficient Resources for State Drinking Water Programs Threaten Public Health: an Analysis of State Drinking Water Programs’ Resources and Needs.” to estimate state burden and cost for the implementation and oversight of UCMR 4. In 2000, the United States General Accounting Office used a previous version of this model to estimate nationwide drinking water program needs for Congress.

EPA reviewed the estimates used by ASDWA for various aspects of drinking water program implementation activities, and used best professional judgement to determine which estimates would apply to UCMR 4 activities. Assumptions include:

- One full-time equivalent (FTE) is equivalent to 2,080 hours per year; this represents a change from UCMR 3, as the previous estimates used 1,800 hours per year for one FTE.
- States would need one supervisor per seven technical FTEs, and one support staff for every 20 technical FTEs.
- Wage rate information for states from the BLS was used since these rates are more recent than the rates used by ASDWA. This same wage rate information is being used for the renewal ICRs for current drinking water regulations, and was calculated as follows: The state labor rate of \$29 was multiplied by a loading rate of 1.6 to account for benefits. The wage rate was then escalated to 2014 dollars using the Employment Cost Index for wages and salaries in trade, transport, and utilities for March 2013 and December 2014. The index value (accessed from <http://www.bls.gov> on March 12, 2015), was 116.9 for March 2013 and 121.7 for December 2014. State Employee wage rates from National Occupational Employment and Wage Estimates, United States, BLS SOC Code 19-2041, "State Government - Environmental Scientists and Specialists, Including Health," hourly mean wage rate. May 2013 data (published in April 2014). <http://stats.bls.gov/oes/current/oes192041.htm>. The average estimated wage rate for states is \$47.

The model included state resource needs for different aspects of the Phase II/V and nitrate regulations. EPA needed to isolate the UCMR costs from the aggregated costs. Based on professional judgment regarding the relative magnitude of the UCMR program, EPA assumed that:

- ASDWA's estimates of hours include the following activities for implementation of the chemical program: setting up monitoring schedules for PWSs; notifying PWSs of requirements; reviewing data/information submitted to the state; determining compliance; assigning violations; commencing enforcement actions; and data entry/ recordkeeping /reporting to EPA. ASDWA also included hours for running a waiver program. The estimates also assumed most states have a state-wide waiver and that most systems have individual use or susceptibility waivers for some analytes. EPA used the same labor estimates as a base in order to provide a conservative estimate for UCMR 4 activities. Under UCMR 4, states are anticipated to: assist PWSs with monitoring schedules; notify PWSs of requirements; and possibly review data. States were given 10.75 hours per small PWS, and 13.25 hours per large PWS to help implement the UCMR program. EPA assumed that during the first and last year of the five-year UCMR period (2017 and 2021), when there are no monitoring activities, UCMR represents 1% of the bundled program resource needs (although the costs for 2020 and 2021 are not relevant to the current ICR estimations); during the three years when monitoring is conducted, UCMR represents 3% of the bundled program resource needs.
- While not required by EPA for the UCMR program, estimates include time for state staff training on database use; inventory updates; responses to data queries (e.g., producing monthly violation reports for program staff); quarterly reporting and recordkeeping; and QC of data entered for compliance oversight. ASDWA assumed one FTE per year for small and very small states, 1.75 FTEs for medium states, five FTEs for large states, and six FTEs for very large states. For UCMR, EPA assumed that states would use this time to review PWS data. In some instances, states may enter and track UCMR data in their own database systems.
- States are estimated to need 20 hours in the first ICR year of 2017 to read and understand UCMR 4.
- States are assumed to need 0.15 FTEs in 2017 to develop PAs with EPA. This estimate assumes that two FTEs would devote three weeks in the first year of UCMR 4 to complete this task.
- ASDWA provided estimates for PWS training and technical assistance with estimates ranging from .67 hours per PWS to two hours per PWS, based on population served. For UCMR 4, states were given one hour per PWS for technical assistance for all three monitoring years. This would also assist states in writing monitoring schedule letters to PWSs, and providing other technical assistance during monitoring years.
- ASDWA estimated that states would need to train technical staff on new rule requirements, noting that 11 hours were needed per technical FTE for three new rules. ASDWA assumed that training would include one day of classroom training per technical FTE and three hours per technical FTE for follow-up questions; reading rule; and discussions. EPA assumed that training will occur only in the first year, and that 3.67 hours per FTE for training would be needed for UCMR 4.

Some of the state labor estimates depend on the size of the state. Exhibit 12 shows the number of states in each size category. EPA further refined the labor burden estimates by taking the level of state participation under UCMR 3 into consideration. EPA reviewed key areas of state participation under UCMR 3 including: review and revision to the SMPs; assisting EPA with updates to information for large PWSs; two separate sets of PWS notifications; and compliance assistance. Based on prior UCMR activities, 80 percent of states typically participated in their optional UCMR activities. Burden estimates generated from the ASDWA estimates were multiplied by this “percent participation in UCMR 3” to approximate state costs at expected participation levels under UCMR 4.

Exhibit 12: Number of States in Each Size Category (State Resource Model Assumptions)

Size Category	Number of States
Very Small	10
Small	11
Medium	23
Large	10
Very Large	2
<i>Total</i>	56

EPA estimates that the average annual burden over the three ICR years (2017-2019) for 56 states to implement UCMR is 13,681 hours (or 244 hours per state per year), with an average annual cost of \$649,467 (or \$11,598 per state per year). See Exhibits 13a and 13b for a summary of estimated state burdens and costs (analogous five-year information for 2017-2021 provided in Exhibits B-2a and B-2b, in Appendix B).

Exhibit 13a: Yearly Cost and Burden to States for Implementation of UCMR 4 (2017-2019)¹ (corresponds with Exhibit B-2a)

Cost/Burden	2017	2018	2019	Total ²	Annual Average
Costs to all states for labor related to UCMR implementation and oversight					
	\$876,636	\$535,883	\$535,883	\$1,948,402	\$649,467
Labor burden for all states for UCMR implementation and oversight (number of hours)					
	18,466	11,288	11,288	41,043	13,681

¹ All costs are attributed to labor and are estimated over the period 2017-2019.

² Totals may not equal the sum of components due to rounding.

Exhibit 13b: Per State (Respondent) and Per Response UCMR 4 Costs (2017-2019) (corresponds with Exhibit B-2b)

Burden / Cost	Total over 2017-2019	Annual Average over 2017-2019
PER RESPONDENT:		

Burden / Cost	Total over 2017-2019	Annual Average over 2017-2019
Labor Cost	\$34,793	\$11,598
Non-Labor Cost	\$0	\$0.00
Burden (labor hours)	732.9	244.3
PER RESPONSE:		
Number Responses per Respondent ¹	3.0	1.0
Labor Cost per Response	\$17,397	\$5,799
Non-Labor Cost per Response	\$0	\$0
Burden (labor hours) per Response	366.5	122.2

¹ States have 1 response per year, since there are no specific cyclical state reporting requirements under the UCMR program.

6(c) Estimating Agency Burden and Cost

EPA incurs burden and costs related to UCMR implementation activities, including: regulatory support activities; national and regional oversight and data analysis; and the small PWS testing program. These activities are described in detail in section 5(a), Part A of this ICR document. Labor and contractual costs are estimated using the federal government general schedule (GS) pay scale; assuming a labor level of GS 13, step 5, and taken from the Maryland/District of Columbia rate schedule during the last quarter of 2014 (see the U.S. Office of Personnel Management website: www.opm.gov). With these assumptions, labor and contractor rates were based on a 2,080 hour work year, with a \$164,694 annual salary plus 60% overhead, or \$79 per hour. Additional cost assumptions are described in sections 6(c)(i)-(iii), Part A of this ICR document. Cost and burden estimates are presented in Exhibits 14a and 14b, respectively.

