

**BACTERIAL WATER QUALITY STANDARDS
FOR RECREATIONAL WATERS
(FRESHWATER AND MARINE WATERS)**

STATUS REPORT

June 2003

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U.S. Environmental Protection Agency
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Introduction

In 1997, the U.S. Environmental Protection Agency established the Beaches Environmental Assessment, and Coastal and Health (BEACH) Program. The goal of the BEACH program is to reduce risks to human health caused by exposure to pathogens in recreational waters. Surveys and ongoing scientific studies continue to document the presence of, or the potential for, disease-carrying bacteria, viruses, and other pathogens present in local beach water, primarily from sewage and stormwater runoff. Humans can be exposed to pathogens in recreational waters through ingestion, inhalation, and body contact.

The BEACH Program focuses on the following five areas to improve public health and environmental protection programs for beach goers, and to provide the public with information about the quality of their beach water:

- Strengthening beach standards and testing
- Providing faster laboratory test methods
- Predicting pollution
- Investing in health and methods research
- Informing the public

The Beaches Environmental Assessment and Coastal Health (BEACH) Act of 2000 authorized EPA to award grants for development and implementation of programs to notify the public of the potential exposure to disease-causing microorganisms in coastal recreation waters. Program development and implementation grants to eligible States, Territories, Tribes, and local governments support microbiological testing and monitoring of coastal recreation waters, including the Great Lakes, that are adjacent to beaches or similar points of access used by the public. The BEACH Act also amended Section 303 of the Clean Water Act to require by April 10, 2004 that coastal and Great Lakes states adopt EPA's published indicators for pathogens with criteria as protective as those published by EPA, in their water quality standards.

EPA is working with states and tribes to assist them in adopting water quality criteria for EPA's published pathogen indicators, *E. coli* and/or enterococcus bacteria, in their water quality standards. The Agency is also working with states, tribes, and local governments to strengthen local beach health monitoring efforts and procedures to achieve these standards. EPA assistance includes awarding grants for beach monitoring and public notification as well as providing technical assistance and training.

This document, *Bacterial Water Quality Standards for Recreational Waters (Freshwater and Marine Waters) - Status Report* provides a brief overview of the bacterial water quality standards that have been adopted by states for their marine and fresh recreational waters in the United States. This report is based on consultations with EPA water quality standards coordinators. The report is accurate as of September 2002; however, there may be revisions to standards that are not reflected in this report. EPA will update the report periodically to reflect new information. The information in the report is presented in summary format for both states/territories and tribes. The summary is organized first by EPA region, and then by state, territory, and tribe within each region.

For the precise regulatory language applicable to a particular state, the reader should consult the water quality standards of the state. Copies of state water quality standards may be obtained from the state's water quality management agency or its equivalent (EPA houses a repository of state, tribal, and territorial water quality standards on its website at <http://www.epa.gov/waterscience/standards/wqslibrary/>). Readers should also note that standards in this report may not be the only guidelines or standards in effect for recreational waters in a particular location. It is not uncommon for local health agencies to develop and adopt site-specific guidelines as part of their public health codes. One should consult the appropriate local health agency to obtain detailed information.

EPA's BEACH Program is improving public access to information about the quality of the water at their beaches and health risks associated with swimming in those waters. More information about water quality at our nation's beaches, local protection programs, and other beach-related programs is available on EPA's "Beach Watch" internet website at <http://www.epa.gov/waterscience/beaches/>.

Water Quality Standards Background

In response to widespread public concern about the condition of our nation's waters, the United States Congress enacted landmark legislation in 1972. This statute, the Federal Water Pollution Control Act Amendments of 1972 (referred to as the Clean Water Act of 1972, or CWA), expanded and built upon existing laws designed to control and prevent water pollution. Successive amendments to the 1972 CWA (the Clean Water Act of 1977 and the Water Quality Act of 1987) have continued to strengthen the law to better protect our nation's waters.

