Center, Environmental Protection Agency, Mail Code 28221T, 1200 Pennsylvania Ave. NW., Washington, DC 20460; and (2) OMB via email to *oira_submission@omb.eop.gov.* Address comments to OMB Desk Officer for EPA.

EPA's policy is that all comments received will be included in the public docket without change, including any personal information provided, unless the comment includes profanity, threats, information claimed to be Confidential Business Information (CBI), or other information whose disclosure is restricted by statute.

FOR FURTHER INFORMATION CONTACT: Patrick Yellin, Monitoring, Assistance, and Media Programs Division, Office of Compliance, Mail Code 2227A, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460; telephone number: (202) 564–2970; fax number: (202) 564–0050; email address: *yellin.patrick@epa.gov.*

SUPPLEMENTARY INFORMATION: Supporting documents which explain in detail the information that the EPA will be collecting are available in the public docket for this ICR. The docket can be viewed online at *www.regulations.gov* or in person at the EPA Docket Center, WJC West, Room 3334, 1301 Constitution Ave. NW., Washington, DC. The telephone number for the Docket Center is 202–566–1744. For additional information about EPA's public docket, visit: *http://www.epa.gov/dockets.*

Abstract: Owners and operators of affected facilities are required to comply with reporting and record keeping requirements for the General Provisions (40 CFR part 60, subpart A), as well as for the specific requirements at 40 CFR part 60, subpart SSS. This includes submitting initial notification reports, performance tests and periodic reports and results, and maintaining records of the occurrence and duration of any startup, shutdown, or malfunction in the operation of an affected facility, or any period during which the monitoring system is inoperative. These reports are used by EPA to determine compliance with these standards.

Form Numbers: None.

Respondents/affected entities: Magnetic tape coating facilities constructed or modified after January 22, 1986.

Respondent's obligation to respond: Mandatory (40 CFR part 60, subpart SSS).

Estimated number of respondents: 6 (total).

Frequency of response: Initially, quarterly and semiannually.

Total estimated burden: 2,030 hours (per year). Burden is defined at 5 CFR 1320.3(b).

Total estimated cost: $295,000 (per year), includes which $86,400 in annualized capital/startup and operation & maintenance costs.

Changes in the Estimates: There is an adjustment increase in the respondent labor hours as currently identified in the OMB Inventory of Approved Burdens. This increase is not due to any program changes. Instead, the change in labor hour and cost estimates occurred because of a change in assumption. This ICR assumes all existing sources will have to re-familiarize with the regulatory requirements each year.

Courtney Kerwin,

Director, Regulatory Support Division.

[FR Doc. 2016–27576 Filed 11–16–16; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OW–2012–0217; FRL–9955–27–OW]

Drinking Water Contaminant Candidate List 4—Final

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The U.S. Environmental Protection Agency (EPA) is publishing a final list of contaminants that are currently not subject to any proposed or promulgated national primary drinking water regulation. These contaminants are known or anticipated to occur in public water systems and may require regulation under the Safe Drinking Water Act (SDWA). This list is the Fourth Contaminant Candidate List (CCL 4) published by EPA since the SDWA amendments of 1996. This Final CCL 4 includes 97 chemicals or chemical groups and 12 microbial contaminants.

FOR FURTHER INFORMATION CONTACT: For information on chemical contaminants contact Meredith Russell, Office of Ground Water and Drinking Water, Standards and Risk Management Division, at (202) 564–0814 or email *russell.meredith@epa.gov.* For information on microbial contaminants contact Hannah Holsinger, Office of Ground Water and Drinking Water, Standards and Risk Management Division, at (202) 564–0403 or email *holsinger.hannah@epa.gov.* For general information contact the EPA Safe Drinking Water Hotline at (800) 426–4791. The Safe Drinking Water Hotline is open Monday through Friday, excluding legal holidays, from 10 a.m. to 4 p.m. eastern time.

Abbreviations and Acronyms

CASRN—Chemical Abstract Services Registry Number
CCL—Contaminant Candidate List
CCL 1—EPA's First Contaminant Candidate List
CCL 2—EPA's Second Contaminant Candidate List
CCL 3—EPA's Third Contaminant Candidate List
CCL 4—EPA's Fourth Contaminant Candidate List
CFR—*Code of Federal Regulations*
CIS—Contaminant Information Sheet
DWC—Drinking Water Committee
EPA—United States Environmental Protection Agency
ESA—Ethanesulfonic acid
FR—Federal Register
HPC—Heterotrophic Plate Count
HRL—Health Reference Level
MCL—Maximum Contaminant Level
MCLG—Maximum Contaminant Level Goal
MRL— Minimum Reporting Level
NAWQA—National Water-Quality Assessment
NDEA—N-Nitrosodiethylamine
NDMA—N-nitrosodimethylamine
NDPA—N-Nitroso-di-n-propylamine
NDPhA—N-Nitrosodiphenylamine
NDWAC—National Drinking Water Advisory Council
NIRS—National Inorganics and Radionuclides Survey
NRC—National Academy of Science's National Research Council
NPDWR—National Primary Drinking Water Regulation
NPYR—N-nitrosopyrrolidine
PCCL 4—Preliminary Contaminant Candidate List 4
PFOA—Perfluorooctanoic Acid
PFOS—Perfluorooctane Sulfonic Acid
PWS—Public Water System
RD—Regulatory Determination
RD 1—Regulatory Determination 1
RD 2—Regulatory Determination 2
RD 3—Regulatory Determination 3
SAB—Science Advisory Board
SDWA—Safe Drinking Water Act
SS—Screening Survey
TRI—Toxics Release Inventory
UCMR 1—First Unregulated Contaminant Monitoring Rule
UCMR 2—Second Unregulated Contaminant Monitoring Rule
UCMR 3—Third Unregulated Contaminant Monitoring Rule
USGS—United States Geological Survey
WBDO—Waterborne Disease Outbreaks

SUPPLEMENTARY INFORMATION:

Table of Contents

I. General Information

A. Does this action apply to me?

The Final CCL 4 will not impose any requirements on anyone. Instead, this action notifies interested parties of the EPA's Final CCL 4 of unregulated drinking water contaminants and provides a summary of the major comments received on the February 4, 2015, Draft CCL 4 **Federal Register** notice and EPA's responses (80 FR 6076 (USEPA, 2015a)).

B. How can I get copies of this document and other related information?

1. Docket

EPA has established a docket for this action under Docket ID No. EPA–HQ–OW–2012–0217. Although listed in the index, some information is not publicly available, *e.g.,* CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available either electronically through *www.regulations.gov* or in hard copy at the Water Docket, EPA/DC, EPA West, Room 3334, 1301 Constitution Ave. NW., Washington, DC 20004. The 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 the Public Reading Room is (202) 566–1744, and the telephone number for the EPA Docket Center is (202) 566–2426.

2. Electronic Access

You may access this **Federal Register** document electronically from the Government Publishing Office under the **Federal Register** listings at FDsys (*http://www.gpo.gov/fdsys/browse/collection.action?collectionCode=FR).*

C. What is the purpose of this action?

The Safe Drinking Water Act (SDWA), as amended in 1996, requires EPA to publish a list every five years of currently unregulated contaminants that may pose risks for drinking water (referred to as the Contaminant Candidate List, or CCL). This list is subsequently used to make regulatory determinations on whether or not to regulate at least five contaminants from the CCL with national primary drinking water regulations (NPDWRs) ((SDWA section 1412(b)(1)). The purpose of today's action is to present EPA's final list of contaminants on the CCL 4, a summary of the major public comments received on the Draft CCL 4 and EPA's responses. Today's action only addresses the Final CCL 4. Regulatory Determination (RD) for contaminants on the CCL is a separate agency action.

D. Statutory Requirements for CCL, Regulatory Determination and Unregulated Contaminant Monitoring

1. Interrelationship of the CCL, Regulatory Determination and Unregulated Contaminant Monitoring

Under the 1996 amendments to SDWA, Congress established a risk-based approach for determining which contaminants would become subject to drinking water standards. The approach includes three components, the CCL, the Unregulated Contaminant Monitoring Rule (UCMR), and RD. In preparing the CCL, EPA screens and evaluates unregulated contaminants to identify those that may require future drinking water regulations. Inclusion on the CCL does not mean that any particular contaminant will necessarily be regulated in the future. The UCMR provides a mechanism to obtain nationally representative occurrence data for unregulated contaminants. The data provided by UCMR is one of the primary sources of occurrence information used to evaluate contaminants in the RD process.

Under the RD process, EPA evaluates UCMR and other occurrence data along with health effects data for contaminants on the CCL to see which ones present the greatest public health concern and have sufficient information for the agency to make a regulatory determination. EPA must make regulatory determinations for at least five contaminants listed on the CCL every five years. Today's action addresses only the CCL 4 and not the UCMR or RD stages of the SDWA contaminant regulatory development process.

2. Contaminant Candidate List

Section 1412(b)(1) of the SDWA, as amended in 1996, requires EPA to publish the CCL every five years. The SDWA specifies that the list must include contaminants that are not subject to any proposed or promulgated NPDWRs, are known or anticipated to occur in public water systems (PWSs), and may require regulation under the SDWA. The unregulated contaminants considered for listing shall include, but not be limited to, hazardous substances identified 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.

The SDWA directs the agency to consider the health effects and occurrence information for unregulated contaminants to identify those contaminants that present the greatest public health concern related to exposure from drinking water. The statute further directs the agency to take into consideration the effect of contaminants upon subgroups that comprise a meaningful portion of the general population (such as infants, children, pregnant women, the elderly and 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. Additionally, EPA's 1995 *Policy on Evaluating Health Risks to Children* states that the agency will consider the risks to infants and children consistently and explicitly as a part of risk assessments generated during its decision-making process, including the setting of standards to protect public health (USEPA, 1995a). EPA considers age-related subgroups as ''lifestages'' in reference to a distinguishable time frame in an individual's life, characterized by unique and relatively stable behavioral and/or physiological characteristics that are associated with development and growth. Thus, childhood is viewed as a sequence of lifestages, from conception through fetal development, infancy and adolescence (see *http://www.epa.gov/children/early-life-stages*).

3. Unregulated Contaminant Monitoring

Section 1445(a)(2) of the SDWA mandates that EPA promulgate regulations (known as the Unregulated Contaminant Monitoring Rule or UCMR) to establish criteria for a monitoring program for unregulated contaminants. This section, as amended in 1996, requires that once every five years, 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 publicly available National Contaminant Occurrence Database. EPA's UCMR program must ensure that systems serving a population larger than 10,000 people, as well as a nationally representative sample of PWSs serving 10,000 or fewer people, are required to monitor.