6(c)(i) Regulatory Support Activities

Regulatory support activities include the labor and non-labor costs for laboratory approval process and QA/QC activities; and general technical support and guidance documents. Cost and burden assumptions for these activities are as follows:

Laboratory Approvals and QA/QC Activities: EPA incurs various labor or contractor costs related to the laboratory PT/approvals; laboratory QA/QC; and provision of analytical standards, as follows:

- The laboratory approval (PT program) is estimated to cost EPA \$238,811 prior to the beginning of monitoring, in 2017. Cost estimates were based on costs realized by the Agency for similar activities during UCMR 2 and UCMR 3. A three percent inflation rate was applied to the costs of UCMR 3 to estimate the costs for UCMR 4. These costs are also included in Appendix B.

- QC Audits of contract laboratories occurs throughout active UCMR monitoring. Labor (hours) for each trip includes: a 3-day site inspection (for two individuals); one full-day travel for two individuals (assume two half days); and three days of report writing (for one individual), which includes review and response to laboratory comments. Travel costs for two individuals include: round trip flight, three nights hotel stay, two full day food per diem, and two days at the proportional meals rate from the 2015 federal rate for the Continental U.S. (from the U.S. Government Services Administration website: www.gsa.gov). Also included is rental of one car for both travelers. EPA estimated that these QC audits would take place four times each monitoring year, at an estimated cost of \$9,087 per trip.
- EPA estimated that analytical standards provision and coordination would cost \$618,734 total for three ICR years (or \$206,245 per ICR year). Cost estimates are based on costs realized by the Agency for prior similar activities.

Technical Support/Guidance Document Development: These activities cost EPA approximately \$180,899 total over the ICR period including: costs for developing and distributing guidance for laboratories that will participate in UCMR 4 testing; health effects fact sheets; and other pertinent guidance related to UCMR 4 implementation. These activities would take place in 2017 and 2018. These costs are included in Appendix B, which presents costs for the entire UCMR 4 period. Cost estimates were based on costs realized by the Agency for prior similar activities. For UCMR 4, a 3% inflation rate was applied to the costs of UCMR 3.

6(c)(ii) National and Regional Oversight and Data Analysis

EPA activities include data analysis, management oversight and support at both the regional and national level for assistance to states with UCMR implementation. During the core period of UCMR 4 activity, EPA estimated that it would dedicate 5.5 FTEs each year to program oversight and data analysis. These activities are estimated as labor cost and burden to the Agency (see the corresponding description of these activities in section 5(a)(ii), Part A of this ICR document). These activities will cost EPA \$2.7 million in total over the three-year ICR period.

6(c)(iii) Costs for Small System Testing Program

EPA provides logistical support for the small PWS testing program. This activity includes costs for contractual labor, sampling supplies, and shipping costs, and is estimated to cost EPA \$425 per sampling event per sampling site, based on actual historical costs incurred during UCMR 3 for this same activity. These activities, plus analytical and shipping fees are estimated to cost EPA \$11.9 million in total over the three ICR years. See section 6(a)(ii), Part A of this ICR document, for assumptions regarding applicable laboratory fees for individual methods. Total costs that EPA incurs for the small PWS testing program were calculated by multiplying the laboratory and shipping fees by: (number of PWSs) times (number of sampling periods per year) times (number of sampling points per PWS).

6(c)(iv) Estimated Agency Cost and Burden

EPA estimates that the cost for the UCMR 4 program during the ICR period of 2017-2019 is \$15.8 million; (with annual average cost over the ICR period of \$5.3 million). EPA costs for UCMR implementation are shown in Exhibit 14a; average annual labor and non-labor costs, as well as small PWS testing program costs are shown in Exhibit 14b. Appendix B, Exhibits B-3a and B-3b provide analogous information over the five-year UCMR 4 implementation period.

Exhibit 14a: Yearly Cost to EPA for UCMR Implementation, by Type of Cost (2017-2019)¹
(corresponds with Exhibit B-3a)

Cost Description	2017	2018	2019	Total ²	Annual Average
Regulatory Support Activities: laboratory PT; QC audits; analytical standards provision; and technical support, guidance document development					
Lab PT	\$238,811	\$0.00	\$0.00	\$238,811	\$79,604
QC Audits	\$18,174	\$36,347	\$36,347	\$90,868	\$30,290
Analytical Standards	\$119,405	\$245,975	\$253,354	\$618,734	\$206,245
Technical Support	\$119,405	\$61,494	\$0	\$180,899	\$60,300
Subtotal – Regulatory Support	\$495,794	\$343,817	\$289,702	\$1,129,312	\$376,438
National and Regional Oversight and Data Analysis: UCMR management oversight; review and evaluation of data from all UCMR monitoring					
	\$905,819	\$905,819	\$905,819	\$2,717,458	\$905,819
Small PWS Testing: implementation coordination; and analytical and shipping costs for small PWS testing for Assessment Monitoring					
Implementation Coordination	\$0.00	\$2,336,055	\$2,336,055	\$4,672,110.00	\$1,557,370.00

Cost Description	2017	2018	2019	Total ²	Annual Average
Fees for Analysis and shipping – standard sample	\$0.00	\$3,635,893	\$3,635,893	\$7,271,787	\$2,423,929
Subtotal – Small PWS Testing	\$0.00	\$5,971,948	\$5,971,948	\$11,943,897	\$3,981,299
TOTAL	\$1,401,613	\$7,221,584	\$7,167,469	\$15,790,667	\$5,263,556

¹ Agency costs were estimated over the period 2017-2019.

² Totals may not equal the sum of components due to rounding.

Exhibit 14b: Summary of EPA Burdens and Costs for UCMR Implementation (2017-2019) (corresponds with Exhibit B-3b)

Burden / Cost	Annual Average Cost over Three-year ICR Period of 2017-2019 ¹
Labor Cost	\$905,819
Non-Labor Cost	\$4,357,736
Total Cost to EPA for UCMR	\$5,263,556
Burden (labor hours)	11,440.0

¹Totals may not equal the sum of components due to rounding.

6(d) Estimating the Respondent Universe and Total Burden and Costs

Section 1(b) of Part A of this ICR describes the general timing of monitoring. Exhibit 8 presents the estimated numbers of regulated PWSs affected by UCMR 4, and Exhibit 9 presents the timeline in which the PWS monitoring activities is expected to take place. The frequency of responses for PWSs is described in Section 4(b)(ii)(a).

Exhibit 15 summarizes national hours and costs for UCMR 4 during the ICR period. Analogous information for the entire five-year UCMR 4 period is presented in Exhibit B-4 in Appendix B. The total labor and non-labor costs are presented for each category of respondent. The total labor burden to the sample of small PWSs is 15,173 hours, with a cost of \$546,421. The total labor burden to large PWSs is 147,209.5 hours, with a labor cost of \$5.3 million, and non-labor costs for analysis and shipping of \$47.0 million. Very large PWSs have a total labor burden for the ICR period of 28,212.83 hours, with labor and non-labor costs of \$1.0 million and \$13.3 million, respectively. The total burden to states over the three-year ICR period is 41,043 hours, with a labor cost of \$1.9 million. EPA anticipates that states will not incur any significant non-labor costs. EPA’s total burden over the same time frame is 34,320 hours, with labor costs of \$2.7 million, and non-labor costs of \$13.1 million.