Water quality standards are the cornerstone of a state's water quality management program. States, territories, and Indian tribes set water quality standards for waters within their jurisdictions. Water quality standards define a use for a waterbody and describe the specific water quality criteria to achieve that use. The water quality standards also contain antidegradation policies to protect existing water quality. These are the goals by which success is ultimately gauged for a given waterbody or watershed.

The water quality standards program is administered by the U.S. Environmental Protection Agency (EPA). Congress has mandated that EPA is responsible for providing water quality criteria recommendations; approving state-adopted standards for waters of the United States; evaluating adherence to the standards; and overseeing enforcement of standards compliance. Guidance for the development of standards by individual states, tribes, and territories is contained in the EPA documents *Water Quality Standards Handbook*, Second Edition (1983) and *Ambient Water Quality Criteria for Bacteria* (1986).

Fecal bacteria have been used as an indicator of the possible presence of pathogens in surface waters and the risk of disease, based on epidemiological evidence of gastrointestinal disorders from ingestion of contaminated surface water or raw shellfish. Contact with contaminated water can lead to ear or skin infections, and inhalation of contaminated water can cause respiratory diseases. The pathogens responsible for these diseases can be bacteria, viruses, protozoans, fungi, or parasites that live in the gastrointestinal tract and are shed in the feces of warm-blooded animals.

However, because of the difficulties in analyzing for and detecting the many possible pathogens or parasites, concentrations of fecal bacteria, including fecal coliforms, enterococci, and *Escherichia coli*, are used as the primary indicators of fecal contamination. The latter two indicators are considered to have a higher degree of association with outbreaks of certain diseases than fecal coliforms and were recommended as the basis for bacterial water quality standards in the 1986 *Ambient Water Quality Criteria for Bacteria* document (both for fresh waters, enterococci for marine waters). The standards are defined as a concentration of the indicator above which the health risk from waterborne disease is unacceptably high.

Prior to the 1986 revision to the National criterion, there were recommendations in the report of the National Technical Advisory Committee to the Secretary of the Interior, *Water Quality Criteria* (1967) and by EPA in *Quality Criteria for Water* (1976). Both of these documents were based on fecal coliforms and recommended that maximum densities not exceed geometric means of 200 organisms per 100 ml in recreational waters.

The 1986 criteria statement for bacteriological criteria follows:

**EPA Criteria for Bathing (Full Body Contact)
Recreational Waters**

Freshwater

Based on a statistically sufficient number of samples (generally not less than 5 samples equally spaced over a 30-day period), the geometric mean of the indicated bacterial densities should not exceed one or the other of the following:¹

<i>E. coli</i>	126 per 100 ml; or
Enterococci	33 per 100 ml.

No sample should exceed a one sided confidence limit (C.L.) calculated using the following as guidance:

Designated bathing beach	75% C.L.
Moderate use for bathing	82% C.L.
Light use for bathing	90% C.L.
Infrequent use for bathing	95% C.L.

based on a site-specific log standard deviation, or if site data are insufficient to establish a log standard deviation, then using 0.4 as the log standard deviation for both indicators.

Marine Water

Based on a statistically sufficient number of samples (generally not less than 5 samples equally spaced over a 30-day period), the geometric mean of the enterococci densities should not exceed 35 per 100 ml.

No sample should exceed a one sided confidence limit using the following as guidance:

Designated bathing beach	75% C.L.
Moderate use for bathing	82% C.L.
Light use for bathing	90% C.L.
Infrequent use for bathing	95% C.L.

based on a site-specific log standard deviation, or if site data are insufficient to establish a log standard deviation, then using 0.7 as the log standard deviation.

¹Only one indicator should be used. The regulatory agency should select the appropriate indicator for its conditions.

