

National Outbreak Reporting System (NORS)
Waterborne Disease Reporting – Water List Values

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1. INTRODUCTION

This document provides a list of values for water-related fields in the National Outbreak Reporting System (NORS). This document has been organized to correspond to the sections in NORS for waterborne outbreak reporting and can be used in conjunction with the NORS Waterborne Guidance document, the NORS Water Training Documents, and the NORS form 52.12 on the [NORS website](#). For some fields, additional values can be added by the user. Otherwise, please contact NORSWater@cdc.gov to add a value to list.

2. WATER SECTION (WATER)

List values for fields in the Water Section and Epidemiologic Data tab are displayed below.

2.1. Associated Events (Associated Events)

Note: Additional events may be added to this list.

- Banquet
- Bar Mitzvah/Bat Mitzvah
- Class/Training
- Concert
- Convention
- Demonstration/Protest/Rally
- Fair/Festival
- Field trip
- Funeral
- Group Swim
- Mass evacuation/Disaster
- Meeting
- Other
- Party
- Picnic
- Religious ceremony/service
- Reunion
- Rodeo
- Sporting Event/Game/Tournament
- Tour
- Wedding
- Workshop
- Unknown

3. ETIOLOGY & LABORATORY SECTION (ETIOLOGY & LAB)

List values for fields in the Etiology & Lab Section and Water Samples Tab are displayed below.

3.1. Sample Source (Water Samples section)

- Bulk Water (purchased)
- Canal
- Commercially-Bottled Water
- Cooling Tower
- Dialysis Machine
- Distribution System - Water Utility
- Drain
- Drainage Ditch
- Drink Mix/Soda Machine
- Drinking Water Dispenser/Container
- Evaporative Condenser/Air Conditioner
- Faucet/Tap
- Filter
- Fountain - Interactive (A fountain intended for or accessible to recreational use. This includes spray pads and splash pads.)
- Fountain - Ornamental
- Fountain - Unknown Intent
- Hot Spring
- Lake/Reservoir/Impoundment
- Manicure Bath
- Mist/Steam - Device (e.g., steam cleaner)
- Mist/Steam - Mister
- Ocean
- Other
- Pedicure Bath
- Plumbing - Home/Building
- Pond
- Pool - Kiddie/Wading, Private
- Pool - Kiddie/Wading, Public
- Pool - Swimming Pool
- Pool - Water Slide
- Pool - Waterpark
- Pool - Wave Pool
- Puddle
- River/stream
- Sediment
- Septic System
- Shower
- Sink
- Spa/Whirlpool/Hot Tub
- Spray Pad/Splash Pad/Wet Deck
- Spring

- Storage Tank
- Swamp
- Unknown
- Well

3.2. Test Method (Microbiology or Chemical/Toxin Analysis section)

Note: Additional values may be added to this list.

- ASTM D1067-Alkalinity or acidity in water
- ASTM D1179-Fluoride (ion selective electrode)
- ASTM D1292-Odor in water
- ASTM D1293-pH (routine/continuous measurement)
- ASTM D1688-Copper (atomic absorption, direct)
- ASTM D2036-Cyanides
- ASTM D3223-Mercury, total (analytical procedure)
- ASTM D3697-Antimony (AAS)
- ASTM D3859-Selenium (gaseous hydride AAS)
- ASTM D3859-Selenium (graphite furnace AAS)
- ASTM D4327-Anions (ion chromatography)
- ASTM D511-Calcium, magnesium (AAS)
- ASTM D516-Sulfate (turbidimetry)
- ASTM D859-Silica (colorimetric)
- EPA 100.1-Asbestos (TEM)
- EPA 100.2-Asbestos (TEM)
- EPA 110.1-Color (spectrophotometry)
- EPA 110.2-Color (spectrophotometry)
- EPA 110.3-Color (spectrophotometry)
- EPA 150.1-pH (electrometric method)
- EPA 150.2-pH
- EPA 1613-Dioxins, furans (HRGC/HRMS)
- EPA 1615 Enterovirus, Norovirus (Culture and RT-qPCR)
- EPA 1622 Geno-Test method 1622 + genotyping
- EPA 1623 Geno-Test method 1623+genotyping
- EPA 200.7-Metals (ICP-AES)
- EPA 200.8-Metals (ICP/MS)
- EPA 200.9-Trace elements (GFAA)
- EPA 245.1-Mercury (CVAA)
- EPA 245.2-Mercury (CVAA, automated)
- EPA 300.0-Inorganic anions (ion chromatography)
- EPA 300.1-Anions (IC)
- EPA 335.4-Cyanide, total (colorimetry)
- EPA 350.1-Ammonia (colorimetry, automated)
- EPA 353.2-Nitrate-Nitrite Nitrogen (colorimetry)
- EPA 375.2-Sulfate (colorimetry)
- EPA 413.1-Oil, Grease (extraction and gravimetry)
- EPA 502.2-VOCs (GC/PID/ELCD)