Exhibit 15: UCMR 4 National Cost Summary for the ICR period (2017-2019) (corresponds with Exhibit B-4)

Type of Cost	2017	2018	2019	TOTAL ¹	Annual Average
Small PWSs					
Labor Cost	\$0	\$273,210	\$273,210	\$546,421	\$182,140
Non-Labor Cost	\$0	\$0	\$0	\$0.00	\$0.00
Total Small PWS Cost	\$0	\$273,210	\$273,210	\$546,421	\$182,140
Large PWSs					
Labor Cost	\$0	\$2,650,681	\$2,650,681	\$5,301,362	\$1,767,121
Non-Labor Cost	\$0	\$23,491,630	\$23,491,630	\$46,983,259	\$15,661,086
Total Large PWS Cost	\$0	\$26,142,311	\$26,14,311	\$52,284,621	\$17,428,207
Very Large PWSs					
Labor Cost	\$0	\$508,005	\$508,005	\$1,016,010	\$338,670
Non-Labor Cost	\$0	\$6,633,274	\$6,633,274	\$13,266,547	\$4,422,183
Total Very Large PWS Cost	\$0	\$7,141,279	\$7,141,279	\$14,282,557	\$4,760,852
States					
Labor Cost	\$876,636	\$535,883	\$535,883	\$1,948,402	\$649,467
Non-Labor Cost	\$0	\$0	\$0	\$0	\$0
Total State Cost	\$876,636	\$535,883	\$535,883	\$1,948,402	\$649,467
EPA					
Labor Cost	\$905,819	\$905,819	\$905,819	\$2,717,458	\$905,819
Non-Labor Cost	\$495,794	\$6,315,765	\$6,261,650	\$13,073,209	\$4,357,736
Total EPA Cost	\$1,401,613	\$7,221,584	\$7,167,469	\$15,790,667	\$5,263,556
National Total					
Total with EPA	\$2,278,249	\$41,314,267	\$41,260,152	\$84,852,668	\$28,284,223
Total without EPA	\$876,636	\$34,092,683	\$34,092,683	\$69,062,001	\$23,020,667
Total Burden (hours) for All Responses²					
Small PWSs	0.0	7,586.6	7,586.6	15,173.1	5,057.7
Large PWSs	0.0	73,604.7	73,604.7	147,209.5	49,069.8
Very Large PWSs	0.0	14,106.4	14,106.4	28,212.8	9,404.3
States	18,466.2	11,288.3	11,288.3	41,042.9	13,681.0
EPA	11,440.0	11,440.0	11,440.0	34,320.0	11,440.0

Type of Cost	2017	2018	2019	TOTAL ¹	Annual Average
Total with EPA	29,906.2	118,026.0	118,026.0	265,958.3	88,652.8
Total without EPA	18,466.2	106,586.0	106,586.0	231,638.3	77,212.8

¹ Totals may not equal the sum of components due to rounding.

² Although EPA is not considered a respondent to the UCMR, Agency burdens are shown here to illustrate the national costs of the program. National totals are shown with and without the Agency costs.

6(e) Reasons for Change in Burden

This ICR builds upon the ICR developed for UCMR 3, entitled: *Information Collection Request for UCMR 3, ICR Number 2192.05, OMB Control No. 2040-0270*. After the UCMR 1 program was established in 1999, subsequent UCMR cost and burden estimates were incorporated into the larger Chemical/Radionuclides ICR. However, the UCMR 2 and UCMR 3 ICRs were developed and tracked separately from the Chemical/Radionuclides ICR, because the Chemical/Radionuclides ICR was a “renewal” ICR, whereas the UCMR program is, per SDWA, a program that must change every five years. Like the UCMR 2 and UCMR 3 ICRs, this action and subsequent ICRs will be developed and tracked separately. The reasons that respondents to this ICR incur a different burden than those responding to the previous UCMR ICRs include:

- UCMR 4 includes only one monitoring component; Assessment Monitoring.
- UCMR 4 includes a new list of 30 contaminants. Because the laboratory methods are different, the cost of laboratory analysis differs for UCMR 4.
- EPA will not collect duplicate Quality Assurance (QA) field samples for the small PWSs.
- EPA updated wage rates, and re-examined labor burden estimates for states, EPA, and PWS activities.
- PWSs will collect samples from EPTDS, distribution locations, and source water locations. Because not all of these samples will be collected at the same time, and at the same locations, EPA estimated more time for sample collection activities than in previous UCMRs.

6(f) Burden Statement

Small PWSs that were selected for UCMR 4 monitoring are expected to sample an average of 6.7 times per PWS (*i.e.*, number of responses per PWS) across the three-year ICR period. The average burden per response for small PWSs is 2.8 hours. Large PWSs and very large PWSs are expected to sample and report an average of 11.4 and 14.1 times per PWS, respectively, across the three-year ICR period. The average estimated burden per response for large and very large PWSs is 6.1 and 9.9 hours, respectively. States are projected to incur 3.0 responses over the three-year ICR period related to coordination with EPA and PWSs, with an average burden per response of 366.5 hours. In aggregate during the ICR period, the average response (*e.g.*, responses from PWS and states) is associated with a burden of 6.9 hours, with a labor plus non-labor cost of \$1,705 per response.

The annual average per-respondent burden hours and costs for the ICR period are: small PWSs – 6.2 hour burden at \$171 for labor; large PWSs – 23.3 hours at \$682 for labor, and \$6,047 for analytical costs; very large PWSs –46.5 hours at \$1,248 for labor, and \$16,298 for analytical costs; and states – 244.3 hours at \$11,598 for labor. Annual average burden and cost per respondent (including PWSs and states) is 23.4 hours, with a labor plus non-labor cost of \$5,778 per respondent.

The annual average burden to EPA for UCMR 4 program activities during the ICR years is 11,440 hours, with an annual labor cost of \$905,819. EPA's annual average non-labor costs are \$4.4 million. Non-labor costs are primarily attributed to the cost of sample testing for small PWSs (testing is 91% of non-labor costs).

Exhibit 16 presents per-respondent and per-response burdens and costs over the UCMR 4 ICR period of 2017-2019 (analogous information for the 2017-2021 UCMR 4 implementation period is provided in Exhibit B-5, Appendix B). This exhibit also presents average annual burdens and costs.

Exhibit 16: UCMR 4 Per Respondent Burden and Cost Summary for the ICR Period (2017-2019) (corresponds with Exhibit B-5)

Burden (hours)/ Cost (dollars)	Small PWSs	Large PWSs	Very Large PWSs	States	EPA	National Average with EPA ¹	National Average without EPA
Three-Year Total per Respondent							
Total # of Responses Per Respondent	6.7	11.4	14.1	3.0	n/a	n/a	10.2
Labor Cost Per Respondent	\$512	\$2,047	\$3,745	\$34,793	\$2,717,458	\$2,893	\$2,212
Non-Labor Cost Per Respondent	\$0	\$18,140	\$48,894	\$0	\$13,073,209	\$18,400	\$15,123
Total Cost (Labor plus Non-Labor)	\$512	\$20,187	\$52,638	\$34,7923	\$15,790,667	\$21,293	\$17,335
Total Cost Per Response	\$77	\$1,777	\$3,728	\$17,396	n/a	n/a	\$1,705
Total Burden Per Respondent (hr)	18.5	69.8	139.4	732.9	34,320	78.7	70.1

Burden (hours)/ Cost (dollars)	Small PWSs	Large PWSs	Very Large PWSs	States	EPA	National Average with EPA¹	National Average without EPA
Total Burden Per Response (hr)	2.8	6.1	9.9	366.5	n/a	n/a	6.9
Average Annual per Respondent							
Ave. # of Responses Per Respondent	2.2	3.8	4.7	1.0	n/a	n/a	3.4
Labor Cost Per Respondent	\$171	\$682	\$1,248	\$11,598	\$905,819	\$964	\$737
Non-Labor Cost Per Respondent	\$0	\$6,047	\$16,298	\$0	\$4,357,736	\$6,133	\$5,041
Ave. Cost (Labor plus Non-Labor)	\$171	\$6,729	\$17,546	\$11,598	\$5,263,556	\$7,098	\$5,778
Ave. Cost Per Response	\$26	\$592	\$1,243	\$5,799	n/a	n/a	\$568
Ave. Burden Per Respondent (hr)	6.2	23.3	46.5	244.3	11,440.0	26.2	23.4
Ave. Burden Per Response (hr)	0.9	2.0	3.3	122.2	n/a	n/a	2.3

¹ National average burdens and costs differ greatly between the state respondents and the various PWS respondents. This should be taken into consideration when looking at the national average with or without EPA.

Burden means 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, and verifying information, processing and maintaining information, and 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. 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.

To comment on EPA's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including the use of automated collection techniques, EPA established a public docket for this ICR. Docket ID Number EPA-HQ-OW-2015-0218, is available for public viewing at the Water Docket in the EPA Docket Center (EPA/DC), EPA West, Room 3334, 1301 Constitution Ave., NW, Washington, DC. This EPA Docket Center Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for this Public Reading Room is (202) 566-1744, and the telephone number for the Water Docket is (202) 566-2426. An electronic version of the public docket is available at www.regulations.gov. This site can be used to submit or view public comments, access the index listing of the contents of the public docket, and to access those documents in the public docket that are available electronically. When in the system, select "search," then key in the Docket ID Number identified above. Also, you can send comments to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th Street, NW, Washington, D.C. 20503, Attention: Desk Officer for EPA. Please include the EPA Docket ID Number EPA-HQ-OW-2015-0218 and OMB Control Number 2040-0270 in any correspondence.