4. Regulatory Determination

Section 1412(b)(1)(B)(ii) of the SDWA, as amended in 1996, requires EPA at five year intervals, to make determinations of whether or not to regulate no fewer than five contaminants from the CCL. EPA evaluates the CCL contaminants with sufficient health effects and occurrence information to determine whether a regulation is required or not required. The 1996 SDWA Amendments specify three criteria to determine whether a contaminant may require regulation:

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

If EPA determines that these three statutory criteria are met and makes a final determination to regulate a contaminant, the agency has 24 months to publish a proposed maximum contaminant level goal [1] (MCLG) and NPDWR.[2] After the proposal, the agency has 18 months to publish and promulgate a final MCLG and NPDWR (SDWA section 1412(b)(1)(E)).[3] For those contaminants without sufficient information to allow the agency to make a regulatory determination, EPA encourages research to provide the information needed to determine whether to regulate the contaminant.

E. Where can I find information on previous CCLs, UCMRs, and Regulatory Determinations

1. Summary of previous CCLs, UCMRs, and Regulatory Determinations

A brief summary of CCL 1, CCL 2, Regulatory Determination 1 (RD 1) and Regulatory Determination 2 (RD 2) was published in the **Federal Register** for the Draft CCL 4 notice (80 FR 6076, February 4, 2015 (USEPA, 2015a)). Information on previous UCMRs, can be found at the following Web site: *https://www.epa.gov/dwucmr.*

2. Summary of the CCL 3

The CCL 3 included 104 chemicals or chemical groups and 12 microbiological contaminants. In developing the CCL 3, EPA implemented an improved process from the process used for CCL 1 and CCL 2. This new process built on evaluations used for previous CCLs and was based on substantial expert input and recommendations from the National Academy of Sciences' National Research Council (NRC) and the National Drinking Water Advisory Council (NDWAC). EPA used a multi-step CCL process to identify contaminants for inclusion on the Final CCL 3. The key steps included:

- Identifying a broad universe of potential drinking water contaminants (called the CCL 3 Universe). EPA initially considered approximately 7,500 potential chemical and microbial contaminants (more information on the identification of the CCL 3 Universe can be found in USEPA, 2009a and USEPA, 2009b).
- Applying screening criteria to the universe, EPA identified almost 600 of those contaminants that should be further evaluated (the preliminary CCL or PCCL) based on a contaminant's potential to occur in PWSs and the potential for public health concern (more information on the CCL 3 screening process can be found in USEPA, 2009c and USEPA, 2009d).
- Selecting the final list of 116 contaminants from the PCCL to include on the CCL based on more detailed evaluation of occurrence and health effects and expert judgment as well as public input (this step of the CCL 3 process is called the classification process and more information can be found in USEPA, 2009e and USEPA, 2009f).

The CCL 3 interpreted the criterion that contaminants are known or anticipated to occur in public water systems broadly. In evaluating this criterion, EPA considered not only public water system monitoring data, but also data on concentrations in ambient surface and ground waters, releases to the environment (*e.g.,* Toxics Release Inventory (TRI)), and production. While such data may not establish conclusively that contaminants are known to occur in public water systems, EPA believes these data are sufficient to anticipate that contaminants may occur in public water systems and support their inclusion on the CCL. The agency considered adverse health effects that may pose a greater risk to life stages and other sensitive groups which represent a meaningful portion of the population. Adverse health effects associated with infants, children, pregnant women, the elderly, and individuals with a history of serious illness were evaluated as part of the screening and classification processes. A detailed summary of the CCL 3 process can be found in the Draft CCL 3 (73 FR 9628, February 21, 2008 (USEPA, 2008a) and Final CCL 3 (74 FR 51850, October 8, 2009 (USEPA, 2009a)) **Federal Register** notices.

3. Summary of the Regulatory Determination 3

EPA published the Announcement of Final Regulatory Determinations for Contaminants on CCL 3 in the **Federal Register** on January 4, 2016 (81 FR 13

[1] The MCLG is the ''maximum level of a contaminant in drinking water at which no known or anticipated adverse effect on the health of persons would occur, and which allows an adequate margin of safety. MCLGs are non-enforceable health goals.'' (40 CFR 141.2; 42 U.S.C. 300g–1)

[2] An NPDWR is a legally enforceable standard that applies to public water systems. An NPDWR sets a legal limit (called a maximum contaminant level or MCL) or specifies a certain treatment technique for public water systems for a specific contaminant or group of contaminants. The MCL is the highest level of a contaminant that is allowed in drinking water and is set as close to the MCLG as feasible, using the best available treatment technology and taking cost into consideration.

[3] The statute authorizes a nine month extension of this promulgation date.

(USEPA, 2016a)). The agency made final determinations not to regulate four contaminants: 1, 3-dinitrobenzene; dimethoate; terbufos; and terbufos sulfone. The agency delayed the final regulatory determination for strontium in order to consider additional data and decide whether there is a meaningful opportunity for health risk reduction by regulating strontium in drinking water. These five contaminants are not included on the Final CCL 4.

This section provides an overview of the process used for the Third Regulatory Determination (RD 3). A summary of the process can be found in the **Federal Register** notice announcing the preliminary regulatory determinations (79 FR 62716, October 24, 2014 (USEPA, 2014a)), and a detailed explanation of this process can be found in the ''Protocol for the Regulatory Determination 3'' support document (USEPA, 2014b). This overview of the RD process is provided to give an understanding of how contaminants have previously been evaluated after they have been listed on past CCLs. The RD 4 process may continue to follow this process although it is possible that some modifications may be made to this process. The RD process occurs subsequent to a Final CCL, and is a separate agency action. The RD 3 process, was divided into three phases: (1) The Data Availability Phase, (2) the Data Evaluation Phase and (3) the Regulatory Determination Assessment Phase.

The purpose of the first phase, the Data Availability Phase, was to determine if the agency may have sufficient data to characterize the potential health effects and known or likely occurrence in drinking water. With regard to sufficient health effects data used to identify potential adverse health effect(s), the agency considered whether a peer reviewed health risk assessment was available or in process from an EPA or a comparable non-EPA source. In regard to sufficient occurrence data, the agency considered the availability of nationally representative finished water data and whether other finished water data were available that indicated known and/or likely occurrence in PWSs. After conducting the health and occurrence data availability assessments, the agency identified those contaminants and contaminant groups that meet the following Phase 1 data availability criteria:

(a) A peer reviewed health assessment is available or in process, and

(b) A widely available analytical method for monitoring exists, and

(c) Either nationally representative finished water occurrence data are available, or other finished water occurrence data shows occurrence at levels greater than one-half of the CCL 3 health reference level (HRL).

If a contaminant met these three criteria, it was placed on a ''short list'' and proceeded to Phase 2. From the 116 CCL 3 contaminants, the agency identified a short list of 37 contaminants (35 CCL 3 contaminants and two non-CCL 3 contaminants [4]) to further evaluate in the second phase.

During the second phase, the Data Evaluation Phase, the agency further evaluated each of the 37 contaminants on the short list to identify those that had sufficient data (or were expected to have sufficient data) for EPA to assess the three statutory criteria listed in section I.D.4 of this notice.

To identify the contaminants that present the greatest public health concern, the agency specifically focused its efforts on identifying those contaminants or contaminant groups that are occurring or have substantial likelihood to occur at levels and frequencies of public health concern, based on the best available peer reviewed data. In addition to health and occurrence information data assessed in Phase 1, the agency collected additional health and occurrence data and more thoroughly evaluated this information to identify a list of contaminants that should proceed to Phase 3. If the agency found that sufficient data were not available or not likely to be available to evaluate the three statutory criteria during the first and second phases, then the contaminant was not considered a candidate for making a regulatory determination during the current cycle, and the agency will conduct research, collect information or find other avenues to fill the data and information gaps. For these contaminants, additional data that becomes available in the future may be considered for future CCLs and RDs.

If sufficient data were available for a contaminant to characterize the potential health effects and known or likely occurrence in drinking water, the contaminant was evaluated against the three statutory criteria (listed in section I.D.4) in the third phase of the process, the Regulatory Determination Assessment Phase.

II. What is on EPA's Drinking Water Contaminant Candidate List 4?

The Final CCL 4 and a Cross-Walk of Contaminants Between the CCL 4, Regulatory Determination 3, and UCMRs

The Final CCL 4 includes 97 chemicals or chemical groups and 12 microbes listed in Exhibit 1. Exhibit 1 also shows chemical abstract service registry numbers (CASRNs) of the contaminants on the Final CCL 4 and their status across other EPA programs related to CCL (*i.e.,* RD and UCMR). The list of contaminants is presented by CASRN when available, common name, or by aggregate groupings (*e.g.,* cyanotoxins). Further data and information for the contaminants included on the CCL 4 are available in the technical support documents and Contaminant Information Sheets available on EPA's CCL 4 Web site and in the docket for this action (EPA–HQ–OW–2012–0217). All contaminants listed on the Final CCL 4 were also included on CCL 3, with the exception of manganese and nonylphenol, which were nominated by the public and added to the CCL 4. Twenty-eight CCL 4 chemicals that were carried forward from CCL 3 had been further analyzed and evaluated under the RD 3 process and included on the RD 3 Short List (further described in section I.E.3. of this notice). The RD 3 process also included an evaluation of occurrence data from the UCMR 2 for 13 CCL 4 chemicals. Twenty-one CCL 4 contaminants were monitored under UCMR 3 (19 chemicals and 2 microbes). The UCMR data will be used to further evaluate CCL 4 contaminants during the RD 4 process. In addition, EPA has proposed gathering occurrence data for 16 individual CCL 4 chemicals and several cyanotoxins, including anatoxin-a, cylindrospermopsin, nodularin, total microcystin and several microcystin congeners under the proposed UCMR 4.

[4] The non-CCL 3 contaminants, N-Nitroso-di-n-butylamine (NDBA) and N-Nitrosomethylethylamine (NMEA), were included because they are part of a larger group (nitrosamines) that also includes a number of CCL 3 contaminants.