- EPA 504.1-EDB, DCBP, 123TCP (GCECD)
- EPA 505-Pesticides, PCBs (GC-ECD)
- EPA 506-Phthalate, adipate esters (GCPID)
- EPA 507-Pesticides (GCNPD)
- EPA 508A-PCBs (GCECD)
- EPA 508-Chlor. pesticides (GCECD)
- EPA 515.1-Chlor. acids (GC/ECD)
- EPA 515.2-Chlor. acids (GCECD)
- EPA 515.3-Chlor. acids (GC/ECD)
- EPA 524.3-VOCs (GCMS)
- EPA 525.2-Organics (GCMS)
- EPA 531.1-Carbamates (HPLC, post-column deriv.)
- EPA 547-Glyphosphate (HPLC, post-column deriv.)
- EPA 548.1-Endothall by FID (GCMS)
- EPA 548.1-Endothall by MS (GCMS)
- EPA 549.2-Diquat, Paraquat (HPLC/UV)
- EPA 550.1-PAHs (HPLC/UV/FL)
- EPA 550-PAHs (HPLC/UV/FL)
- EPA 551.1-Chlor. compounds (GC-ECD)
- EPA 552.1-Haloacetic acid, dalapon (GCECD)
- EPA 552.2-Haloacetic acid, dalapon (GCECD)
- EPA 555-Chlor. acids (HPLC/UV)
- Other
- SM 2120-Color (visual comparison)
- SM 2150-Odor (threshold odor test)
- SM 2320-Alkalinity (titration)
- SM 2510-Conductivity (lab method)
- SM 2540-Solids (total dissolved solids, 180° C)
- SM 2550-Temperature (laboratory and field)
- SM 3111-Metals (FLAA)
- SM 3112-Metals (cold-vapor AAS)
- SM 3113-Metals (GFAA)
- SM 3114-Arsenic, selenium (hydride generation/AAS)
- SM 3120-Metals (ICP)
- SM 3500-Ca-Calcium (EDTA, titrimetric)
- SM 3500-Mg-Magnesium (calculation)
- SM 4110-Anions (ion chromatography)
- SM 4110-Fluoride (SM 4110 with modifications)
- SM 4500-Cl--Chloride (potentiometric)
- SM 4500-CN-Cyanide (amenable to chlor.)
- SM 4500-CN-Cyanide (ion selective electrode)
- SM 4500-CN-Cyanide in distillate (colorimetric)
- SM 4500-CN-Cyanide, total (after distillation)
- SM 4500-F--Fluoride (complexone)
- SM 4500-F--Fluoride (ion-selective electrode)
- SM 4500-F--Fluoride (prelim. distillation)

- SM 4500-H+B-pH (potentiometry)
- SM 4500-F--Fluoride (SPADNS)
- SM 4500-NO2-Nitrite (colorimetry)
- SM 4500-NO3-Nitrate (after cadmium reduction)
- SM 4500-NO3-Nitrate (automated cadmium reduction)
- SM 4500-NO3-Nitrate (nitrate electrode)
- SM 4500-P-Phosphorus (ascorbic acid)
- SM 4500-SiO2-Silica (heteropoly blue)
- SM 4500-SiO2-Silica (molybdosilicate)
- SM 4500-SO42--Sulfate (turbidimetric)
- SM 5540-Surfactants (anionic surfactants as MBAS)
- SM 6610-Carbamate pesticides (HPLC)
- SM 9222-Coliforms, total (membrane filtration)
- SM 9222-Fecal coliforms (membrane filtration)
- SM 9260-Pathogenic bacteria, Aeromonas
- SM 9260-Pathogenic bacteria, Campylobacter jejuni
- SM 9260-Pathogenic bacteria, E. coli O157:H7
- SM 9260-Pathogenic bacteria, Legionella
- SM 9260-Pathogenic bacteria, Leptospira
- SM 9260-Pathogenic bacteria, Mycobacterium
- SM 9260-Pathogenic bacteria, Shigella
- SM 9260-Pathogenic bacteria, Vibrio cholerae
- USGS I-1250-85-Color (visual comparison)
- ASTM D1125-Electrical conductivity and resistivity (field, routine lab- static samples)
- ASTM D1688-Copper (atomic absorption, graphite furnace)
- ASTM D2972-Arsenic (atomic absorption, graphite furnace)
- ASTM D2972-Arsenic (atomic absorption, hydride generation)
- ASTM D3559-Lead (atomic absorption, graphite furnace)
- ASTM D3645-Beryllium (atomic absorption, graphite furnace)
- ASTM D3867-Nitrite, Nitrate (automated cadmium reduction)
- ASTM D3867-Nitrite, Nitrate (manual cadmium reduction)
- ASTM D511-Calcium, magnesium (complexometric titration)
- ASTM D5317-Chlor. organic acids (GC, electron capture device)
- EPA 1103.1(modified)-E. coli (membrane filtration plating, modified mTEC agar)
- EPA 1600-Enterococci (membrane filtration, mEI agar)
- EPA 1604-Total coliforms, E. coli, drinking water (membrane filtration)
- EPA 1605-Aeromonas, finished water (membrane filtration)
- EPA 1622-Cryptosporidium (filtration/IMS/FA microscopy)
- EPA 1623-Cryptosporidium, Giardia (filtration/IMS/FA microscopy)
- EPA 365.1-Phosphorus, all forms (semi-automated colorimetry)
- EPA 418.1-Petroleum hydrocarbons, total recoverable (extraction, adsorption, I-R)
- EPA 508.1-Chlor. pesticides, herbicides, organohalides (GCECD)
- EPA 600/4-84-013-USEPA Manual of Methods for Virology
- EPA 601-Gas chromatography (electrolytic conductivity detection)
- Hach 10029-E. coli (m-ColiBlue24 broth, membrane filtration)
- SM 4500-SO42--Sulfate (automated methylthymol blue)