– PART B OF THE SUPPORTING STATEMENT –

1 SURVEY OBJECTIVES, KEY VARIABLES, AND OTHER PRELIMINARIES

1(a) Survey Objectives

The primary objective of the statistical methods applied in this information collection is for EPA to identify and select a sample of PWSs that is representative of PWSs nationwide. The selected sample of PWSs monitors for contaminants identified by the UCMR rule. The representativeness of this sample of PWSs is critical to the UCMR program because the drinking water contaminant occurrence data collected by the PWSs is used to: estimate national occurrence and exposure; establish a baseline for health effects and economic analyses; and provide information for regulatory determinations and, as appropriate, regulatory development.

1(b) Key Variables

Key variables associated with selecting a nationally representative sample of PWSs include: PWS size, source water type and geographical location.

1(c) Statistical Approach

Section 1445(a)(2) of SDWA (as amended in 1996) requires that the UCMR program include only a representative sample of PWSs serving 10,000 or fewer people. In addition to satisfying statutory requirements, selection of a sample of PWSs for participation in UCMR allows for significant national costs savings, as compared to monitoring by all PWSs. To estimate national occurrence and exposure, the primary UCMR program objective, the representative sample of PWSs must allow EPA to collect high quality data about contaminant occurrence.

1(d) Feasibility

EPA anticipates that the survey (the statistical sample) objectives are achievable given the existing time and resource constraints.

- High PWS response/participation rates (>95%) during UCMR 1 and UCMR 2 (and, thus far, in UCMR 3) give EPA confidence that equivalent or better participation rates can be achieved during UCMR 4.

- The statistical approach to this data collection requires only a fraction of small PWSs to conduct monitoring, resulting in much smaller cost and burden at the national level than would be incurred if all PWSs monitored. Small PWSs that are selected for UCMR 4 monitoring incur only a few hours of labor burden. EPA pays for all laboratory fees and shipping costs related to small PWS testing.
- The survey results will be completed in time to inform the next cycle of CCL and regulatory determinations.

2 SURVEY DESIGN

2(a) Target Population and Coverage

PWSs are the target population for UCMR monitoring. All PWSs that serve more than 10,000 retail customers are subject to the Assessment Monitoring component of UCMR 4 monitoring. Eligible small PWSs (serving 10,000 or fewer people) are only required to conduct UCMR 4 monitoring if they are part of the statistical selection for Assessment Monitoring or the Screening Survey, or if they have been selected to monitor for Pre-Screen Testing. UCMR 4 does not currently include a Screening Survey or Pre-Screen Testing. Small PWSs are only selected to monitor for one component of UCMR 4 List 1 Assessment Monitoring.

2(b) Sample Design

2(b)(i) Sampling Frame

EPA developed the sample frame for the statistical selection of UCMR PWSs, including the system PWSID, name, source water category, and population-served data for each UCMR-eligible PWS. Initial data were pulled from EPA's Safe Drinking Water Information System (SDWIS/FED) inventory database and were adjusted to account for known anomalies in population and inventory reporting (for example, how wholesalers report their population data).

2(b)(ii) Sample Size

As proposed, UCMR 4 monitoring would include Assessment Monitoring conducted by all PWSs serving more than 10,000 people ("large" and "very large" PWSs), and Assessment Monitoring conducted by 1,600 representative PWSs serving 10,000 or fewer people ("small" PWSs). 800 small SW and GWUDI PWSs would monitor for 10 cyanotoxins and a different group of 800 small systems would monitor for 20 additional chemicals.

2(b)(iii) Stratification Variables

In developing the representative sample, EPA considers factors such as population served, water source and geographic location. The sample of PWSs, as proposed, is stratified by population served (PWS size), allocating samples proportionately to each state by PWS size and then by water source type. (Other provisions, presented below, ensure broad geographic coverage.)

2(b)(iv) Sampling Method

To satisfy the specifications of SDWA section 1445(a)(2)(A), the representative sample of PWSs accounts for different PWS sizes, sources of water supply and geographic location (e.g., states). The sample is expected to be stratified by water source type (i.e., GW or SW and GWUDI) and by PWS size category (i.e., serves 25 to 500 people, 501 to 3,300 people, etc.). This stratification allows EPA to account for different exposure risks of contaminant occurrence that could be related to the vulnerability differences between SW and GW sources and differing technical, management, and/or financial capacity that can vary across PWS sizes.

With contaminant exposure assessment as a primary goal, PWSs are expected to be selected in proportion to the population served. This population-weighted allocation leads to statistically valid estimates of national exposure. To ensure the sample provides equity across states for involvement in the UCMR, EPA expects to include at least two PWSs from each state. This additional PWS selection requirement provides allocation across all the states and territories to account for differences in spatial vulnerability and contaminant occurrence, and to ensure equity in participation. Small tribal PWSs across the EPA regions are expected to be grouped into a single category (equivalent to a “state”) for the representative sample.

2(b)(v) Multi-Stage Sampling

Because PWS status often changes over time, EPA also expects to select “alternate” PWSs that fit the size/source water strata of the originally selected PWS. Through an interactive review process with the states, PWSs that no longer meet eligibility criteria (for example, if they are in a different size category than when originally selected, have become inactive, or do not have a retail customer base) would be replaced by an alternate PWS that meets the stratification criteria.

2(c) Precision Requirements

2(c)(i) Precision Targets

The representative sample of PWSs must be selected so that the data collected yield accurate and precise estimates of national contaminant occurrence (the fraction of PWSs at which a contaminant occurs) and exposure (the fraction of people exposed to a contaminant). For estimates of exposure fractions, EPA allows a margin of error of $\pm 1\%$ with 99% confidence, when the estimated exposure fraction is 1%. That is, if the estimated exposure fraction is 1%, EPA will be able to state with 99% confidence that the true exposure fraction is between 0% and 2%. Because there are uncertainties and sources of variation in this and other such sampling programs, statistical sampling theory used to derive levels of accuracy and precision may not account for all of these sources of variation. Hence, the high confidence level, low allowable error, and consequent large sample size should help ensure adequate data to meet the objectives of the UCMR program.

2(c)(ii) Non-sampling error

For those PWSs selected to conduct UCMR monitoring, response is a requirement. As with any regulation, some non-compliance can be expected. However, high compliance levels (>95%) during prior UCMR monitoring (attributable to extensive outreach and compliance assistance) give EPA confidence that the same or better compliance levels can be achieved during UCMR 4. EPA plans to continue outreach and compliance assistance efforts as needed.

2(d) Questionnaire Design

No questionnaires are anticipated for UCMR 4. Analytical results for contaminant occurrence are expected to be reported directly by the laboratories to EPA's electronic reporting system.

3 PRETESTS AND PILOT TESTS

For UCMR 4, EPA expects to apply the same basic statistical methods that were used to select the UCMR 1, 2 and 3 national representative samples of small PWSs. Following sample adjustments made through communications with states, >99% of the final sample of small PWSs (and >95% of large PWSs) completed their required monitoring and reporting.

4 COLLECTION METHODS AND FOLLOW-UP

4(a) Collection Methods

Large PWSs are required to submit their data through EPA's electronic data reporting system. Small PWSs work directly with an EPA-appointed UCMR Sampling Coordinator, and monitoring data from the small PWSs are submitted directly to EPA's electronic reporting system by the laboratories conducting the analyses.

4(b) Survey Response and Follow-up

High compliance levels (>95%) during prior UCMRs give EPA confidence that equivalent or better levels can be achieved during UCMR 4. EPA continues outreach and compliance assistance efforts as needed. Each small PWS works with a UCMR Sampling Coordinator, and has minimal reporting requirements and one-on-one compliance assistance.