EXHIBIT 1—CONTAMINANTS ON THE FINAL CCL 4, REGULATORY DETERMINATION 3, UCMR 2, UCMR 3 AND PROPOSED UCMR 4

CASRN	Chemical or chemical group	CCL 4 nomination	RD 3 short list	UCMR 2	UCMR 3	Proposed UCMR 4 [a]
630–20–6	1,1,1,2-Tetrachloroethane		X			
75–34–3	1,1-Dichloroethane				X	
96–18–4	1,2,3-Trichloropropane		X		X	
106–99–0	1,3-Butadiene				X	
123–91–1	1,4-Dioxane		X		X	
57–91–0	17 alpha-Estradiol					
71–36–3	1-Butanol					X
109–86–4	2-Methoxyethanol					X
107–18–6	2-Propen-1-ol					X
16655–82–6	3-Hydroxycarbofuran					
101–77–9	4,4′-Methylenedianiline					
30560–19–1	Acephate		X			
75–07–0	Acetaldehyde					
60–35–5	Acetamide					
34256–82–1	Acetochlor		X	X		
187022–11–3	Acetochlor ethanesulfonic acid (ESA)		X	X		
194992–44–4	Acetochlor oxanilic acid (OA)		X	X		
107–02–8	Acrolein					
142363–53–9	Alachlor ethanesulfonic acid (ESA)		X	X		
171262–17–2	Alachlor oxanilic acid (OA)		X	X		
319–84–6	alpha-Hexachlorocyclohexane	X				X
62–53–3	Aniline					
741–58–2	Bensulide					
100–44–7	Benzyl chloride					
25013–16–5	Butylated hydroxyanisole					X
133–06–2	Captan					
14866–68–3	Chlorate		X		X	
74–87–3	Chloromethane (Methyl chloride)				X	
110429–62–4	Clethodim					
7440–48–4	Cobalt		X		X	
80–15–9	Cumene hydroperoxide					
N/A	Cyanotoxins [a]	X				X
141–66–2	Dicrotophos					
55290–64–7	Dimethipin					X
330–54–1	Diuron		X			
517–09–9	Equilenin					
474–86–2	Equilin				X	
114–07–8	Erythromycin					
50–28–2	Estradiol (17-beta estradiol)				X	
50–27–1	Estriol				X	
53–16–7	Estrone				X	
57–63–6	Ethinyl Estradiol (17-alpha ethynyl estradiol).				X	
13194–48–4	Ethoprop					X
107–21–1	Ethylene glycol					
75–21–8	Ethylene Oxide					
96–45–7	Ethylene thiourea					
50–00–0	Formaldehyde					
7440–56–4	Germanium					X
74–97–5	Halon 1011 (bromochloromethane)				X	
75–45–6	HCFC–22				X	
110–54–3	Hexane					
302–01–2	Hydrazine					
7439–96–5	Manganese	X				X
72–33–3	Mestranol					
10265–92–6	Methamidophos					
67–56–1	Methanol					
74–83–9	Methyl bromide (Bromomethane)		X		X	
1634–04–4	Methyl tert-butyl ether	X	X			
51218–45–2	Metolachlor		X	X		
171118–09–5	Metolachlor ethanesulfonic acid (ESA)		X	X		
152019–73–3	Metolachlor oxanilic acid (OA)		X	X		
7439–98–7	Molybdenum		X		X	
98–95–3	Nitrobenzene		X			
55–63–0	Nitroglycerin					
872–50–4	N-Methyl-2-pyrrolidone					
55–18–5	N-Nitrosodiethylamine (NDEA)		X	X		
62–75–9	N-Nitrosodimethylamine (NDMA)		X	X		
621–64–7	N-Nitroso-di-n-propylamine (NDPA)		X	X		
86–30–6	N-Nitrosodiphenylamine		X			

EXHIBIT 1—CONTAMINANTS ON THE FINAL CCL 4, REGULATORY DETERMINATION 3, UCMR 2, UCMR 3 AND PROPOSED UCMR 4—Continued

CASRN	Chemical or chemical group	CCL 4 nomination	RD 3 short list	UCMR 2	UCMR 3	Proposed UCMR 4 [a]
930–55–2	N-Nitrosopyrrolidine (NPYR)		X	X		
25154–52–3 [b]	Nonylphenol	X				
68–22–4	Norethindrone (19-Norethisterone)					
103–65–1	n-Propylbenzene					
95–53–4	o-Toluidine					X
75–56–9	Oxirane, methyl-					
301–12–2	Oxydemeton-methyl					
42874–03–3	Oxyfluorfen					X
1763–23–1	Perfluorooctane sulfonic acid (PFOS)		X		X	
335–67–1	Perfluorooctanoic acid (PFOA)	X	X		X	
52645–53–1	Permethrin	X				X
41198–08–7	Profenofos					X
91–22–5	Quinoline					X
121–82–4	RDX		X	X		
135–98–8	sec-Butylbenzene					
107534–96–3	Tebuconazole					X
112410–23–8	Tebufenozide					
13494–80–9	Tellurium					
59669–26–0	Thiodicarb					
23564–05–8	Thiophanate-methyl					
26471–62–5	Toluene diisocyanate					
78–48–8	Tribufos					X
121–44–8	Triethylamine					
76–87–9	Triphenyltin hydroxide (TPTH)					
51–79–6	Urethane					
7440–62–2	Vanadium		X		X	
50471–44–8	Vinclozolin					
137–30–4	Ziram					

[a] Anatoxin-a, cylindrospermopsin, nodularin, total microcystin and several microcystin congeners are proposed for monitoring under UCMR 4.

[b] The organization that nominated ''nonylphenol'' for CCL 4 provided the CASRN of 25451–52–3. The name ''nonylphenol'' does not allow for a definitive identification of chemical structure since nonylphenol can exhibit two forms of isomerism. There are at least five CASRNs known to be associated with ''nonylphenol'': In addition to 25154–52–3 (which represents n-nonylphenol with the ortho-, meta-, or para-substitution unspecified), other CASRNs include: 104–40–5 (4-n-nonylphenol); 84852–15–3 (4-nonylphenol, branched); 91672–41–2 (2-nonylphenol, branched); and 139–84–4 (3-n-nonylphenol). None of these five CASRNs is adequately general enough to represent both forms of isomerism. For the sake of consistency, the CASRN provided by the nominator was selected and the additional possible CASRNs and structures are delineated here.

Microbe *	CCL 4 nomination	UCMR 3
Adenovirus	X	
Caliciviruses		X
Campylobacter jejuni		
Enterovirus		X
Escherichia coli (O157)		
Helicobacter pylori		
Hepatitis A virus		
Legionella pneumophila		
Mycobacterium avium		
Naegleria fowleri	X	
Salmonella enterica		
Shigella sonnei		

* There were no CCL 4 microbes monitored under UCMR 2, and none are proposed for monitoring under UCMR 4. The UCMR 4 Candidate Contaminants Information Compendium (USEPA, 2015b) provides a rationale for why contaminants, including microbes, were not included in the proposed UCMR 4. No CCL 4 microbes were included in the RD 3 Short List. Norovirus, a member of the calicivirus family, was included on UCMR 3 pre-screen testing.

III. Summary of the Approach Used To Identify and Evaluate Candidates for the Draft CCL 4

The Draft CCL 4 was published in the **Federal Register** on February 4, 2015 (80 FR 6076 (USEPA, 2015a)). EPA used a three step evaluation and selection process to identify candidates for the Draft CCL 4: (1) Carry forward CCL 3 contaminants (except those with regulatory determinations), (2) seek and evaluate nominations from the public for additional contaminants to consider, (3) evaluate any new data for those contaminants with previous negative regulatory determinations from CCL 1 or CCL 2 for potential inclusion on the CCL 4. The CCL 3 process is summarized in section I.E.2. A brief summary of steps 1–3 that were used to develop the Draft CCL 4 is provided in the section that follows, and a more detailed summary is provided in the Draft CCL 4 **Federal Register** notice (80 FR 6076 (USEPA, 2015a)). A summary of the public comments on the Draft CCL 4 and EPA's responses can be found in section IV.

A. Carry Forward of CCL 3 Contaminants to the Draft CCL 4

EPA carried forward all contaminants listed on CCL 3 to the Draft CCL 4 with the exception of perchlorate, for which the agency made a positive regulatory determination, and the five CCL 3 contaminants with preliminary regulatory determinations at that time, pending their final regulatory determinations. This carry forward process is consistent with that previously used in CCL 2. The agency took this approach based on the following considerations: (1) In developing the CCL 3, the agency implemented a robust process recommended by the NRC and the NDWAC to screen and score the universe of potential contaminants; (2) EPA used the best available, peer reviewed data and information to evaluate contaminants for CCL 3; and (3) Carrying forward CCL 3 contaminants allowed the agency to focus resources on evaluating contaminants nominated by the public for CCL 4 and review new data for CCL 1 or CCL 2 contaminants with previous negative regulatory determinations (68 FR 42897, July 18, 2003 (USEPA, 2003); 73 FR 44251, July 30, 2008 (USEPA, 2008b)). Carrying forward CCL 3 contaminants also allowed EPA to focus resources on UCMR 3 monitoring and analysis and RD 3 analyses.

B. Summary and Evaluation of CCL 4 Nominated Contaminants

1. CCL 4 Nominations Summary

EPA sought public nominations in a **Federal Register** notice on May 8, 2012 (77 FR 27057), for contaminants to be considered for possible inclusion in the CCL 4 (USEPA, 2012)). EPA received nominations for 59 unique contaminants for the CCL 4, including 54 chemical and five microbial contaminants. After carefully reviewing and evaluating the information and data for the nominated contaminants, EPA added two of the nominated chemicals (manganese and nonylphenol) to the Draft CCL 4. Detailed information on the nominations is contained in the ''Summary of Nominations for the Fourth Contaminant Candidate List'' support document (USEPA, 2016b).

2. How Nominated Contaminants Were Evaluated for the Draft CCL 4

Four nominated contaminants were already covered by a proposed or existing NPDWR and were not eligible for the CCL 4 since the SDWA specifies that the CCL only include those contaminants without any proposed or promulgated NPDWRs. Seven of the nominated contaminants were on CCL 3 and were carried forward to the Draft CCL 4. EPA reviewed the nominations and supporting information to determine if any new data were provided that had not been previously evaluated for CCL 3. The agency also collected and evaluated additional data for the nominated contaminants, when it was available, including the seven nominated contaminants carried forward from CCL 3. The additional data was obtained from both updated CCL 3 data sources and from new data sources that were not available at the time the agency finalized CCL 3. These data sources are listed in the ''Data Sources for the Contaminant Candidate List 4'' support document (USEPA, 2016c).

Nominated contaminants with new data were screened and scored using the same process used in CCL 3. Through this analysis, EPA added manganese and nonylphenol to the Draft CCL 4 because, as discussed in more detail in the Draft CCL 4 **Federal Register** notice (80 FR 6076 (USEPA, 2015a)), EPA determined that the new and updated health effects information and additional occurrence data merited listing the contaminants. Detailed information on the data used to screen the nominated contaminants to determine whether or not they were included in the PCCL 4 is available in the ''Screening Document for the PCCL 4 Nominated Contaminants'' (USEPA, 2016d). More detailed information on the process and the data used to evaluate nominated contaminants for listing on the CCL 4 can be found in the ''Contaminants Information Sheets (CISs) for the Final Contaminant Candidate List 4 (CCL 4)'' support documents (USEPA, 2016e).

C. Evaluation of Previous Negative Regulatory Determinations for the Draft CCL 4

EPA evaluated the 20 contaminants from CCL 1 and CCL 2 for which the agency made negative regulatory determinations. EPA collected and evaluated new or updated data for the previous negative regulatory determination chemicals. Since RD 3 was recently published using the best available data, EPA did not include the RD 3 negative regulatory determinations in this evaluation. The agency concluded there was not sufficient new information for 19 of the 20 contaminants with previous negative regulatory determinations to justify including them on the Draft CCL 4. Because commenters also did not identify such information, EPA has not included these contaminants on the Final CCL 4. EPA added manganese, a previous negative regulatory determination from RD 1, to the Draft and Final CCL 4 as previously discussed in section III.B.