- SM 4500-SO42--Sulfate (gravimetric, drying of residue)
- SM 4500-SO42--Sulfate (gravimetric, ignition of residue)
- SM 6651-Glyphosphate herbicide (liquid chrom. post-column fluor.)
- SM 9222-E. coli (membrane filtration, MUG-fluorescent detection)
- SM 9260-Pathogenic bacteria, Salmonella (general qualitative isolation, identification)
- SM 9260-Pathogenic bacteria, Salmonella (immunofluorescence identification)
- SM 9260-Pathogenic bacteria, Salmonella (quantitative procedures)
- SM 9260-Pathogenic bacteria, Yersinia enterocolitica
- USGS-NWQL I-1030-85-Alkalinity (electrometric titration)
- USGS-NWQL I-1700-85-Silica, dissolved (colorimetric, molybdate blue)
- USGS-NWQL I-2601-90-Phosphorus, orthophosphate (colorimetry)
- USGS-NWQL I-2700-85- Silica (colorimetric, dissolved)
- USGS-NWQL I-3300-85-Cyanide, total (colorimetric, pyridine-pyrazolone)
- USGS-NWQL I-3720-85-Silver (AAS, chelation-extraction)
- SM 4500-ClO2-Chlorine dioxide (amperometric, method I)
- SM 4500-P-Phosphorus (automated ascorbic acid reduction)
- SM 4500-SiO2-Silica (automated method for molybdate-reactive silica)
- Unknown

4. RECREATIONAL TREATED WATER SECTION (REC. TREATED)

List values for fields in the Recreational Treated Water Section in the Water Venue Tab are displayed below.

4.1. Water Venue (Water Venue section)

- Fountain – Interactive (A fountain intended for or accessible to recreational use. This includes spray pads and splash pads.)
- Fountain – Interactive (Hot Spring)
- Other
- Pool – Kiddie/Wading, Private (e.g., backyard)
- Pool – Kiddie/Wading, Public
- Pool – Kiddie/Wading, Public (Hot Spring)
- Pool – Swimming Pool
- Pool – Swimming Pool (Hot Spring)
- Pool – Water Slide
- Pool – Water Slide (Hot Spring)
- Pool – Waterpark
- Pool – Waterpark (Hot Spring)
- Pool – Wave Pool
- Pool – Wave Pool (Hot Spring)
- Spa/Whirlpool/Hot Tub
- Spa/Whirlpool/Hot Tub (Hot Spring)
- Temporary Water Slide
- Unknown

4.2. Water Subtype (Water Venue section)

- Indoor
- Outdoor
- Unknown

4.3. Setting of Exposure (Water Venue section)

- Airport
- Apartment/Condo
- Assisted Living/Rehab
- Beach - Nonspecific
- Beach - Private
- Beach - Public
- Camp/Cabin Setting
- Child Care/Daycare Center
- Church/Place of Worship
- Club (Requires Membership)
- Community/Municipality
- Factory/Industrial Facility
- Farm/Agricultural Setting
- Festival/Fair