Lessons learned during UCMR 1, 2 and 3 helped refine UCMR 4 requirements. UCMR 4:

- Has an increased sample frequency for cyanotoxins, and uses a phased sample-analysis for microcystins.
- Revises sampling locations.
- Compresses the monitoring schedule by eliminating sampling during December-February.
- Updates, revises, adds and removes data elements to account for the contaminants being proposed, and requires the reporting of QC data by all laboratories.

In UCMR 3, EPA established a requirement that PWSs report contact information and zip codes for customers they serve. In UCMR 4, EPA proposes to continue the requirement. Zip code reporting specifications appear in 40 CFR 141.35(c)(1) and (d)(1) for large and small PWSs, respectively. EPA proposes to continue to collect zip codes for each PWS's service area, as collected under UCMR 3, to support, among other things, an assessment of whether or not minority, low-income and/or indigenous-population communities are uniquely impacted by particular drinking water contaminants.

5 ANALYZING AND REPORTING SURVEY RESULTS

5(a) Data Preparation

After laboratories post UCMR 4 monitoring results and required data elements to EPA's electronic reporting system, EPA allows time for QC review by the PWSs, states, and the Agency before placing the data in the NCOD for public access.

Data problems may occur, but EPA takes the following efforts to reduce problems and increase the dependability and quality of the occurrence data. The UCMR electronic data reporting system and EPA QA/QC assessments screen for the use of inappropriate measurement units and other improper data. Additional automated QC functions are already in place to identify possible data quality issues such as duplicate data submissions and incomplete data. All Assessment Monitoring samples are collected by trained PWS staff and analytical results are generated by laboratories that are approved for UCMR 4 drinking water analysis. Electronic data submission also avoids potential re-keying errors. As part of the data QA/QC procedures, all edits or changes made to the data are documented.

5(b) Analysis

For UCMR 1, 2 and 3, EPA developed a two-stage analytical approach for the evaluation of the national occurrence of contaminants. EPA expects to use the same two-tier approach to analyze the data for UCMR 4.

The first stage of analysis, Stage 1, provides a straightforward evaluation of occurrence for simple and conservative assessments of contaminant occurrence. The Stage 1 analysis of the UCMR data consists of non-parametric, unweighted counts and simple descriptive statistics of analytical results for each of the contaminants. These occurrence analyses are conducted at the sample level, PWS level and population-served level. For each contaminant, occurrence measures include the number and percent of samples with analytical detections and the minimum, median, maximum, and 99th percentile values of those detections. PWS-level occurrence measures include the number and percent of PWSs with one or more analytical detections and the number and percent of PWSs with two or more analytical detections of a given contaminant. Population-served occurrence measures include: the number and percent of population served by PWSs with one or more analytical detections, and the number and percent of population served by PWSs with two or more analytical detections of a given contaminant. Similar measures may also be conducted for each EPTDS for each PWS. Since these contaminant and PWS- level occurrence measures are based on raw occurrence data (that have not been adjusted for population-weighting and sampling), they are less accurate representations of national occurrence than occurrence measures based on adjusted occurrence data.

Based on the findings of the Stage 1 analysis, EPA can select contaminant(s) for which more detailed and sophisticated statistical evaluations – the Stage 2 analysis – may be warranted as a next step to generate national probability estimates of contaminant occurrence and exposure. Specifically, the modeling and estimation of PWS mean contaminant concentrations may be desired. The Stage 2 analysis uses a Bayesian-based hierarchical model to estimate the percent (and number) of PWSs with a mean contaminant concentration above any specified concentration threshold. The Bayesian-based Hierarchical Model also provides quantified error of estimation, and enables estimates of mean contaminant concentrations below the minimum reporting level (MRL). This statistical model was used to generate the contaminant occurrence estimates for 60 regulated contaminants for the first Six-Year Review of NPDWRs, an approach that underwent peer review.

5(c) Reporting Results

After final review and formatting the data collected through this ICR, the data are expected to be made available to the public through the NCOD, as was done with the data collected for UCMR 1, 2 and 3. The analytical results from UCMR 4 monitoring will support regulatory determinations and, as appropriate, regulation development. For contaminants with significant occurrence and health effects, EPA expects to use the results: to support an exposure assessment; to establish the baseline for health effects and economic analyses; to analyze contaminant co-occurrence; and to evaluate treatment technology, including contaminant source management. Further, the results may suggest that the occurrence of certain contaminants may be significant enough to initiate research on health effects and treatment technology. Finally, the data may guide future source water protection efforts.

APPENDICES

APPENDIX A: Relevant Authorities in SDWA 1996 Amendments

Section 1412(b)(1) Identification of contaminants for listing:

(A) General authority – The Administrator shall, in accordance with the procedures established by this subsection, publish a maximum contaminant level goal and promulgate a national primary drinking water regulation for a contaminant (other than a contaminant referred to in paragraph (2) for which a national primary drinking water regulation has been promulgated as of the date of enactment of the Safe Drinking Water Act Amendments of 1996) if the Administrator determines that

- (i) the contaminant may have an adverse effect on the health of persons;
- (ii) the contaminant is known to occur or there is a substantial likelihood that the contaminant will occur in public water systems with a frequency and at levels of public health concern; and
- (iii) in the sole judgment of the Administrator, regulation of such contaminant presents a meaningful opportunity for health risk reduction for persons served by public water systems.

(B) Regulation of unregulated contaminants–

(i) Listing of contaminants for consideration–

(I) Not later than 18 months after the date of enactment of the Safe Drinking Water Act Amendments of 1996 and every 5 years thereafter, the Administrator, after consultation with the scientific community, including the Science Advisory Board, after notice and opportunity for public comment, and after considering the occurrence data base established under section 1445(g), shall publish a list of contaminants which, at the time of publication, are not subject to any proposed or promulgated national primary drinking water regulation, which are known or anticipated to occur in public water systems, and which may require regulation under this title.

(II) The unregulated contaminants considered under subclause (i) shall include, but not be limited to, substances referred to in section 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, and substances registered as pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act.

(III) The Administrator's decision whether or not to select an unregulated contaminant for a list under this clause shall not be subject to judicial review.

(ii) Determination to regulate–

(I) Not later than 5 years after the date of enactment of the Safe Drinking Water Act Amendments of 1996, and every 5 years thereafter, the Administrator shall, after notice of the preliminary determination and opportunity for public comment, for not fewer than 5 contaminants included on the list published under clause (i), make determinations of whether or not to regulate such contaminants.

(II) A determination to regulate a contaminant shall be based on findings that the criteria of clauses (i), (ii), and (iii) of subparagraph (A) are satisfied. Such findings shall be based on the best available public health information, including the occurrence data base established under section 1445(g).

(III) The Administrator may make a determination to regulate a contaminant that does not appear on a list under clause (i) if the determination to regulate is made pursuant to subclause (II).

(IV) A determination under this clause not to regulate a contaminant shall be considered final Agency action and subject to judicial review.

(iii) Review – Each document setting forth the determination for a contaminant under clause (ii) shall be available for public comment at such time as the determination is published.

(C) Priorities – In selecting unregulated contaminants for consideration under subparagraph (B), the Administrator shall select contaminants that present the greatest public health concern. The Administrator, in making such selection, shall take into consideration, among other factors of public health concern, the effect of such contaminants upon subgroups that comprise a meaningful portion of the general population (such as infants, children, pregnant women, the elderly, individuals with a history of serious illness, or other subpopulations) that are identifiable as being at greater risk of adverse health effects due to exposure to contaminants in drinking water than the general population.

(D) Urgent threats to public health – The Administrator may promulgate an interim national primary drinking water regulation for a contaminant without making a determination for the contaminant under paragraph (4)(C), or completing the analysis under paragraph (3)(C), to address an urgent threat to public health as determined by the Administrator after consultation with and written response to any comments provided by the Secretary of Health and Human Services, acting through the director of the Centers for Disease Control and Prevention or the director of the National Institutes of Health. A determination for any contaminant in accordance with paragraph (4)(C) subject to an interim regulation under this subparagraph shall be issued, and a completed analysis meeting the requirements of paragraph (3)(C) shall be published, not later than 3 years after the date on which the regulation is promulgated and the regulation shall be repromulgated, or revised if appropriate, not later than 5 years after that date.