IV. What comments did EPA receive on the Draft CCL 4 and how did the Agency respond?

EPA requested comment on the Draft CCL 4 and how to further improve upon the selection process developed for CCL 3 as a tool for future CCLs. The agency received 27 public comment letters on the Draft CCL 4. EPA considered all public comments and evaluated the data and information provided by commenters in selecting the Final CCL 4. EPA used the same process used in the CCL 3 to screen and score any contaminants with new data or information provided by commenters. EPA prepared responses to all public comments that are in the ''Comment Response Document for the Fourth Drinking Water Contaminant Candidate List (Categorized Public Comments)'' document, which is available in the docket for this action (USEPA, 2016f).

Based on the analyses conducted as a result of public comments, EPA determined not to list three cancelled pesticides (disulfoton, fenamiphos, and molinate) on the Final CCL 4 that were included on the Draft CCL 4 because, as discussed more fully in the following sections, these chemicals are not known or anticipated to occur in PWSs and are not anticipated to require regulation. With the exception of these three pesticides, all of the contaminants listed on the Draft CCL 4 are listed on the Final CCL 4.

A summary of some of the key public comments received, recommendations from EPA's Science Advisory Board (SAB) on the CCL 4, and EPA's responses are provided in this section. Data used to evaluate the contaminants for the CCL 4 can be found in the Contaminant Information Sheets (CISs) for the Final Fourth Contaminant Candidate List (CCL 4) (USEPA, 2016e), which can be found in the docket for this action available at *www.regulations.gov* by searching for docket EPA–HQ–OW–2012–0217.

A. Recommendations From the EPA Science Advisory Board

The EPA SAB and its Drinking Water Committee (DWC) reviewed the Draft CCL 4 and provided recommendations to the Administrator on January 11, 2016, in their report ''Review of the EPA's Draft Fourth Drinking Water Contaminant Candidate List (CCL 4)'' (USEPA, 2016g). On April 29–30, 2015, the SAB DWC held a public meeting to discuss responses to EPA charge

questions. During this meeting, EPA provided an overview of the process used to develop the Draft CCL 4 and answered questions from the Committee.

The SAB's recommendations and comments on the overall CCL 4 process and documentation are summarized in the following bullet points:

- The SAB stated that the general protocol used to evaluate contaminants on the CCL 4 is well described and conceptually clear. They concluded the transparency and clarity of the process has improved since CCL 3 was finalized.
- The SAB said that the documentation for CCL 4 lacked specific information necessary in order to follow the decision-making process for listing an individual contaminant on the Draft CCL 4. Specific suggestions to improve transparency and clarity of the support documents include:
  - Develop a summary table that consolidates summary information on all carried forward and nominated contaminants.
  - Display results of the CCL 4 screening and classification process in a manner that explicitly outlines the scoring schemes used and the scientific rationale in applying the selection criteria.
  - Provide examples for both microbial and chemical contaminants that display the process of how contaminants were included on or eliminated from the Draft CCL 4.
  - Clearly describe and improve the process for removing contaminants from prior CCLs, where appropriate, when such lists serve as the basis for a new CCL.
  - Explain the evaluation of CCL contaminants during the RD process.
- The SAB recommended that EPA should utilize data from UCMR 3 monitoring as it becomes available.
- The SAB stated that the CCL 4 list includes a number of contaminants carried forward from the CCL 3 without providing a sense of the relative priority of the listed chemicals. The SAB recommended EPA prioritize the list to inform future regulatory decision-making and to help researchers focus their efforts.

EPA Response: EPA has provided a more detailed response to the SAB in the document, ''Response to SAB recommendations on the Draft CCL 4'' (USEPA, 2016h), which can be found in the docket for this action available at *www.regulations.gov* by searching for docket EPA–HQ–OW–2012–0217. This section summarizes EPA's response to some of the key SAB recommendations.

The agency has updated the technical support documents for the CCL 4 to increase the transparency of its decisions relative to the contaminants included on the Final CCL 4. For instance, the CIS support document provides examples showing the criteria and process for including or excluding chemical and microbial contaminants from the CCL 4. Additionally, a summary table in the same support document presents factors used to determine how the CCL 4 contaminants were selected. The agency also summarizes the process used to evaluate contaminants under RD 3 in section I.E.3 of this notice.

While EPA agrees with the SAB about the importance of using UCMR data to inform the CCL, the agency does not believe it is appropriate to use preliminary UCMR 3 data to make final CCL 4 decisions. The UCMR 3 data set was not finalized within the timeframe for use and analysis under CCL 4. The UCMR 3 monitoring period ended in December 2015 and results are reported to EPA through 2016. After the monitoring period is completed, the results undergo review for quality assurance and are subject to change following further review by the analytical laboratory, the PWS, the State and EPA. The agency will perform further analysis of both the health effects and occurrence of contaminants monitored under UCMR 3 during the RD 4 and CCL 5 development process.

EPA identified the current occurrence, health effects and analytical methods data needs of CCL 4 contaminants for RD 4 evaluations in section V of this notice. This data needs table is presented to provide a sense of relative priority for listed contaminants by identifying those contaminants likely to have sufficient data for further evaluation under the next RD and those that have research needs. As the agency continues to evaluate contaminants on the CCL 4, EPA will work with agency and non-EPA scientists to develop and collect the best available science to support decision-making for future determinations.

B. Public Comments

1. General Comments on CCL 4

EPA received comments, both in support of and against the carry forward of contaminants from the CCL 3 to the Draft CCL 4. One commenter asked for more information on the decision to carry forward CCL 3 contaminants to the Draft CCL 4. Commenters not in support of the carry forward of CCL 3 contaminants thought EPA should reassess the science on all the CCL 3 contaminants. One commenter also thought EPA should limit the number of contaminants on the CCL so that research for the contaminants could be completed between one CCL and the next. One commenter supported the carry forward approach because the CCL 3 contaminants already have data available that shows there may be a potential public health impact. They also suggested that EPA should continue to evaluate these contaminants until enough data are collected to support a regulatory determination.

EPA response: The reasons for carrying forward contaminants from the CCL 3 to the CCL 4 are presented in section III.A of this notice. EPA has continued to collect data and further evaluate the science for many of the contaminants that were carried forward from the CCL 3 to the CCL 4. For example, since the listing of contaminants on CCL 3, EPA has monitored and collected occurrence data for several CCL contaminants through the UCMR program. EPA has also further analyzed and evaluated many of the CCL 3 contaminants that were carried forward to CCL 4 under the RD 3 process. Exhibit 1 in section II.A of this notice lists CCL 4 contaminants that were evaluated under these other agency efforts. Although EPA carried forward contaminants from the CCL 3 to the CCL 4, EPA intends to collect new data and conduct further evaluations of unregulated contaminants for CCL 5.

EPA does not agree that the CCL should be limited to a certain number of contaminants. The CCL identifies contaminants that are ''known, or anticipated to occur in PWSs,'' and is the first step in identifying contaminants that may require regulation. Some of the contaminants on the list may have sufficient information to make regulatory determinations in the near term and some of the contaminants on the list need additional data in order to determine the appropriate agency action. While the SDWA does not limit the CCL to a particular number of contaminants, the agency recognizes the need to communicate data needs for contaminants included on the Final CCL 4. Therefore, EPA has provided a summary of the current data needs for RD 4 evaluations in section V of this notice. The agency will continue to evaluate data needs through the RD 4 process and will continue to work with internal and external researchers to discuss research needs and priorities.

2. Chemical Contaminants

a. Contaminants With Release Data

EPA received comments that several contaminants listed based on

environmental release data for evaluating occurrence (*e.g.,* ethylene oxide, ethylene glycol, and toluene diisocyanate) should not be on the CCL 4 because one or more of their intrinsic physical or chemical properties would result in limited occurrence in water. Commenters cited the hydrolysis and biodegradation rate, or quick volatilization from water as reasons these chemicals should be removed from the Final CCL 4. Additionally, commenters noted that some of these contaminants have relatively short half-lives in water or may not be long-lived in the environment and thus should not be listed on the Final CCL 4.

EPA Response: EPA is including ethylene oxide, ethylene glycol, and toluene diisocyanate on the Final CCL 4 because these contaminants may be anticipated to occur in PWSs and may require regulation. Although no occurrence information in finished or ambient water is available for these contaminants, to be consistent with the CCL 4 protocol, EPA used total environmental release data reported in the TRI to evaluate and score the occurrence attributes. In response to comments citing that EPA should consider physical and chemical properties, EPA conducted additional analyses that considers physical and chemical properties and environmental fate parameters to provide an alternate score for the magnitude attribute. For this additional analysis on the specific contaminants commented on (*e.g.,* ethylene oxide, ethylene glycol, and toluene diisocyanate), EPA used the persistence and mobility scoring protocol (which is the protocol used for those chemicals with only production data) as the basis for scoring the magnitude attribute as described in the Final CCL 3: Classification of the PCCL to the CCL (USEPA, 2009e), available in the docket for this action. The model results for these contaminants using this alternate magnitude score still indicated that the contaminants should be listed (for a summary of how the classification model results were used to select contaminants for CCL 4, please see USEPA, 2016e, available in the docket for this action). These additional analyses are further described in the ''Comment Response Document for the Fourth Drinking Water Contaminant Candidate List (Categorized Public Comments)'' document, which is available in the docket for this action (USEPA, 2016f). Additionally, as the SAB (USEPA, 2016h) noted, ''contaminants with a half-life in drinking water sources of days to weeks may still pose a public health concern.''

Considering the comments received on the Draft CCL 4, in future CCLs, EPA may refine analyses to consider if physical and chemical properties can be incorporated into the evaluations of contaminants listed based on environmental release data for occurrence.

b. Cyanotoxins

EPA received comments supporting the inclusion of cyanotoxins on the CCL 4. Some comments requested that cyanotoxins be listed by individual toxins rather than including cyanotoxins as a group on the Final CCL 4 in order to prioritize research on health effects, analytical methods, occurrence and treatment. Comments specifically requested listing the key variants of microcystins, cylindrospermopsin, anatoxin-a, saxitoxin and euglenophycin.