- Hall/Meeting Facility
- Hospital/Health Care
- Hotel/Motel/Lodge/Inn
- Long term care facility
- Manicure Bath
- Military Facility
- National Forest
- Native American Reservation
- Office/Indoor workplace
- Other
- Park - Amusement
- Park - Community/Municipal
- Park - Forestry Service
- Park - National Park
- Park - State Park
- Park - Unknown
- Park - Waterpark
- Pedicure Bath
- Prison/Jail (Juvenile/Adult)
- Private Residence
- Public Outdoor Area
- Recreational facility
- Resort
- Restaurant/Cafeteria
- School/College/University
- Ship/Boat - Cruise
- Ship/Boat - Unknown
- Store
- Subdivision/Neighborhood
- Trailer Park
- Unknown
- Zoo

4.4. USUAL Water Treatment Provided at Venue (Water Treatment section)

Note: This list is available in the Water Treatment Section and the Fill Water Treatment Section.

- Coagulation
- Disinfection
- Filtration at Pool
- Flocculation
- Sedimentation (settling)
- No Treatment
- Unknown

4.5. Water Treatment Subtype (Water Treatment section)

Note: The “Water Treatment Subtype” is only available if the “USUAL Water Treatment Provided at Venue” is “Disinfection”.

- Biguanide
- Bromine
- Chloramine
- Chlorine
- Chlorine Dioxide
- Copper-Silver Ionization
- Hydrogen Peroxide
- Ozone
- Povidine
- Ultraviolet (U.V.)
- Unknown

Note: The “Water Treatment Subtype” is only available if the “USUAL Water Treatment Provided at Venue” is “Filtration at Pool”.

- Bag Filter
- Cartridge Filter
- Diatmoaceous Earth
- Sand Filter
- Unknown

4.6. Chlorination Subtype (Water Treatment section)

Note: Chlorination Subtype is only available if the “Water Treatment Subtype” is “Chlorine”

- Calcium hypochlorite
- Cyanurates
- Gaseous
- Onsite chlorine generator (e.g., sodium chloride, MIOX)
- Sodium dichlor
- Sodium hypochlorite
- Unknown

4.7. Fill Water (Fill Water Treatment section)

- Mineral/Hot Spring
- Public Water Supply
- Sea Water
- Untreated Ground Water
- Untreated Surface Water
- Unknown

4.8. USUAL Water Treatment (Fill Water Treatment section)

Note: USUAL Water Treatment is only available if the “Fill Water” is “Public Water Supply”.

- Coagulation
- Disinfection
- Distillation

- Filtration at Treatment Plant (do not include home filters)
- Flocculation
- No Treatment
- Other Chemicals
- Settling/Sedimentation
- Softening
- Unknown

4.9. Water Treatment Subtype (Fill Water Treatment section)

Note: Water Treatment Subtype is only available if the “USUAL Water Treatment” is “Disinfection”.

- Boiling/Heating
- Chloramine
- Chlorine
- Chlorine Dioxide
- Copper/Silver Ionization
- Cyanurates
- Ozone
- Ultraviolet (U.V.)
- Unknown

Note: Water Treatment Subtype is only available if the “USUAL Water Treatment” is “Filtration at Treatment Plant”.

- Activated Carbon
- Bag Filter
- Cartridge Filter
- Diatomaceous Earth
- Rapid Sand
- Reverse Osmosis
- Slow Sand
- Unknown

4.10. Contributing Factors

Factors Contributing to Recreational Water Contamination and/or Increased Exposure in Treated Venues

Note: Additional Contributing Factors can be added to this list.

- 1) People
 - Fecal/vomitus accident
 - Heavy use by child care center groups
 - Intentional contamination (explain in remarks)
 - Operator error
 - Out of compliance with bather load/density requirements
 - Patrons continued to swim when ill or within 2 weeks of being ill
 - Primary use of water is by diaper/toddler aged children (e.g., kiddie pool)

2) Facility Design

- Combined pool filtration systems led to cross contamination
- Cross connection with wastewater or non-potable water
- Hygiene facilities inadequate or distant (e.g., no toilets, no diaper changing facilities)
- No supplemental disinfection installed that would have inactivated pathogen (e.g., Cryptosporidium)
- Spray feature water demand higher than treatment system capacity so water returns to features and bypasses filtration/treatment system
- Water temperature $\geq 30^{\circ}\text{C}$ ($\geq 86^{\circ}\text{F}$)