(E) Regulation – For each contaminant that the Administrator determines to regulate under subparagraph (B), the Administrator shall publish maximum contaminant level goals and promulgate, by rule, national primary drinking water regulations under this subsection. The Administrator shall propose the maximum contaminant level goal and national primary drinking water regulation for a contaminant not later than 24 months after the determination to regulate under subparagraph (B), and may publish such proposed regulation concurrent with the determination to regulate. The Administrator shall publish a maximum contaminant level goal and promulgate a national primary drinking water regulation within 18 months after the proposal thereof. The Administrator, by notice in the FR, may extend the deadline for such promulgation for up to 9 months.

(F) Health advisories and other actions – The Administrator may publish health advisories (which are not regulations) or take other appropriate actions for contaminants not subject to any national primary drinking water regulation.

Section 1412(b)(4) Goals and standards:

(A) Maximum contaminant level goals – Each maximum contaminant level goal established under this subsection shall be set at the level at which no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety.

(B) Maximum contaminant levels – Except as provided in paragraphs (5) and (6), each national primary drinking water regulation for a contaminant for which a maximum contaminant level goal is established under this subsection shall specify a maximum contaminant level for such contaminant which is as close to the maximum contaminant level goal as is feasible.

(C) Determination – At the time the Administrator proposes a national primary drinking water regulation under this paragraph, the Administrator shall publish a determination as to whether the benefits of the maximum contaminant level justify, or do not justify, the costs based on the analysis conducted under paragraph (3)(C).

(D) Definition of feasible – For the purposes of this subsection, the term “feasible” means feasible with the use of the best technology, treatment techniques and other means which the Administrator finds, after examination for efficacy under field conditions and not solely under laboratory conditions, are available (taking cost into consideration). For the purpose of this paragraph, granular activated carbon is feasible for the control of synthetic organic chemicals, and any technology, treatment technique, or other means found to be the best available for the control of synthetic organic chemicals must be at least as effective in controlling synthetic organic chemicals as granular activated carbon.

(E) Feasible technologies

(i) In general – Each national primary drinking water regulation which establishes a maximum contaminant level shall list the technology, treatment techniques, and other means which the Administrator finds to be feasible for purposes of meeting such maximum contaminant level, but a regulation under this subsection shall not require that any specified technology, treatment technique, or other means be used for purposes of meeting such maximum contaminant level.

(ii) List of technologies for small systems – The Administrator shall include in the list any technology, treatment technique, or other means that is affordable, as determined by the Administrator in consultation with the States, for small public water systems serving

(I) a population of 10,000 or fewer but more than 3,300;

(II) a population of 3,300 or fewer but more than 500; and

(III) a population of 500 or fewer but more than 25;

and that achieves compliance with the maximum contaminant level or treatment technique, including packaged or modular systems and point-of-entry or point-of-use treatment units. Point-of-entry and point-of-use treatment units shall be owned, controlled and maintained by the public water system or by a person under contract with the public water system to ensure proper operation and

maintenance and compliance with the maximum contaminant level or treatment technique and equipped with mechanical warnings to ensure that customers are automatically notified of operational problems. The Administrator shall not include in the list any point-of-use treatment technology, treatment technique, or other means to achieve compliance with a maximum contaminant level or treatment technique requirement for a microbial contaminant (or an indicator of a microbial contaminant). If the American National Standards Institute has issued product standards applicable to a specific type of point-of-entry or point-of-use treatment unit, individual units of that type shall not be accepted for compliance with a maximum contaminant level or treatment technique requirement unless they are independently certified in accordance with such standards. In listing any technology, treatment technique, or other means pursuant to this clause, the Administrator shall consider the quality of the source water to be treated.

(iii) List of technologies that achieve compliance – Except as provided in clause (v), not later than 2 years after the date of enactment of this clause and after consultation with the States, the Administrator shall issue a list of technologies that achieve compliance with the maximum contaminant level or treatment technique for each category of public water systems described in subclauses (I), (II), and (III) of clause (ii) for each national primary drinking water regulation promulgated prior to the date of enactment of this paragraph.

(iv) Additional technologies – The Administrator may, at any time after a national primary drinking water regulation has been promulgated, supplement the list of technologies describing additional or new or innovative treatment technologies that meet the requirements of this paragraph for categories of small public water systems described in subclauses (I), (II), and (III) of clause (ii) that are subject to the regulation.

(v) Technologies that meet surface water treatment rule – Within one year after the date of enactment of this clause, the Administrator shall list technologies that meet the Surface Water Treatment Rule for each category of public water systems described in subclauses (I), (II), and (III) of clause (ii).

Section 1445(a)(1)(A) Every person who is subject to any requirement of this title or who is a grantee, shall establish and maintain such records, make such reports, conduct such monitoring, and provide such information as the Administrator may reasonably require by regulation to assist the Administrator in establishing regulations under this title, in determining whether such person has acted or is acting in compliance with this title, in administering any program of financial assistance under this title, in evaluating the health risks of unregulated contaminants, or in advising the public of such risks. In requiring a public water system to monitor under this subsection, the Administrator may take into consideration the system size and the contaminants likely to be found in the system's drinking water.

(B) Every person who is subject to a national primary drinking water regulation under section 1412 shall provide such information as the Administrator may reasonably require, after consultation with the State in which such person is located if such State has primary enforcement responsibility for public water systems, on a case-by-case basis, to determine whether such person has acted or is acting in compliance with this title.

(C) Every person who is subject to a national primary drinking water regulation under section 1412 shall provide such information as the Administrator may reasonably require to assist the Administrator in establishing regulations under section 1412 of this title, after consultation with States and suppliers of water. The Administrator may not require under this subparagraph the installation of treatment equipment or process changes, the testing of treatment technology, or the analysis or processing of monitoring samples, except where the Administrator provides the funding for such activities. Before exercising this authority, the Administrator shall first seek to obtain the information by voluntary submission.

(D) The Administrator shall not later than 2 years after the date of enactment of this subparagraph, after consultation with public health experts, representatives of the general public, and officials of State and local governments, review the monitoring requirements for not fewer than 12 contaminants identified by the Administrator, and promulgate any necessary modifications.

(2) MONITORING PROGRAM FOR UNREGULATED CONTAMINANTS

(A) ESTABLISHMENT – The Administrator shall promulgate regulations establishing the criteria for a monitoring program for unregulated contaminants. The regulations shall require monitoring of drinking water supplied by public water systems and shall vary the frequency and schedule for monitoring requirements for systems based on the number of persons served by the system, the source of supply, and the contaminants likely to be found, ensuring that only a representative sample of systems serving 10,000 persons or fewer are required to monitor.

(B) MONITORING PROGRAM FOR CERTAIN UNREGULATED CONTAMINANTS

(i) INITIAL LIST – Not later than 3 years after the date of enactment of the Safe Drinking Water Act Amendments of 1996 and every 5 years thereafter, the Administrator shall issue a list pursuant to subparagraph (A) of not more than 30 unregulated contaminants to be monitored by public water systems and to be included in the national drinking water occurrence data base maintained pursuant to subsection (g).

(ii) GOVERNORS' PETITION – The Administrator shall include among the list of contaminants for which monitoring is required under this paragraph each contaminant recommended in a petition signed by the Governor of each of 7 or more States, unless the Administrator determines that the action would prevent the listing of other contaminants of a higher public health concern.

(C) MONITORING PLAN FOR SMALL AND MEDIUM SYSTEMS

(i) IN GENERAL – Based on the regulations promulgated by the Administrator, each State may develop a representative monitoring plan to assess the occurrence of unregulated contaminants in public water systems that serve a population of 10,000 or fewer in that State. The plan shall require monitoring for systems representative of different sizes, types, and geographic locations in the State.

(ii) GRANTS FOR SMALL SYSTEM COSTS – From funds reserved under section 1452(o) or appropriated under subparagraph (H), the Administrator shall pay the reasonable cost of such testing and laboratory analysis as are necessary to carry out monitoring under the plan.

(D) MONITORING RESULTS – Each public water system that conducts monitoring of unregulated contaminants pursuant to this paragraph shall provide the results of the monitoring to the primary enforcement authority for the system.