EPA Response: EPA agrees that cyanotoxins should be included on the CCL 4, and has included cyanotoxins as a group on the Final CCL 4. The group of cyanotoxins includes all toxins produced by cyanobacteria including but not limited to microcystins, cylindrospermopsin, anatoxin-a and saxitoxin. EPA has provided CIS sheets for microcystin-LR, cylindrospermopsin, anatoxin-a and saxitoxin. Under CCL 3, cyanotoxins were listed as a group and EPA released CIS sheets for microcystin-LR, cylindrospermopsin and anatoxin-a. Based on data submitted in public comments, EPA updated previous CIS sheets and developed a CIS sheet for saxitoxin. EPA was unable to develop a CIS sheet for euglenophycin due to insufficient information on health and occurrence. EPA acknowledges the comments to list specific cyanotoxin compounds on the CCL instead of listing cyanotoxins as a group. However, because of the similar sources of cyanotoxins (*i.e.,* cyanobacteria) their management may be similar. Furthermore, due to significant information gaps for some cyanotoxins (*e.g.,* euglenophycin and nodularin and many microcystin congeners), EPA has determined it most appropriate to continue to list cyanotoxins as a group at this time. EPA agrees that microcystins, cylindrospermopsin, anatoxin-a and saxitoxin can be of concern for drinking water supplies. EPA acknowledges associated data gaps for euglenophycin as well as those for other cyanotoxins. EPA included total microcystins and six microcystin congeners (-LA, -LF, -LR, -LY, -RR, and -YR), cylindrospermopsin, anatoxin-a and nodularin on the proposed UCMR 4 for monitoring by PWSs. The occurrence information collected under the UCMR 4 will be used to further evaluate the appropriate agency regulatory determination and research actions.

c. Perfluorinated Compounds (PFOA and PFOS)

EPA received a comment supporting the inclusion of perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS) on the CCL 4. EPA also received comments that PFOS and/or PFOA should not be listed on the Final CCL 4. The commenter supporting inclusion of these chemicals on the CCL 4 cited their persistence in the environment and toxicological effects as reasons to include them on the Final CCL 4, and encouraged EPA to consider these chemicals for drinking water regulation. Commenters supporting removal of PFOA and/or PFOS from the CCL 4 cited the low frequency of detections of PFOA and/or PFOS under the UCMR 3 monitoring as of January 2015. Additional reasons cited by commenters that these chemicals should not be listed on the Final CCL 4 are the voluntary efforts by manufacturers to reduce emissions and work towards elimination of these chemicals from products.

EPA Response: EPA is including PFOA and PFOS on the Final CCL 4 because these contaminants are known to occur in drinking water, are persistent in the environment and in the human body, have shown to be toxic in animal studies and may require regulation.

As discussed in the summary of EPA responses to the SAB in this section (IV.A) of the notice, EPA did not use preliminary UCMR 3 monitoring results for the CCL 4.

EPA acknowledges the industry commitments to voluntarily reduce the use and production of PFOA and PFOS; however, there are still a limited number of ongoing uses of PFOA and PFOS. Additionally, these chemicals are persistent in the environment and in the human body, which indicates they may be present in water or migrate to drinking water sources even after uses and production have been reduced or ceased, and therefore potential exposure may still be of concern.

In May 2016, EPA released lifetime health advisories for PFOA and PFOS (USEPA, 2016i, available in the docket for today's action) and Health Effects Support Documents based on the agency's assessment of the latest peer reviewed science. The health advisories provide federal, state, tribal and local officials with information on the health risks of these chemicals, occurrence,

analytical methods and treatment technologies so that they can determine what actions to take to protect consumers.

In accordance with the SDWA, EPA will consider the occurrence data from the final UCMR 3 data set, along with the peer reviewed health effects assessments supporting the May 2016 PFOA and PFOS Health Advisories, to make a regulatory determination whether or not PFOA and PFOS require NPDWRs.

d. Pesticides

Several public commenters requested that specific pesticides be removed from the Final CCL 4. EPA agrees with commenters that three of these pesticides (disulfoton, fenamiphos, and molinate) should not be listed on the Final CCL 4; therefore, EPA is removing them from the Final CCL 4. The evaluation of these three pesticides is summarized in the following paragraphs.

(i) Disulfoton

EPA received a comment from the public that disulfoton should not be included on the Final CCL 4. The commenter noted that disulfoton had zero or very few detections nationally on any previous round of UCMR monitoring and therefore does not warrant national regulation.

EPA Response: EPA agrees with the commenter that disulfoton should not be included on the Final CCL 4. Disulfoton sales and distribution were cancelled in the U.S., effective December 31, 2010, with remaining product stocks to be used until depleted (74 FR 48551, September 23, 2009 (USEPA, 2009g)). The UCMR 1 finished water screening survey (SS) found no detections of disulfoton in 2,300 samples from 295 PWSs. The United States Geological Survey (USGS) has detected disulfoton infrequently in ambient water. During the 1992–2001 USGS National Water-Quality Assessment (NAWQA) Program monitoring, disulfoton was detected in only 17 sites out of 7,118 ambient water sites sampled (see the CIS for this contaminant (USEPA, 2016e)). Out of the 17 sites with detections, only two sites had detects at levels greater than the health reference level of potential concern for drinking water. Given that disulfoton was detected in those two sites prior to its cancellation, the agency expects that any potential disulfoton occurrence in water will likely continue to decrease in the future. Although persistent environmental contaminants may occur in a PWS after its uses are cancelled, based on its physical and chemical properties, disulfoton has low to moderate mobility in water and it is only moderately persistent in the environment (see the CIS for this contaminant (USEPA, 2016e), which can be found in the docket for this action). Therefore its occurrence is expected to decrease over time.

EPA is not including disulfoton on the Final CCL 4 because it is not known or anticipated to occur in drinking water. Disulfoton likely has low potential for public health concern based on its cancellation status, zero detections in PWSs (from UCMR 1 data), and very few detections in ambient water from a large number of sites sampled (by the USGS NAWQA program).

(ii) Fenamiphos

EPA received a comment from the public that fenamiphos should not be included on the Final CCL 4. The commenter stated that the registrant for fenamiphos agreed to cancel all uses, and all existing stocks are to be used by October 6, 2017. The commenter stated that very limited uses remain of products containing fenamiphos in the U.S. and use will be discontinued after 2017.

EPA Response: EPA agrees with the commenter that fenamiphos should not be included on the Final CCL 4 because it is not anticipated to occur in drinking water and is not likely to require regulation. Fenamiphos product registrations were cancelled, and the sale and distribution of fenamiphos by the registrant was prohibited on May 31, 2007. This cancellation followed a five-year phase-out period, beginning in 2003, intended to limit and reduce production of fenamiphos. The sale and distribution of any remaining stocks will be prohibited after October 6, 2017 (79 FR 59262, October 1, 2014; USEPA, 2014c). Fenamiphos was not monitored under UCMR, thus no national scale monitoring has been conducted in PWSs. While fenamiphos was not included in the USGS NAWQA national-scale ambient water monitoring (1992–2001), based on the USGS Pesticide National Synthesis Project (USGS, 2012), fenamiphos use is estimated to have steadily declined. The USGS estimated a usage level of approximately 1.0 million pounds/year of widespread use in certain regions per year in 1992, which declined to an estimated 0.2 million pounds/year in 2002 and further declined to an estimated 0.03 million pounds/year of limited regional uses in 2012. EPA expects fenamiphos occurrence in water will likely continue to decrease due to the declining trend in usage for many years and the prohibition on usage of existing stocks in the U.S. effective after October 6, 2017.

In summary, due to its registration cancellation status, significant decline in usage (based on estimated data from 1992–2013), moderate persistence in the environment, and the prohibition of existing stocks (effective after October 6, 2017), EPA does not anticipate fenamiphos to occur in PWSs or to require regulation, therefore, it is not included on the Final CCL 4.

(iii) Molinate

EPA received a comment from the public that molinate should not be included on the Final CCL 4. The commenter noted that molinate had zero or very few detections nationally on any previous round of UCMR monitoring and therefore does not warrant national regulation.

EPA Response: EPA agrees with the commenter that molinate should not be included on the Final CCL 4. The UCMR 1 finished water assessment monitoring found only one sample with a detection of molinate out of 33,799 samples taken from 3,873 PWSs. The single sample detection was below the health reference level of potential concern for molinate in drinking water. Further, molinate sales and distribution were cancelled in the U.S. effective July 1, 2009, with remaining stocks required to be used by August 31, 2009, (73 FR 44261, July 30, 2008 (USEPA, 2008c)). This cancellation action concluded a six-year scheduled phaseout of molinate. The agency is not including molinate on the Final CCL 4 because it is not anticipated to occur in PWSs at levels of public health concern. The agency expects the potential for molinate to occur in water will likely continue to decrease due to the prohibition on product use in the U.S. since 2009.

e. Manganese

EPA received four comments that support the inclusion of manganese and two comments that do not support the inclusion of manganese on CCL 4. Commenters supporting the inclusion of manganese on CCL 4 cited recent studies that showed neurological effects in children and infants exposed to excess manganese via drinking water. Commenters also noted manganese frequently occurs in water and should be included on CCL 4 so that national occurrence data can be obtained through UCMR monitoring. Commenters who did not support the inclusion of manganese on the CCL 4 cited that the primary route of human exposure to manganese is through food, not drinking

water. Also, commenters question the link between the consumption of drinking water and developmental neurotoxicity from manganese exposure to warrant inclusion on the CCL 4.

EPA Response: EPA agrees with the commenters that support manganese inclusion on the CCL 4, and is including manganese on the Final CCL 4 because it is known to occur in PWSs and may require regulation. The evidence from the studies provided by commenters indicate that exposure to excess manganese may present a substantial health threat to children and infants. EPA is continuing to evaluate the potential risks to children and infants based on over 30 recent studies cited by the public during the nomination and comment period including those by Bouchard et al. (2011), Oulhote et al. (2014) and Kern and colleagues (2010, 2011), whom have indicated neurological effects stemming from the exposure to excess manganese.

EPA also agrees with the commenters assertion that manganese is known to occur in PWSs. EPA has included the occurrence data used to evaluate manganese in the CIS for this contaminant. This data includes USGS monitoring of ambient water, as well as drinking water data from several states. The data indicates that manganese is known to occur in public drinking water supply wells and supports the previous information from the National Inorganics and Radionuclides Survey (NIRS). EPA has proposed to monitor manganese under UCMR 4.

EPA has reviewed all of the current data submitted by commenters on the manganese health effects and found that the existing 2004 Health Advisory could warrant an update. Since manganese is not a regulated contaminant in drinking water, the Secondary Maximum Contaminant Level of 0.05 mg/L is not mandatory and does not require monitoring. The current IRIS assessment for manganese dates to 1995 (USEPA, 1995b) and the Health Advisory to 2004. The Agency for Toxic Substances and Disease Registry 2012 Toxicological Profile did not establish guidelines that applied to oral exposures and the Institute of Medicine (2001) provides Tolerable Upper Intake Levels for developmental lifestages and adults. The database of health effects studies for oral manganese exposures has expanded considerably since the last EPA assessment, therefore manganese is a good candidate for re-evaluation. EPA intends to evaluate the new toxicological findings and UCMR 4 monitoring data and will use this information in future regulatory decision-making, and to revise the current Health Advisory, if appropriate. More detailed evaluations of the routes of exposure usually occur in the regulatory determination and regulatory development processes.

f. Nonylphenol

EPA received two comments supporting the inclusion of nonylphenol and three comments that nonylphenol should not be included on the Final CCL 4. The commenters supporting inclusion of nonylphenol on the CCL 4 cited new health effects and occurrence data as reasons to include them on the Final CCL 4 and stated that EPA has adequate justification to include nonylphenol on the CCL based on this information. The commenters requesting that nonylphenol not be included on the Final CCL 4 cited a surface water monitoring study from 2002 and industry efforts to reduce surfactant usage as reasons nonylphenol should not be listed on the Final CCL 4. The main use of nonylphenol is in the manufacture of nonylphenol ethoxylates, which have been used in a wide range of industrial applications and consumer products including laundry detergents, cleaners, degreasers, paints and coatings and other uses (79 FR 59186, October 1, 2014 (USEPA, 2014d)).