3) Maintenance: Equipment and Operation

- Chemical handling error (e.g., chemical hookup, improper mixing or application)
- Cyanurate level excessive
- Disinfectant control system malfunctioning, inadequate, or lacking (e.g., hand feed)
- Extensive slime/biofilm formation
- Filtration system malfunctioning or inadequate (e.g., low flow rate)
- Incorrect settings on disinfectant control system
- Incorrect settings on pH control system
- Insufficient system checks so breakdown detection delayed
- Lack of draining/cleaning
- Low or zero water flow combined with continuous feed of chemicals resulted in excess chemicals in water
- Maintenance chemicals not flushed from system before opening to swimmers
- No preventive maintenance programs to reduce breakdowns
- pH control system malfunctioning, inadequate, or lacking (e.g., hand feed)
- Recent construction
- Remote monitoring system in use
- Stagnant water in spa piping was aerosolized
- Supplemental disinfection system malfunctioning (e.g., ultraviolet light, ozone)
- Ventilation insufficient for indoor aquatic facilities

4) Policy and Management

- Employee illness policies absent or not enforced
- Facility falls outside aquatic health code
- Inadequate water quality monitoring (e.g., inadequate test kit, inadequate testing frequency)
- Missing or poor chemical handling policies, practices, and training
- No aquatics operators on payroll who have received state/local certified training
- No operator on duty at the time of incident
- No shock/hyperchlorination policy
- Unclear communication chain for reporting problems
- Untrained/inadequately trained staff on duty

- 5) Unknown or insufficient information to assign deficiencies
- Other
 - Unknown

5. RECREATIONAL UNTREATED WATER SECTION (REC. UNTREATED)

List values for fields in the Recreational Untreated Water Section in the Water Venue tab are displayed below.

5.1. Water Venue (Water Venue Description section)

- Canal
- Hot Spring
- Lake/Reservoir/Impoundment
- Ocean
- Other
- Pond
- Puddle
- River/Stream
- Spring
- Swamp
- Unknown

5.2. Water Subtype (Water Venue Description section)

Note: The “Water Subtype” is only available if the “Water Venue” is a “Hot Spring”.

- Indoor
- Outdoor
- Unknown

5.3. Setting of Exposure (Water Venue Description section)

- Airport
- Apartment/Condo
- Assisted Living/Rehab
- Beach - Nonspecific
- Beach - Private
- Beach - Public
- Bus Station
- Camp/Cabin Setting
- Child Care/Daycare Center
- Church/Place of Worship
- Club (Requires Membership)
- Community/Municipality
- Factory/Industrial Facility
- Farm/Agricultural Setting
- Festival/Fair
- Hall/Meeting Facility

- Hospital/Health Care
- Hotel/Motel/Lodge/Inn
- Indoor Place of Work/Office
- Military Facility
- Mobile Home Park
- National Forest
- Native American Reservation
- Other
- Outdoor Place of Work
- Park - Amusement
- Park - Community/Municipal
- Park - Forestry Service
- Park - National Park
- Park - State Park
- Park - Unknown
- Park - Waterpark
- Prison/Jail (Juvenile/Adult)
- Private Residence
- Public Outdoor Area
- Resort
- Restaurant/Cafeteria
- School/College/University
- Ship/Boat - Cruise
- Ship/Boat - Unknown
- Store/Shop
- Street Vendor
- Subdivision/Neighborhood
- Train Station
- Unknown
- Zoo

5.4. Contributing Factors

Factors Contributing to Recreational Water Contamination and/or Increased Exposure in Untreated Venues

Note: Additional Contributing Factors can be added to this list.

- 1) People
 - Fecal/vomitus accident
 - Heavy use by child care center groups
 - Intentional contamination (explain in remarks)
 - Patrons continued to swim when ill or within 2 weeks of being ill
 - Primary intended use of water is by diaper/toddler aged children (e.g., kiddie pool)
 - Exceeded maximum bather load
 - Staff error

2) Swim Area Design

- Hygiene facilities inadequate or distant (e.g., no toilets, no diaper changing facilities)
- Malfunctioning or inadequate onsite wastewater treatment system
- Poor siting/design of onsite wastewater treatment system
- Stagnant or poorly circulating water in swim area

3) Water Quality

- Algal bloom
- Combined sewer overflow (CSO) impact
- Contamination from agricultural chemical application (e.g., fertilizer, pesticides)
- Contamination from chemical pollution not related to agricultural application
- Domestic animal contamination (e.g., livestock, pets)
- Dumping of ballast water
- Heavy rainfall and runoff
- Inappropriate dumping of sewage into water body (e.g., boat, RV)
- Nearby biosolid/land application site (e.g., human or animal waste application)
- Sanitary sewer overflow (SSO) impact
- Seasonal variation in water quality (e.g., lake/reservoir turnover events)
- Sewer line break
- Tidal wash (i.e., tide exchange or influence by inland water)
- Wastewater treatment plant malfunction
- Water temperature $\geq 30^{\circ}\text{C}$ ($\geq 86^{\circ}\text{F}$)
- Wildlife contamination - Birds
- Wildlife contamination - Fish kill
- Wildlife contamination - Mammals
- Wastewater treatment plant effluent flows past swim area

4) Policy and Management

- Employee illness policies absent or not enforced
- Unclear communication chain for reporting problems
- Untrained/inadequately trained staff on duty
- No or inadequate monitoring of water quality
- No managers have completed state/local required training

5) Unknown or insufficient information to assign deficiencies

- Other
- Unknown

6. DRINKING WATER SECTION (DRINKING)

List values for fields in the Drinking section in the Water System tab are displayed below.