(E) NOTIFICATION – Notification of the availability of the results of monitoring programs required under paragraph (2)(A) shall be given to the persons served by the system.

(F) WAIVER OF MONITORING REQUIREMENT – The Administrator shall waive the requirement for monitoring for a contaminant under this paragraph in a State, if the State demonstrates that the criteria for listing the contaminant do not apply in that State.

(G) ANALYTICAL METHODS – The State may use screening methods approved by the Administrator under subsection (i) in lieu of monitoring for particular contaminants under this paragraph.

(H) AUTHORIZATION OF APPROPRIATIONS – There are authorized to be appropriated to carry out this paragraph \$10,000,000 for each of the fiscal years 1997 through 2003.

(i) SCREENING METHODS.—The Administrator shall review new analytical methods to screen for regulated contaminants and may approve such methods as are more accurate or cost-effective than established reference methods for use in compliance monitoring.

[42 U.S.C. 300j-4]

(g) OCCURRENCE DATA BASE

(1) IN GENERAL – Not later than 3 years after the date of enactment of the Safe Drinking Water Act Amendments of 1996, the Administrator shall assemble and maintain a national drinking water contaminant occurrence data base, using information on the occurrence of both regulated and unregulated contaminants in public water systems obtained under subsection (a)(1)(A) or subsection (a)(2) and reliable information from other public and private sources.

(2) PUBLIC INPUT – In establishing the occurrence data base, the Administrator shall solicit recommendations from the Science Advisory Board, the States, and other interested parties concerning the development and maintenance of a national drinking water contaminant occurrence data base, including such issues as the structure and design of the data base, data input parameters and requirements, and the use and interpretation of data.

(3) USE – The data shall be used by the Administrator in making determinations under section 1412(b)(1) with respect to the occurrence of a contaminant in drinking water at a level of public health concern.

(4) PUBLIC RECOMMENDATIONS – The Administrator shall periodically solicit recommendations from the appropriate officials of the National Academy of Sciences and the States, and any person may submit recommendations to the Administrator, with respect to contaminants that should be included in the national drinking water contaminant occurrence data base, including recommendations with respect to additional unregulated contaminants that should be listed under subsection (a)(2). Any recommendation submitted under this clause shall be accompanied by reasonable documentation that—

(A) the contaminant occurs or is likely to occur in drinking water; and

(B) the contaminant poses a risk to public health.

(5) PUBLIC AVAILABILITY – The information from the data base shall be available to the public in readily accessible form.

(6) REGULATED CONTAMINANTS – With respect to each contaminant for which a national primary drinking water regulation has been established, the data base shall include information on the detection of the contaminant at a quantifiable level in public water systems (including detection of the contaminant at levels not constituting a violation of the maximum contaminant level for the contaminant).

(7) UNREGULATED CONTAMINANTS – With respect to contaminants for which a national primary drinking water regulation has not been established, the data base shall include

(A) monitoring information collected by public water systems that serve a population of more than 10,000, as required by the Administrator under subsection (a);

(B) monitoring information collected from a representative sampling of public water systems that serve a population of 10,000 or fewer; and

(C) other reliable and appropriate monitoring information on the occurrence of the contaminants in public water systems that is available to the Administrator.

APPENDIX B: Burden and Cost Exhibits for the Five-Year UCMR 4 Period of 2017-2021

Exhibit B-1a: Yearly Cost to Systems, by PWS Size and by Type of Cost (2017-2021) (corresponds to Exhibit 11a)

Cost Description	2017	2018	2019	2020	2021	Total ¹
SMALL PWSs (serving 10,000 or fewer people)						
Labor Costs						
Reading and Initial Reporting	\$0	\$57,620	\$57,620	\$57,620	\$0	\$172,859
Monitoring	\$0	\$151,440	\$151,440	\$151,440	\$0	\$454,321
Reporting of Results	\$0	\$64,150	\$64,150	\$64,150	\$0	\$192,450
Non-Labor Costs (Laboratory Analysis and Shipping (paid for by EPA))						
	\$0	\$0	\$0	\$0	\$0	\$0.00
Subtotal – Small PWSs	\$0	\$273,210	\$273,210	\$273,210	\$0	\$819,631
LARGE PWSs (serving 10,001 to 100,000 people)						
Labor Costs						
Reading and Initial Reporting	\$0	\$652,904	\$652,904	\$652,904	\$0.00	\$1,958,713
Monitoring	\$0	\$938,437	\$938,437	\$938,437	\$0.00	\$2,815,310
Reporting of Results	\$0	\$1,059,340	\$1,059,340	\$1,059,340	\$0.00	\$3,178,020
Non-Labor Costs (Laboratory Analysis and Shipping)						
	\$0	\$23,491,630	\$23,491,630	\$23,491,630	\$0.00	\$70,474,889
Subtotal – Large PWSs	\$0	\$26,142,311	\$26,142,311	\$26,142,311	\$0.00	\$78,426,932
VERY LARGE PWSs (serving greater than 100,000 people)						
Labor Costs						
Reading and Initial Reporting	\$0	\$71,473	\$71,473	\$71,473	\$0	\$214,418
Monitoring	\$0	\$298,629	\$298,629	\$298,629	\$0	\$895,887
Reporting of Results	\$0	\$137,903	\$137,903	\$137,903	\$0	\$413,710
Non-Labor Costs (Laboratory Analysis and Shipping)						
	\$0	\$6,633,274	\$6,633,274	\$6,633,274	\$0	\$19,899,821
Subtotal – Very Large PWSs	\$0	\$7,141,279	\$7,141,279	\$7,141,279	\$0	\$21,423,836
ALL PWSs						
Total Labor for All PWSs	\$0	\$3,431,896	\$3,431,896	\$3,431,896	\$0	\$10,295,689
Total Non-Labor for All PWSs	\$0	\$30,124,903	\$30,124,903	\$30,124,903	\$0	\$90,374,710
Total Labor and Non-Labor for All PWSs	\$0	\$33,556,800	\$33,556,800	\$33,556,800	\$0	\$100,670,399

¹ Totals may not equal the sum of components due to rounding.

Exhibit B-1b: Per System (Respondent) and Per Response UCMR 4 Costs (2017-2021)
(corresponds with Exhibit 11b)

Burden / Cost	Total over 2017-2021			Annual Average over 2017-2021		
	Small PWSs	Large PWSs	Very Large PWSs	Small PWSs	Large PWSs	Very Large PWSs
PER RESPONDENT:						
Labor Cost	\$512	\$2,047	\$3,745	\$103	\$409	\$749
Non-Labor Cost	\$0	\$18,140	\$48,894	\$0.0	\$3,628	\$9,779
Burden (labor hours)	14.2	56.8	104.0	2.8	11.4	20.8
PER RESPONSE:						
Number Responses per Respondent	6.7	11.4	14.11	1.3	2.3	2.8
Labor Cost per Response	\$77	\$180	\$265	\$15	\$36	\$53
Non-Labor Cost per Response	\$0	\$1,597	\$3,464	\$0	\$319	\$693
Burden (labor hours) per Response	2.1	5.0	7.4	0.4	1.0	1.5

Exhibit B-2a: Yearly Cost and Burden to States for Implementation of UCMR 4 (2017-2021)¹
(corresponds with Exhibit 13a)

Cost/ Burden	2017	2018	2019	2020	2021	Total ²	Annual Average
Costs to All States for labor related to UCMR implementation and oversight							
	\$876,636	\$535,883	\$535,883	\$535,883	\$32,833	\$2,517,119	\$503,424
Labor burden for all States for UCMR implementation and oversight (number of hours)							
	18,466.2	11,288.3	11,288.3	11,288.3	691.6	53,022.8	10,604.6

¹ All costs are attributed to labor and are estimated over the period 2017-2021.

² Totals may not equal sum of components due to rounding.

Exhibit B-2b: Per State (Respondent) and Per Response UCMR 4 Costs (2017-2021)
(corresponds with Exhibit 13b)

Burden / Cost	Total over 2017-2021	Annual Average over 2017-2021
PER RESPONDENT:		
Labor Cost	\$44,949	\$8,990
Non-Labor Cost	\$0	\$0.00
Burden (labor hours)	946.8	189.4
PER RESPONSE:		
Number Responses per Respondent ¹	3.0	1.00
Labor Cost per Response	\$8,990	\$2,997
Non-Labor Cost per Response	\$0	\$0
Burden (labor hours) per Response	189.4	63.1

¹ States have 1 response per year, since there are no specific cyclical state reporting requirements under the UCMR program.