EPA Response: EPA is including nonylphenol on the Final CCL 4 as proposed because it is anticipated to occur in drinking water, has potential adverse health effects (Bontje et al., 2005), and may require regulation. EPA evaluated the 2002 USGS reconnaissance study (Kolpin et al., 2002) identified by the commenter and used it to evaluate the occurrence of nonylphenol. While there were more recent finished water studies available, EPA considers the 2002 USGS study as the most appropriate study to evaluate the occurrence of nonylphenol for CCL 4 given the greater number of samples and larger geographic scale. Additionally, more recent studies indicate that nonylphenol has been detected in drinking water. While EPA appreciates the information from commenters on reduced usage of nonylphenol, we believe measured occurrence data from water sources are preferred over production or usage information when evaluating the likelihood of occurrence in drinking water.

3. Microbial Contaminants

a. Overall Process Comments

EPA received comments arguing that the follow-through on the microbes listed in previous CCLs has been inadequate, that EPA should identify high priority pathogens on the CCL 4 and identify information gaps and barriers to obtaining information associated with each pathogen. EPA received comments requesting an open process for prioritizing and collecting information, to adopt a collaborative method development process and to rank microbes by treatability. EPA also received comments to focus priorities on distribution and plumbing system biofilm concerns and to evaluate microbial contaminants in the context of diverse water supplies such as drinking water sources from water reuse treatment facilities.

EPA Response: EPA's criteria for evaluating and prioritizing pathogens for inclusion in the CCL 3 included health effects, waterborne disease outbreaks (WBDO) and occurrence information (73 FR 9628 (USEPA, 2008a)). EPA developed and implemented a systematic strategy and set of criteria for selecting the pathogens for CCL 3. This is the screening and scoring process described in detail in the support documents in the docket of the Final CCL 3 (*e.g.,* see the Final Contaminant Candidate List 3 Microbes: PCCL to CCL Process for more information on all of the scores). The CCL 3 and CCL 4 processes provided multiple opportunities for public input (*e.g.,* nominations, public comment) to allow for an open process. In order to provide additional clarity to the scoring process, EPA is including an example schematic describing the process of evaluating a pathogen for inclusion on the list and a pathogen for exclusion from the list. This schematic can be found in the CIS's for the Final Fourth Contaminant Candidate List (USEPA, 2016e). EPA acknowledges the request to identify information gaps; therefore, data needs are described in section V of this **Federal Register** notice.

The EPA's Office of Water coordinates with EPA's Office of Research and Development to discuss research needs and priorities. Research on distribution system and premise plumbing biofilm concerns has been incorporated into EPA's strategic research plan. EPA acknowledges the comments on diverse water supplies and method development and will consider these comments as it develops future research priorities.

b. Pathogens for Inclusion

EPA received comments supporting the proposed inclusion of *Mycobacterium avium, Legionella pneumophila, Naegleria fowleri,* enteroviruses and Heterotrophic Plate Count (HPC). EPA also received

comments requesting recommendations for *Legionella pneumophila* management.

EPA Response: EPA included *Mycobacterium avium, Legionella pneumophila, Naegleria fowleri,* and enteroviruses on the Final CCL 3 and were therefore carried forward to the draft and Final CCL 4. While the broader issue of the management of *Legionella pneumophila* is outside the scope of today's action, the agency agrees it is of great importance and *Legionella* remains a risk to building water systems. In September 2016, EPA released a document reviewing the available technology to treat *Legionella* titled *Technologies for Legionella Control in Premise Plumbing Systems: Scientific Literature Review* (USEPA, 2016j). This document provides information to state and local decision-makers about how they might utilize treatment as part of their efforts to manage *Legionella* risks in building water systems.

EPA disagrees that HPC should be included on CCL 4. The group of HPC usually includes a diverse group of microorganisms that are part of the natural environment in water. Available epidemiological evidence shows no relationship between gastrointestinal illness and HPC bacteria in drinking water (Calderon, 1988; Calderon and Mood, 1991; Payment et al., 1997; Bartram J et al., 2003). Thus, EPA considers the potential health risk of HPC bacteria in drinking water as likely negligible and is not including HPC on the Final CCL 4. In addition, HPC bacteria are addressed under the Surface Water Treatment Rule as a treatment technique where they can be monitored in lieu of a disinfectant residual because HPC is an alternative method of determining disinfectant residual levels.

c. Pathogens for Exclusion

EPA received comments not supporting the proposed inclusion of *Escherichia coli* O157 and *Helicobacter pylori,* noting these pathogens were unlikely to occur in treated drinking water.

EPA Response: EPA's criteria for evaluating and prioritizing pathogens for inclusion in the Draft CCL 3 **Federal Register** notice, included health effects, WBDO and occurrence information (73 FR 9628 (USEPA, 2008a)). Treatability was not part of the scoring criteria considered for CCL 3 inclusion. Although some of the microbes listed in the Draft CCL 4 may be well controlled by drinking water treatment (*i.e.,* disinfection), not all PWSs in the U.S. are required to treat. For example, approximately thirty percent of the 40,000 community ground water systems do not have disinfection treatment (USEPA, 2013). For the reasons discussed in detail in the Draft CCL 3 **Federal Register** notice (73 FR 9628 ((USEPA, 2008a)), EPA did not preclude pathogens from CCL 3 and CCL 4 based on their potential to be controlled by existing treatment technique regulations.

V. Data Needs for CCL 4 Contaminants

After the listing process, the CCL 4 contaminants will be further evaluated in a separate action called Regulatory Determination 4 (RD 4). The process used to previously evaluate CCL 3 contaminants under RD 3 is described in section I.E.3 of this notice. EPA anticipates using a similar process to evaluate CCL 4 contaminants under RD 4, although it is possible that some modifications may be made to this process. In the initial phases of this process, EPA determines if sufficient data are available to meet the three RD criteria set forth in SDWA section 1412(b)(1) and previously outlined in section I.D.4 of this notice. If sufficient data are available to meet all three statutory criteria, a regulatory determination may be made. As discussed in section I.D.4, SDWA requires EPA to make regulatory determinations every five years on at least five CCL contaminants.

The SAB and other commenters have recommended additional prioritization of the CCL 4 contaminants to communicate research needs, help focus efforts for researchers, and inform future regulatory decision-making. EPA acknowledges that many contaminants on the CCL 4 have substantial data and information needs to fulfill in order for the agency to make a regulatory determination in accordance with SDWA 1412 (b)(1)(A). These current data needs are described in the following section, and are presented in Exhibit 2. By identifying those contaminants that need additional research and information, EPA is communicating to stakeholders both research priorities and gaps for these contaminants.

Categorization of Contaminants

EPA assessed the data and information gathered on the CCL 4 contaminants and generated a table (Exhibit 2) to help identify data/information needs for further evaluation under RD 4. To develop this table, EPA began with the information contained in the data availability/Phase 1 table included in Appendix D of the Protocol for the RD 3 (USEPA, 2014b), which describes the status of the best available occurrence data and health effects assessments for CCL 3 contaminants. EPA updated the occurrence data needs for CCL 4 contaminants by including which contaminants were monitored on the UCMR 3, and updated the health effects data needs based on available EPA or other non-EPA peer reviewed assessments as of May 2016. Since manganese and nonylphenol were nominated and added to the CCL 4 (not carried forward from CCL 3), data collected under CCL 4 was included in the Contaminant Information Sheets (USEPA, 2016e) for these contaminants and was used to assess the data needs. EPA characterized each chemical contaminant included on the Final CCL 4 based on their health effects, occurrence and analytical methods data needs.

EPA then categorized contaminants into six categories depending upon the availability of their occurrence data and health assessment. Contaminants in Group A have nationally representative finished drinking water data and a peer reviewed health assessment and are likely to have sufficient data available to be placed on a short list for further assessment under RD 4. Contaminants in Group B have finished drinking water data that is not nationally representative and peer reviewed health assessments. These contaminants may have sufficient data to be placed on a short list for further assessment under RD 4, particularly if the non-nationally representative occurrence data shows detections at levels of public health concern. Contaminants in groups C, D, E, and F of Exhibit 2 that lack either a peer reviewed health assessment or finished water data have more substantial data needs and are unlikely to have sufficient information to allow further assessment under the RD 4. For these contaminants, EPA plans to identify them as research priorities and work to fill their research needs such as evaluating the potential for monitoring under the UCMR or identifying those contaminants as priorities for health effects research. The health effects and occurrence data sources used to classify data needs are featured in Appendix 6 of the CISs for the Final Fourth CCL in the docket (USEPA, 2016e). The following sections describe the types of data or information gaps outlined in Exhibit 2 and provide examples.

A. Health Effects

Under the RD process, EPA relies on external peer-reviewed health assessments to determine if and at what level a contaminant ''may have an adverse effect on the health of persons.'' Health effects data sources evaluated for

RD 3 included EPA health assessments, or peer reviewed health assessments developed by other organizations such as the National Academy of Sciences, the Agency for Toxic Substances and Disease Registry, World Health Organization, the California EPA's Office of Environmental Health Hazard Assessment, Registry of Toxic Effects of Chemical Substances, and/or supplemental data from a single study, if the health assessment is peer reviewed and uses comparable methods, standards and guidelines to an EPA health assessment.

As shown in Exhibit 2, EPA categorized the health effects data needs in the following way:

1. If a peer reviewed health assessment is available or is in the process of being revised, the contaminant is considered to have health effects data available.

2. If a peer reviewed health assessment is not available, then the contaminant is considered to not have health effects data currently available.

B. Occurrence

For RD evaluations, the occurrence data availability assessment is used to identify contaminants that may have sufficient data and information to characterize their status as known or likely to occur in PWSs. EPA uses data from many sources to evaluate occurrence for contaminants considered for RD (see Appendix C of USEPA, 2014b for occurrence data sources evaluated under RD 3). For this evaluation, EPA prefers to have nationally representative finished drinking water occurrence data, but finished drinking water data that are not nationally representative may also be used to determine if the contaminant occurs frequently at levels of public health concern. In addition, the agency evaluates supplemental sources of information (*e.g.,* ambient/source water occurrence, production/use and environmental release data). For the purposes of identifying current data needs for RD 4, as shown in Exhibit 2, EPA categorized the occurrence data needs in the following way:

- Finished drinking water occurrence data that are nationally representative are available.
  - Data sources may include UCMRs (*i.e.,* UCMR 1, UCMR 2 and UCMR 3), the Unregulated Contaminant Monitoring Program (Round 1 and Round 2) and NIRS.
- Finished drinking water occurrence data that are not nationally representative are available. These data may include:
  - Finished water assessments by federal agencies (*e.g.,* EPA, the U.S. Department of Agriculture and USGS). These may include assessments that are geographically distributed across the nation but are not intended to be statistically representative of the nation (*e.g.,* the Disinfection By-Product Rule Information Collection Request).
  - State-level finished water monitoring data.
  - Research performed by institutions and universities (*e.g.,* scientific literature), including targeted or local monitoring studies.
  - Various reports from the Centers for Disease Control and the scientific literature for microbes.
- Finished drinking water occurrence data are not available.
  - The best available data sources may include environmental release data (such as TRI data or pesticide application data) or ambient water data.