6.1. Water System (Water System Description section)

- Bulk Water Purchase
- Commercially-Bottled Water
- Community Water System
- Individual/Private Water System
- Nontransient Noncommunity Water System
- Other
- Transient Noncommunity Water System
- Unknown

6.2. Water Source (Water System Description section)

- Ground Water
- Ground Water & Surface Water
- Ground Water Under Influence of Surface Water
- Other
- Surface Water
- Unknown

6.3. Water Source Description (Water System Description section)

Note: This list is only available if the “Water Source” is “Ground Water” or “Ground Water Under Influence of Surface Water”.

- Other
- Spring
- Well (Bored)
- Well (Drilled)
- Well (Dug)
- Unknown

Note: This list is only available if the “Water Source” is “Ground Water & Surface Water”.

- Lake/Reservoir/Impoundment & Well
- Other
- River/Stream & Well
- Unknown

Note: This list is only available if the “Water Source” is “Surface Water”.

- Lake/Reservoir/Impoundment
- Ocean
- Other
- Pond
- Puddle/Canal/Swamp
- Rain Water
- River/Stream
- Unknown

6.4. Setting of Exposure (Water System Description section)

- Airport
- Apartment/Condo
- Assisted Living/Rehab
- Beach - Nonspecific
- Beach - Private
- Beach - Public
- Bus Station
- Camp/Cabin Setting
- Child Care/Daycare Center
- Church/Place of Worship
- Club (Requires Membership)
- Community/Municipality
- Factory/Industrial Facility
- Farm/Agricultural Setting
- Festival/Fair
- Hall/Meeting Facility
- Hospital/Health Care
- Hotel/Motel/Lodge/Inn
- Indoor workplace/Office
- Long Term Care Facility
- Military Facility
- Mobile Home Park
- National Forest
- Native American Reservation
- Other
- Outdoor Place of Work
- Park - Amusement
- Park - Community/Municipal
- Park - Forestry Service
- Park - National Park
- Park - State Park
- Park - Unknown
- Park - Waterpark
- Prison/Jail (Juvenile/Adult)
- Private Residence
- Public Outdoor Area
- Resort
- Restaurant/Cafeteria
- School/College/University
- Ship/Boat - Cruise
- Ship/Boat - Unknown

- Store/Shop
- Street Vendor
- Subdivision/Neighborhood
- Train Station
- Well - unknown
- Unknown
- Zoo

6.5. USUAL Water Treatment Provided (Water System Description section)

- Aeration
- Coagulation
- Disinfection
- Distillation
- Filtration – Home/Point of Use
- Filtration – Treatment Plant
- Flocculation
- No Treatment
- Other
- Other Chemical
- Settling/Sedimentation
- Softening
- Unknown

6.6. Water Treatment Subtype (Water System Description section)

Note: This list for “Water Treatment Subtype” is available when the “USUAL Water Treatment” is “Disinfection”.

- Boiling/Heating
- Chloramine
- Chlorine
- Chlorine Dioxide
- Copper-Silver Ionization
- Cyanurates
- Other
- Ozone
- U.V.
- Unknown

Note: This list for “Water Treatment Subtype” is available when the “USUAL Water Treatment” is “Filtration – Home/Point of Use”.

- <= 1 micron pore size
- Activated Carbon
- Reverse Osmosis
- Unknown

Note: This list for “Water Treatment Subtype” is available when the “USUAL Water Treatment” is “Filtration –Treatment Plant”.

- Activated Carbon
- Bag Filter
- Cartridge Filter
- Diatomaceous Earth
- Membrane Microfiltration
- Other
- Rapid Sand
- Reverse Osmosis
- Slow Sand
- Ultrafiltration
- Unknown

6.7. Contributing Factors

Note: Additional Contributing Factors can be added to these lists.