Exhibit B-3a: Yearly Cost to EPA for UCMR 4 Implementation, by Type of Cost (2017-2021)¹
(corresponds with Exhibit 14a)

Cost Description	2017	2018	2019	2020	2021	Total ²	Annual Average Cost
Regulatory Support Activities: laboratory PT; QC audits; analytical standards provision; and technical support, guidance document development							
Lab PT	\$238,811	\$0	\$0	\$0	\$0	\$238,811	\$47,762
QC Audits	\$18,174	\$36,347	\$36,347	\$18,174	\$0	\$109,042	\$21,808
Analytical Standards	\$119,405	\$245,975	\$253,354	\$260,955	\$0	\$889,689	\$175,938
Technical Support	\$119,405	\$61,494	\$0	\$0	\$0	\$180,899	\$36,180
Subtotal – Regulatory Support	\$495,794	\$343,817	\$289,702	\$279,128	\$0	\$1,408,441	\$281,688
National and Regional Oversight and Data Analysis: UCMR management oversight; review and evaluation of data from all UCMR monitoring							
	\$905,819	\$905,819	\$905,819	\$905,819	\$452,910	\$4,076,186	\$815,237
Small PWS Testing: implementation coordination; and analytical and shipping costs for small PWS testing							
Implementation Coordination	\$0	\$2,336,055	\$2,336,055	\$2,336,055	\$0	\$7,008,165	\$1,401,633
Fees for Analysis and shipping	\$0	\$3,635,893	\$3,635,893	\$3,635,893	\$0	\$10,907,680	\$2,181,536
Subtotal – Small PWS Testing	\$0	\$5,971,948	\$5,971,948	\$5,971,948	\$0	\$17,915,845	\$3,583,169
TOTAL	\$1,401,613	\$7,221,584	\$7,167,469	\$7,156,986	\$452,910	\$23,400,472	\$4,680,094

¹ Agency costs are estimated over the period 2017-2021.

² Totals may not equal sum of components due to rounding.

Exhibit B-3b: Summary of EPA Burdens and Costs for UCMR 4 Implementation (2017-2021) (corresponds with Exhibit 14b)

Burden / Cost	Annual Average Cost over Five-Year UCMR Period (2017-2021)
Labor Cost	\$815,237
Non-Labor Cost	\$3,864,857
Total Cost to EPA for UCMR Implementation	\$4,680,094
Burden (labor hours)	10,296

Exhibit B-4: National Cost Summary for UCMR 4 Implementation (2017-2021)
(corresponds with Exhibit 15)

Type of Cost	2017	2018	2019	2020	2021	TOTAL ¹
Small PWSs						
Labor Cost	\$0	\$273,210	\$273,210	\$273,210	\$0	\$819,631
Non-Labor Cost	\$0	\$0	\$0	\$0	\$0	\$0
Total Small PWS Cost	\$0	\$273,210	\$273,210	\$273,210	\$0	\$819,631
Large PWSs						
Labor Cost	\$0	\$2,650,681	\$2,650,681	\$2,650,681	\$0	\$7,952,043
Non-Labor Cost	\$0	\$23,491,630	\$23,491,6230	\$23,491,630	\$0	\$70,474,889
Total Large PWS Cost	\$0	\$26,142,311	\$26,142,311	\$26,142,311	\$0	\$78,426,932
Very Large PWSs						
Labor Cost	\$0	\$508,005	\$508,005	\$508,005	\$0	\$1,524,015
Non-Labor Cost	\$0	\$6,633,274	\$6,633,274	\$6,633,274	\$0	\$19,899,821
Total Very Large PWS Cost	\$0	\$7,141,279	\$7,141,279	\$7,141,279	\$0	\$21,423,836
States						
Labor Cost	\$876,636	\$535,883	\$535,883	\$535,883	\$32,833	\$2,517,119
Non-Labor Cost	\$0	\$0	\$0	\$0	\$0	\$0
Total State Cost	\$876,636	\$535,883	\$535,883	\$535,883	\$32,833	\$2,517,119
EPA						
Labor Cost	\$905,819	\$905,819	\$905,819	\$905,819	\$452,910	\$4,076,186
Non-Labor Cost	\$495,794	\$6,315,765	\$6,261,650	\$6,251,077	\$0.00	\$19,324,286
Total EPA Cost	\$1,401,613	\$7,221,584	\$7,167,469	\$7,156,896	\$452,910	\$23,400,472
National Total						
Total with EPA	\$2,278,249	\$41,314,267	\$41,260,152	\$41,249,579	\$485,743	\$126,587,990
Total without EPA	\$876,636	\$34,092,683	\$34,092,683	\$34,092,683	\$32,833	\$103,187,517
Total Burden (hours) for All Responses²						
Small PWSs	0.0	7,586.6	7,586.6	7,586.6	\$0	22,759.7
Large PWSs	0.0	73,604.7	73,604.7	73,604.7	\$0	220,814.2
Very Large PWSs	0.0	14,106.4	14,106.4	14,106.4	\$0	42,319.2
States	18,466.2	11,288.3	11,288.3	11,288.3	691.6	53,022.8
EPA	11,440.0	11,440.0	11,440.0	11,440.0	5,720.0	51,480.0
Total with EPA	29,906.2	118,026.0	118,026.0	118,026.0	6,411.6	390,395.9
Total without EPA	18,466.2	106,586.0	106,586.0	106,586.0	691.6	338,915.9

¹ Totals may not equal the sum of components due to rounding.

² Although EPA is not considered a respondent to the UCMR, Agency burdens are shown here to illustrate the national costs of the program. National totals are shown with and without the Agency costs.

Exhibit B-5: UCMR 4 Per Respondent Burden and Cost Summary (2017-2021)
(corresponds with Exhibit 16)

Burden (hours)/ Cost (dollars)	Small PWSs	Large PWSs	Very Large PWSs	States	EPA	National Average with EPA ¹	National Average without EPA
Five-Year Total per Respondent							
Total # of Responses Per Respondent	6.7	11.4	14.1	5.0	n/a	n/a	10.2
Labor Cost Per Respondent	\$512	\$2,047	\$3,745	\$44,949	\$4,076,186	\$2,839	\$2,154
Non-Labor Cost Per Respondent	n/a	\$18,140	\$48,894	n/a	\$19,324,286	\$18,440	\$15,194
<i>Total Cost (Labor plus Non- Labor)</i>	\$512	\$20,187	\$52,638	\$44,949	\$23,400,472	\$21,279	\$17,348
Total Cost Per Response	\$77	\$1,777	\$3,730	\$8,990	n/a	n/a	\$1,696
Total Burden Per Respondent (hr)	14.2	56.8	104.0	946.8	51,480.0	65.6	57.0
Total Burden Per Response (hr)	2.1	11.4	14.1	189.4	n/a	n/a	5.6
Average Annual per Respondent							
Ave. # of Responses Per Respondent	1.3	2.3	2.8	1.0	n/a	n/a	2.1
Labor Cost Per Respondent	\$103	\$409	\$749	\$8,990	\$815,237	\$568	\$431
Non-Labor Cost Per Respondent	n/a	\$3,628	\$9,779	n/a	\$3,864,857	\$3,688	\$3,039
<i>Ave. Cost (Labor plus Non-Labor)</i>	\$103	\$4,037	\$10,528	\$8,990	\$4,680,095	\$4,256	\$3,470
Ave. Cost Per Response	\$15	\$356	\$746	\$1,798	n/a	n/a	\$339
Ave. Burden Per Respondent (hr)	2.8	11.4	20.8	189.4	10,296.0	13.1	11.4
Ave. Burden Per Response (hr)	0.4	2.3	2.8	37.9	n/a	n/a	1.1

¹ National average burdens and costs differ greatly between the state respondents and the various PWS respondents. This should be taken into consideration when looking at the national average with or without EPA.