EPA has also indicated with a footnote in the occurrence data column, highlighting which contaminants are proposed for monitoring under the UCMR 4 from 2018–2020. Therefore, although some of the contaminants that may be monitored under UCMR 4 are shown in this table as currently having data gaps for occurrence (*e.g.,* they only have drinking water data that is not nationally representative or release data), EPA has proposed to fill those occurrence data needs for future RD evaluations.

C. Analytical Methods

To conduct nationally representative drinking water occurrence studies that could support a regulatory determination, EPA needs to have an analytical method that is suitable for the drinking water matrix and is robust enough to be used by many laboratories to conduct national studies and/or compliance monitoring. For the purpose of CCL 4, EPA assessed the status of the development of analytical methods for drinking water and determined estimated reporting levels for each contaminant. EPA also assessed method sensitivity with respect to the HRL for the chemical contaminants. Method sensitivity is measured by using method specific reporting levels, lowest concentration minimum reporting levels, and promulgated minimum reporting level. While there are many methods for monitoring the CCL 4 pathogens available from scientific papers and consensus organizations, not all of them may be appropriate for use in drinking water or for a national monitoring effort. Of the CCL 4 pathogens, only enterovirus and caliciviruses have an EPA-approved method for drinking water. The status of drinking water analytical methods for the CCL chemical contaminants, as of May 2016, is presented in Exhibit 2. EPA categorized the analytical method needs in the following way:

- An EPA drinking water method, with estimated reporting levels that are adequate for analysis relative to the current HRL or health assessment is available.
- An EPA drinking water method is available but the minimum reporting level (MRL) does not allow for quantitation of the contaminant at a concentration below the current HRL. These methods are denoted in Exhibit 2 by ''(MRL>HRL)''.
- An EPA drinking water method is currently being developed.
- An EPA drinking water method is not available.

Although not shown in Exhibit 2, EPA also considers other government and consensus methods (*e.g.,* Standard Methods and ASTM, International) when considering analytical methods that may be used or modified for UCMR monitoring.

EXHIBIT 2—REGULATORY DETERMINATION DATA/INFORMATION NEEDS FOR CCL 4 CONTAMINANTS

CASRN	Common name	What is the best available occurrence data?	Is a health assessment available?	Is an EPA analytical method available?
(A) Contaminants with Nationally Representative Finished Water Occurrence Data and Peer Reviewed Health Assessments				
630–20–6	1,1,1,2-Tetrachloroethane	National	Yes [a]	Yes.
96–18–4	1,2,3-Trichloropropane	National	Yes	Yes (MRL > HRL).
123–91–1	1,4-Dioxane	National	Yes	Yes.
16655–82–6	3-Hydroxycarbofuran	National	Yes [b]	Yes.
34256–82–1	Acetochlor	National	Yes	Yes.
187022–11–3	Acetochlor ethanesulfonic acid (ESA)	National	Yes [b]	Yes.

EXHIBIT 2—REGULATORY DETERMINATION DATA/INFORMATION NEEDS FOR CCL 4 CONTAMINANTS—Continued

CASRN	Common name	What is the best available occurrence data?	Is a health assessment available?	Is an EPA analytical method available?
194992–44–4	Acetochlor oxanilic acid (OA)	National	Yes [b]	Yes.
142363–53–9	Alachlor ethanesulfonic acid (ESA)	National	Yes	Yes.
171262–17–2	Alachlor oxanilic acid (OA)	National	Yes [b]	Yes (MRL > HRL).
14866–68–3	Chlorate	National	Yes	Yes.
7440–48–4	Cobalt	National	Yes [a]	Yes.
NA	Enterovirus	National	Yes	Yes.
7439–96–5	Manganese	National [c]	In Development	Yes.
74–83–9	Methyl bromide (Bromomethane)	National	Yes [a]	Yes.
51218–45–2	Metolachlor	National	Yes	Yes.
171118–09–5	Metolachlor ethanesulfonic acid (ESA)	National	Yes	Yes.
152019–73–3	Metolachlor oxanilic acid (OA)	National	Yes	Yes.
7439–98–7	Molybdenum	National	In Development	Yes.
98–95–3	Nitrobenzene	National	Yes	Yes.
55–18–5	N-Nitrosodiethylamine (NDEA)	National	Yes	Yes (MRL > HRL).
62–75–9	N-nitrosodimethylamine (NDMA)	National	Yes [a]	Yes (MRL > HRL).
621–64–7	N-Nitroso-di-n-propylamine (NDPA)	National	Yes	Yes (MRL > HRL).
930–55–2	N-nitrosopyrrolidine (NPYR)	National	Yes [a]	Yes.
1763–23–1	Perfluorooctane sulfonic acid (PFOS)	National	Yes	Yes.
335–67–1	Perfluorooctanoic acid (PFOA)	National	Yes	Yes.
121–82–4	RDX	National	In Development	Yes.
7440–62–2	Vanadium	National	Yes [a]	Yes.
(B) Contaminants With Non-Nationally Representative Finished Water Occurrence Data and Peer Reviewed Health Assessments				
71–36–3	1-Butanol	Non-National [c]	In Development	Yes.
30560–19–1	Acephate	Non-National	Yes	Yes.
107–02–8	Acrolein	Non-National	Yes [a]	No.
NA	Adenovirus	Non-National	Yes	No.
319–84–6	alpha-Hexachlorocyclohexane	Non-National [c]	Yes	Yes (MRL > HRL).
741–58–2	Bensulide	Non-National	Yes	Yes.
100–44–7	Benzyl chloride	Non-National	Yes [a]	No.
NA	Caliciviruses	Non-National	Yes	Yes.
133–06–2	Captan	Non-National	Yes	No.
NA	Cyanotoxins	Non-National [d]	Yes for microcystins and cylindrospermopsin, no for other cyanotoxins.	Yes.
141–66–2	Dicrotophos	Non-National	Yes	Yes.
330–54–1	Diuron	Non-National	Yes	Yes.
13194–48–4	Ethoprop	Non-National [c]	Yes	Yes.
107–21–1	Ethylene glycol	Non-National	Yes	No.
96–45–7	Ethylene thiourea	Non-National	Yes	No.
50–00–0	Formaldehyde	Non-National	Yes	Yes.
NA	*Legionella pneumophila*	Non-National	Yes	In Development.
10265–92–6	Methamidophos	Non-National	Yes	Yes.
NA	*Mycobacterium avium*	Non-National	Yes	In Development.
86–30–6	N-Nitrosodiphenylamine (NDPhA)	Non-National	Yes [a]	No.
301–12–2	Oxydemeton-methyl	Non-National	Yes	Yes.
42874–03–3	Oxyfluorfen	Non-National [c]	Yes	Yes.
52645–53–1	Permethrin	Non-National [c]	Yes	Yes.
41198–08–7	Profenofos	Non-National [c]	Yes	Yes.
107534–96–3	Tebuconazole	Non-National [c]	Yes	Yes.
78–48–8	Tribufos	Non-National [c]	Yes	Yes.
50471–44–8	Vinclozolin	Non-National	Yes	Yes.
137–30–4	Ziram	Non-National	Yes	No.
(C) Contaminants With Nationally Representative Finished Water Occurrence Data Lacking Peer Reviewed Health Assessments				
75–34–3	1,1-Dichloroethane	National	No [a]	Yes.
106–99–0	1,3-Butadiene	National	No	Yes (MRL > HRL).
74–87–3	Chloromethane (Methyl chloride)	National	No	Yes.
474–86–2	Equilin	National	No	Yes.
50–28–2	Estradiol (17-beta estradiol)	National	No	Yes.
50–27–1	Estriol	National	No	Yes.
53–16–7	Estrone	National	No	Yes.
57–63–6	Ethinyl Estradiol (17-alpha ethynyl estradiol).	National	No	Yes.
7440–56–4	Germanium	National [c]	No	Yes.
74–97–5	Halon 1011 (bromochloromethane)	National	No	Yes.
75–45–6	HCFC–22	National	No	Yes.
1634–04–4	Methyl tert-butyl ether (MTBE)	National	No	Yes.
103–65–1	n-Propylbenzene	National	No [a]	Yes.

EXHIBIT 2—REGULATORY DETERMINATION DATA/INFORMATION NEEDS FOR CCL 4 CONTAMINANTS—Continued

CASRN	Common name	What is the best available occurrence data?	Is a health assessment available?	Is an EPA analytical method available?
135–98–8	sec-Butylbenzene	National	No[a]	Yes.
13494–80–9	Tellurium	National	No	No.
(D) Contaminants With Non-Nationally Representative Finished Water Occurrence Data Lacking Peer Reviewed Health Assessments				
57–91–0	17alpha-estradiol	Non-National	No	In Development.
75–07–0	Acetaldehyde	Non-National	No	Yes.
62–53–3	Aniline	Non-National	No[a]	No.
25013–16–5	Butylated hydroxyanisole	Non-National[c]	No	Yes.
517–09–9	Equilenin	Non-National	No	In Development.
114–07–8	Erythromycin	Non-National	No	In Development.
110–54–3	Hexane	Non-National	No[a]	No.
72–33–3	Mestranol	Non-National	No	No.
NA	*Naegleria fowleri*	Non-National	No	No.
25154–52–3	Nonylphenol	Non-National	No	No.
68–22–4	Norethindrone (19-Norethisterone)	Non-National	No	In Development.
(E) Contaminants With Peer Reviewed Health Assessments Lacking Finished Water Occurrence Data				
107–18–6	2-Propen-1-ol	Release[c]	Yes[a]	Yes.
110429–62–4	Clethodim	Release	Yes	No.
55290–64–7	Dimethipin	Release[c]	Yes	Yes.
NA	*Escherichia coli (O157)*	No Data	Yes	No.
NA	*Helicobacter pylori*[e]	No Data	Yes	No.
NA	Hepatitis A virus	No Data	Yes	No.
302–01–2	Hydrazine	Release	Yes[a]	No.
67–56–1	Methanol	Release	Yes	No.
55–63–0	Nitroglycerin	Release	Yes[a]	No.
872–50–4	N-Methyl-2-pyrrolidone	Release	Yes	No.
75–56–9	Oxirane, methyl-	Release	Yes	No.
91–22–5	Quinoline	Release[c]	Yes	Yes (MRL > HRL).
112410–23–8	Tebufenozide	Release	Yes	Yes.
59669–26–0	Thiodicarb	Release	Yes	No.
23564–05–8	Thiophanate-methyl	Release	Yes	No.
76–87–9	Triphenyltin hydroxide (TPTH)	Release	Yes	No.
(F) Contaminants Lacking Finished Water Occurrence Data and Current, Peer Reviewed Health Assessments				
109–86–4	2-Methoxyethanol	Release[c]	No[a]	Yes.
101–77–9	4,4′-Methylenedianiline	Release	No	No.
60–35–5	Acetamide	Release	No	No.
NA	*Campylobacter jejuni*	No Data	No	No.
80–15–9	Cumene hydroperoxide	Release	No	No.
75–21–8	Ethylene oxide	Release	No	No.
95–53–4	o-Toluidine	Release[c]	No[a]	Yes.
NA	*Salmonella enteric*	No Data	No	No.
NA	*Shigella sonnei*	No Data	No	No.
26471–62–5	Toluene diisocyanate	Release	No	No.
121–44–8	Triethylamine	Release	No	No.
51–79–6	Urethane	Release	No	No.