1) Factors contributing to Drinking Water Contamination – Source Water Factors

- Algal bloom
- Combined sewer overflow (CSO)
- Contaminated recharge water
- Contamination by a chemical that the current treatment methods were not designed to remove
- Contamination from agricultural chemical application (e.g., fertilizer, pesticides)
- Contamination from chemical pollution not related to agricultural application
- Contamination through limestone or fissured rock (e.g., karst)
- Domestic animal contamination (e.g., livestock, concentrated feeding operations, pets)
- Flooding/heavy rains
- Ground water under direct influence of surface water (e.g., shallow well)
- Improper construction or location of a well or spring
- Intentional contamination (explain in remarks)
- Low water table (e.g., drought, over-pumping)
- Malfunctioning onsite wastewater treatment system
- Mixing of raw water from different sources
- Nearby biosolid/land application site (e.g., human or animal waste application)
- Other
- Poor siting/design of onsite wastewater treatment system
- Sanitary sewer overflow (SSO)
- Seasonal variation in water quality (e.g., lake/reservoir turnover events, resort community with seasonal loading)
- Sewage treatment plant malfunction
- Sewer line break
- Unknown
- Use of an alternate source of water by a water utility
- Water system intake failure (e.g., cracked well casing, cracked intake pipe)
- Wildlife contamination - Birds
- Wildlife contamination - Fish kill

- Wildlife contamination - Mammals
- 2) Factors contributing to Drinking Water Contamination – Treatment Factors
- Change in treatment process
 - Chronically inadequate disinfection
 - Construction or repair of pipes/components without evidence of contamination
 - Contamination during construction or repair of pipes/components
 - Corrosion in or leaching from pipes or storage tanks
 - Deficiencies in other treatment processes
 - Inadequate filtration
 - No disinfection
 - No filtration
 - Operator error
 - Other
 - Pipe/component failure or break (e.g., pipes, tanks, valves)
 - Temporary interruption of disinfection
 - Unknown
- 3) Factors contributing to Drinking Water Contamination – Distribution and Storage Factors
- Aging water distribution components (e.g., pipes, tanks, valves)
 - Change in water flow direction in the distribution system
 - Construction or repair of mains without evidence of contamination
 - Contamination of mains during construction or repair
 - Contamination of storage facility
 - Corrosion in or leaching from pipes or storage tanks
 - Cross-connection of potable and nonpotable water pipes resulting in backflow
 - Intentional contamination (explain in remarks)
 - Low pressure or change in water pressure in the distribution system
 - Mixing of treated water from different sources
 - Other
 - Pipe/component failure or break (e.g., pipes, tanks, valves)
 - Scheduled flushing of the distribution system
 - Unknown
 - Water temperature $\geq 30^{\circ}\text{C}$ ($\geq 86^{\circ}\text{F}$)
- 4) Factors contributing to Drinking Water Contamination – Factors Not Under the Jurisdiction of a Water Utility
- Aging plumbing components (e.g., pipes, tanks, valves)
 - Change in water flow direction in the plumbing
 - Construction or repair of plumbing without evidence of contamination
 - Contamination at point of use - Commercially-bottled water
 - Contamination at point of use - Container, bottle, or pitcher
 - Contamination at point of use - Hose
 - Contamination at point of use - Tap
 - Contamination at point of use - Unknown
 - Contamination during commercial bottling

- Contamination during shipping, hauling, or storage
- Contamination of plumbing during construction or repair
- Corrosion in or leaching from pipes or storage tanks
- Cross-connection of potable and nonpotable water pipes resulting in backflow
- Deficiency in building/home-specific water treatment after the water meter or property line
- Deficiency or contamination of equipment/devices using or distributing water
- Intentional contamination (explain in remarks)
- Lack of backflow prevention in plumbing
- Legionella species in water system
- Low pressure or change in water pressure in the plumbing
- Other
- Pipe/component failure or break (e.g., pipes, tanks, valves)
- Unknown
- Water temperature $\geq 30^{\circ}\text{C}$ ($\geq 86^{\circ}\text{F}$)

7. OTHER WATER OR WATER OF UNKNOWN INTENT SECTION (OTHER/UNKNOWN)

List values for fields in the Other Water or Water of Unknown Intent Sections the Intent for Use Tab are displayed below.

7.1. Intent for Use (Intent for Use section)

- Agricultural – Animal Use
- Agricultural Irrigation
- Cooling/Air Conditioning
- Industrial/Occupational
- Mister
- Ornamental
- Other
- Trout Stream
- Unknown
- Waste Water
- Wilderness

7.2. Water Type (Water Description section)

- Bulk Water Purchase
- Cooling Tower
- Drainage Ditch
- Evaporative Condenser/Air Conditioner
- Fountain – Ornamental
- Fountain – Unknown Intent
- Hot Spring
- Hydrant
- Irrigation Canal
- Lake/Reservoir/Impoundment
- Mist/Steam – Device (e.g., steam cleaner)
- Mist/Steam – Mister
- Ocean
- Pond
- Puddle/Canal/Swamp
- River/Stream
- Sewage
- Spring
- Treated Wastewater
- Well
- Other
- Unknown

7.3. Setting of Exposure (Water Description section)

- Airport
- Apartment/Condo

- Assisted Living/Rehab
- Beach - Nonspecific
- Beach - Private
- Beach - Public
- Bus Station
- Camp/Cabin Setting
- Child Care/Daycare Center
- Church/Place of Worship
- Club (Requires Membership)
- Community/Municipality
- Factory/Industrial Facility
- Farm/Agricultural Setting
- Festival/Fair
- Hall/Meeting Facility
- Hospital/Health Care
- Hotel/Motel/Lodge/Inn
- Indoor Workplace/Office
- Long term care facility
- Military Facility
- Mobile Home Park
- Nail Salon
- National Forest
- Native American Reservation
- Other
- Outdoor Place of Work
- Park - Amusement
- Park - Community/Municipal
- Park - Forestry Service
- Park - National Park
- Park - State Park
- Park - Unknown
- Park - Waterpark
- Prison/Jail (Juvenile/Adult)
- Private Residence
- Public Outdoor Area
- Resort
- Restaurant/Cafeteria
- School/College/University
- Ship/Boat - Cruise
- Ship/Boat - Unknown
- Store/Shop
- Street Vendor
- Subdivision/Neighborhood
- Train Station
- Unknown
- Zoo

7.4. USUAL Water Treatment Provided (Water Description section)

- Coagulation
- Disinfection
- Distillation
- Filtration – Home/Point of Use
- Filtration – Treatment Plant
- Flocculation
- No Treatment
- Other Chemical
- Settling/Sedimentation
- Softening
- Unknown

7.5. Water Treatment Subtype (Water Description section)

Note: This list for “Water Treatment Subtype” is available when the “USUAL Water Treatment” is “Disinfection”.

- Boiling/Heating
- Bromine
- Chloramine
- Chlorine
- Chlorine Dioxide
- Copper-Silver Ionization
- Cyanurates
- Ozone
- U.V.
- Unknown

Note: This list for “Water Treatment Subtype” is available when the “USUAL Water Treatment” is “Filtration – Home/Point of Use”.

- <= 1 micron pore size
- Activated Carbon
- Reverse Osmosis
- Unknown

Note: This list for “Water Treatment Subtype” is available when the “USUAL Water Treatment” is “Filtration – Treatment Plant”.

- Activated Carbon
- Bag Filter
- Cartridge Filter
- Diatomaceous Earth
- Membrane Microfiltration
- Rapid Sand
- Reverse Osmosis
- Slow Sand
- Ultrafiltration
- Unknown

7.6. Contributing Factors

Factors Contributing to Contamination and/or Increased Exposure to Contaminated Water

Note: Additional Contributing Factors can be added to this list.

- Broken/damaged sewer pipe
- Cooling tower/evaporative condenser - absence of drift eliminators
- Cooling tower/evaporative condenser - construction on the premises of the device within 6 months before the index case
- Cooling tower/evaporative condenser - construction within 100 meters of the premises of the device within 6 months before the index case
- Cooling tower/evaporative condenser - history of recent repairs to the device
- Cooling tower/evaporative condenser - lack of a maintenance program
- Cooling tower/evaporative condenser - lack of a qualified water quality specialist
- Cooling tower/evaporative condenser - presence of damaged drift eliminators
- Cooling tower/evaporative condenser - presence of dirt, organic matter, or other debris in the cold water basin
- Cooling tower/evaporative condenser - presence of scale or corrosion
- Cooling tower/evaporative condenser - shutdown for >3 days without draining to waste
- Cooling tower/evaporative condenser - siting of device in immediate area of kitchen exhaust fans, live plants, truck bays, or other sources of organic matter
- Cooling tower/evaporative condenser - siting of device near building air intakes
- Cooling tower/evaporative condenser - siting of device near windows that can be opened
- Ornamental fountain - inadequate disinfection for recreational use
- Ornamental fountain - inadequate filtration for recreational use
- Ornamental fountain - intended as an ornamental fountain but utilized as an interactive fountain
- Ornamental fountain - lack of a written cleaning and maintenance program
- Ornamental fountain - presence of dirt, organic matter, or other debris in the water basin
- Ornamental fountain - presence of submerged lighting
- Recycling of water
- Unknown
- Water temperature $\geq 30^{\circ}\text{C}$ ($\geq 86^{\circ}\text{F}$)