Key to Exhibit:
National = Finished drinking water occurrence data that are nationally representative are available.
Non-National = Finished drinking water occurrence data that are not nationally representative are available.
In Development = Revised health assessment or analytical method is currently being developed.
[a] Provisional Peer Reviewed Toxicity Value (PPRTV) in the form of chronic, oral RfD subchronic, oral RfD, cancer weight evidence, or cancer slope factor available.
[b] The parent health assessment was used for the metabolite. There is no independent health assessment available for the metabolite.
[c] Proposed for UCMR 4.
[d] Evaluations of occurrence data availability for cyanotoxins in this table are based on anatoxin-a, cylindrospermopsin, and microcystin-LR. Cyanotoxins proposed for UCMR 4 monitoring include total microcystins (MC), MC-LA, MC-LF, MC-LR, MC-LY, MC-RR, MC-YR, nodularin, anatoxin-a and cylindrospermopsin.

VI. Next Steps and Future Contaminant Candidate Lists

The CCL process is critical to shaping the future direction of the drinking water program. The agency will continue to gather information and evaluate contaminants on the CCL 4 to make regulatory determinations for at least five contaminants. The agency will also continue to refine the CCL process and gather more data to identify contaminants for CCL 5. EPA will continue to work to prioritize contaminants on the CCL 4, both for RD and for additional research and data collection.

References

Bartram, J., Cotruvo, J., Exner, M., Fricker, C. and Glasmacher, A. 2003. Heterotrophic plate count measurement in drinking water safety. *WHO Emerging issues in*

Water and Infectious Disease Series, IWA Publishing, London, pp. 119–122.
Bontje, D., Hermens, J., Vermeire, T. and Damstra, T. 2005. Integrated risk assessment: Nonylphenol case study. *Report prepared for the WHO/UNEP/ILO International programme on chemical safety.*
Bouchard, M.F., Sauvé, S., Barbeau, B., Legrand, M., Brodeur, M.È., Bouffard, T., Limoges, E., Bellinger, D.C. and Mergler, D. 2011. Intellectual impairment in school-age children exposed to manganese from drinking water. *Environmental health perspectives, 119*(1), p. 138.
Calderon, R.L. 1988. Bacteria colonizing point-of-entry granular activated carbon filters and their relationship to human health. EPA CR–813978–01–0, U.S. Environmental Protection Agency, Washington, DC.
Calderon, R.L. and Mood, E.W. 1991. Bacteria colonizing point-of-use granular activated carbon filters and their relationship to human health. EPA CR 811904–01–0, U.S. Environmental Protection Agency, Washington, DC.
Kern, C.H., Stanwood, G.D. and Smith, D.R. 2010. Preweaning manganese exposure causes hyperactivity, disinhibition, and spatial learning and memory deficits associated with altered dopamine receptor and transporter levels. *Synapse, 64*(5), pp. 363–378.
Kern, C.H. and Smith, D.R. 2011. Preweaning Mn exposure leads to prolonged astrocyte activation and lasting effects on the dopaminergic system in adult male rats. *Synapse, 65*(6), pp. 532–544.
Kolpin, D.W., Furlong, E.T., Meyer, M.T., Thurman, E.M., Zaugg, S.D., Barber, L.B. and Buxton, H.T. 2002. Pharmaceuticals, hormones, and other organic wastewater contaminants in U.S. streams, 1999–2000: A national reconnaissance. *Environmental science & technology, 36*(6), pp. 1202–1211.
Oulhote, Youssef, Donna Mergler, Benoit Barbeau, David C. Bellinger, Thérèse Bouffard, Marie-Ève Brodeur, Dave Saint-Amour, Melissa Legrand, Sébastien Sauvé, and Maryse F. Bouchard. 2014. ''Neurobehavioral function in school-age children exposed to manganese in drinking water.'' *Environmental Health Perspectives* 122(12): 1343–1350.
Payment, P., Siemiatycki, J., Richardson, L., Renaud, G., Franco, E. and Prevost, M. 1997. A prospective epidemiological study of gastrointestinal health effects due to the consumption of drinking water. *International Journal of Environmental Health Research, 7*(1), pp. 5–31.
USEPA. 1995a. EPA's Policy on Evaluating Risk to Children. Available online at: *https://www.epa.gov/children/epas-policy-evaluating-risk-children.*
USEPA. 1995b. Manganese; CASRN 7439–96–5. Integrated Risk Information System (IRIS), Chemical Assessment Summary. Available online at: *https://cfpub.epa.gov/ncea/iris/iris_documents/documents/subst/0373_summary.pdf.* Accessed July 27, 2016.
USEPA. 2003. Announcement of Regulatory Determinations for Priority Contaminants on the Drinking Water Contaminant Candidate List; Notice. **Federal Register**. Vol. 68, No. 138, p. 42898. July 18, 2003.
USEPA. 2008a. Drinking Water Contaminant Candidate List 3—Draft. **Federal Register**. Vol. 73, No. 35. p. 9628. February 21, 2008.
USEPA. 2008b. Drinking Water: Regulatory Determinations Regarding Contaminants on the Second Drinking Water Contaminant Candidate List—Final Determinations. **Federal Register**. Vol. 73, No. 147, p. 44251. July 30, 2008.
USEPA. 2008c. Molinate; Product Cancellation Order and Amendment to Terminate Uses. **Federal Register**. Vol. 73 No. 147. p. 44261. July 30, 2008.
USEPA. 2009a. Final Contaminant Candidate List 3 Chemicals: Identifying the Universe. EPA 815–R09–006. August 2009.
USEPA. 2009b. Final Contaminant Candidate List 3 Microbes: Identifying the Universe. EPA 815–R09–004. August 2009.
USEPA. 2009c. Final Contaminant Candidate List 3 Chemicals: Screening to a PCCL. EPA 815–R–09–007. August 2009.
USEPA. 2009d. Final Contaminant Candidate List 3 Microbes: Screening to the PCCL. EPA 815–R–09–005. August 2009.
USEPA. 2009e. Final Contaminant Candidate List 3 Chemicals: Classification of the PCCL to CCL. EPA 815–R–09–008. August 2009.
USEPA. 2009f. Final Contaminant Candidate List 3 Microbes: Classification of the PCCL to CCL. EPA 815–R–09–009. August 2009.
USEPA. 2009g. Disulfoton and Methamidophos; Product Cancellation Order. **Federal Register**. Volume 74. No. 183. p. 48551. September 23, 2009.
USEPA. 2012. Request for Nominations of Drinking Water Contaminants for the Fourth Contaminant Candidate List. **Federal Register**. Vol. 77, No. 89. p. 27057. May 8, 2012.
USEPA. 2013. National Primary Drinking Water Regulations: Revisions to the Total Coliform Rule. **Federal Register**. Volume 78. No. 30. p. 10306. February 13, 2013.
USEPA. 2014a. Announcement of Preliminary Regulatory Determination for Contaminants on the Third Drinking Water Contaminant Candidate List. **Federal Register**. Vol. 79, No. 202, p. 62715. October 20, 2014.
USEPA. 2014b. Protocol for the Regulatory Determinations 3. Including Appendices A–F. EPA– 815–R–14–005. April 2014.
USEPA. 2014c. Fenamiphos; Amendment to Existing Stocks Provision of Use Deletion and Product Cancellation Order. **Federal Register**. Vol. 79, No. 190, p. 59261. October 1, 2014.
USEPA. 2014d. Certain Nonylphenols and Nonylphenol Ethoxylates; Significant New Use Rule **Federal Register**. Vol. 79, No. 190, p. 59186. October 1, 2014.
USEPA. 2015a. Drinking Water Contaminant Candidate List 4—Draft Notice. **Federal Register**. Volume 80, No. 23 p. 6076. February 4, 2015.
USEPA. 2015b. UCMR 4 Candidate Contaminants—Information Compendium. EPA 815–B–15–005. November 2015.
USEPA. 2016a. Announcement of Final Regulatory Determinations for Contaminants on the Third Drinking Water Contaminant Candidate List. **Federal Register**. Vol. 81, No. 1, p. 13. January 4, 2016.
USEPA. 2016b. Summary of Nominations for the Fourth Contaminant Candidate List (CCL 4). EPA 815–R–16–006. November 2016.
USEPA. 2016c. Data Sources for the Fourth Contaminant Candidate List (CCL 4). EPA 815–R–16–007. November 2016.
USEPA. 2016d. Screening Document for the Fourth Preliminary Contaminant Candidate List (PCCL 4). EPA 815–R–16–008. November 2016.
USEPA. 2016e. Contaminant Information Sheets (CISs) for the Final Fourth Contaminant Candidate List (CCL 4). EPA 815–R–16–003. November 2016.
USEPA. 2016f. Comment Response Document for the Fourth Drinking Water Contaminant Candidate List (Categorized Public Comments). EPA 815–R–16–004. November 2016.
USEPA. 2016g. Review of the EPA's Draft Fourth Drinking Water Contaminant Candidate List (CCL 4). EPA–SAB–16–002. January 11, 2016.
USEPA. 2016h. Response to the Science Advisory Board's Recommendations on the Draft Fourth Contaminant Candidate List (CCL 4). EPA 815–R–16–005. November 2016.
USEPA. 2016i. Lifetime Health Advisories and Health Effects Support Documents for Perfluorooctanoic Acid and Perfluorooctane Sulfonate. **Federal Register**. Vol. 81, No. 101, p. 33250. May 25, 2016.
USEPA. 2016j. Technologies for *Legionella* Control in Premise Plumbing Systems: Scientific Literature Review. EPA 810–R–16–001. September 2016.
USGS. 2012. National Water-Quality Assessment (NAWQA) Program, Pesticide National Synthesis Project. Available on the Internet at: *https://water.usgs.gov/nawqa/pnsp/usage/maps/show_map.php?year=2012&map=FENAMIPHOS&hilo=L.*

Dated: November 9, 2016.

Joel Beauvais,

Deputy Assistant Administrator, Office of Water.

[FR Doc. 2016–27667 Filed 11–16–16; 8:45 am]

BILLING CODE 6560–50–P