Acknowledgments

This report is an update of the 1997 Bacterial Water Quality Standards Report and was compiled by Susan Emerson in the Office of Science and Technology. To ensure the completeness and accuracy of this overview, the following EPA Regional Water Quality Standards Coordinators were consulted:

- Region 1: Matt Liebman, Office of Ecosystem Protection
Boston, MA
- Region 2: Wayne Jackson, Division of Environmental Planning and Protection
New York, NY
- Region 3: Cheryl Atkinson, Water Protection Division
Philadelphia, PA
- Region 4: Fritz Wagener, Water Management Division
Atlanta, GA
- Region 5: Holly Wirick, Water Division
Chicago, IL
- Region 6: Russell Nelson, Water Quality Protection Division
Dallas, TX
- Region 7: Larry Shepard, Water, Wetlands and Pesticides Division
Kansas City, KS
- Region 8: Dave Moon, Office of Ecosystem Protection and Remediation
Denver, CO
- Region 9: Phil Woods, Water Division
San Francisco, CA
- Region 10: Marcia Lagerloef, Office of Water
Seattle, WA

Bacterial Water Quality Standards - Summary Information

Summary of Bacterial Water Quality Standards for States, Tribes, and Territories (By EPA Region)

State / Tribe / Territory	Criteria ^{1,2}	
	Freshwater	Marine Water
Region 1		
Connecticut	EN/FC/TC	EN
Maine	EC	EN
Massachusetts	FC	FC
New Hampshire	EC	EN
Rhode Island	FC/TC	FC/TC
Vermont	EC	•
Region 3		
Delaware	EN	EN
District of Columbia	FC	•
Maryland	EC/EN/FC	EN/FC
Pennsylvania	FC	•
Virginia	EC/FC	EN/FC
West Virginia	FC	•

State / Tribe / Territory	Criteria ^{1,2}	
	Freshwater	Marine Water
Region 2		
New Jersey	EN/FC	EN/FC
New York	FC/TC	FC/TC
Puerto Rico	FC/TC	EN/FC/TC
Virgin Islands	•	FC
Region 4		
Alabama	FC	FC
Florida	FC	FC
Georgia	FC	FC
Kentucky	FC	•
Mississippi	FC	FC
North Carolina	FC	FC
South Carolina	FC	FC
Tennessee	EC/FC	•
Miccosukee Tribe of Indians of Florida	FC/TC	•
Seminole Tribe of Florida	FC	•

¹ FC = fecal coliforms; TC = total coliforms; EN = enterococci; EC = *Escherichia coli*.

² Many jurisdictions use both the 1986 indicator criteria and fecal coliforms; some continue to use total coliforms. Even if a state has the authority to use the 1986 indicators, it may use another indicator at its discretion.

Summary of Bacterial Water Quality Standards for States, Tribes, and Territories (By EPA Region)

State / Tribe / Territory	Criteria ^{1,2}	
	Freshwater	Marine Water
Region 5		
Illinois	FC	•
Indiana	EC	•
Michigan	EC/FC	•
Minnesota	FC	•
Ohio	EC/FC	•
Wisconsin	FC	•
Fond du Lac Band of the Chippewa Tribe	EC	•
Sokaogon Chippewa Community of the Mole Lake Band of Chippewa Indians	EC/EN	•

State / Tribe / Territory	Criteria ^{1,2}	
	Freshwater	Marine Water
Region 6		
Arkansas	FC	•
Louisiana	FC	FC
New Mexico	FC	•
Oklahoma	EC/EN/FC	•
Texas	EC/EN/FC	EN/FC
Pueblo of Acoma	EC/EN/FC	•
Pueblo of Isleta	EC/FC	•
Pueblo of Nambe	FC	•
Pueblo of Picuris	EC/FC	•
Pueblo of Pojoaque	EC/FC	•
Pueblo of Sandia	FC	•
Pueblo of San Juan	EC/FC	•
Pueblo of Santa Clara	FC	•
Pueblo of Tesuque	FC	•

¹ FC = fecal coliforms; TC = total coliforms; EN = enterococci; EC = *Escherichia coli*.

² Many jurisdictions use both the 1986 indicator criteria and fecal coliforms; some continue to use total coliforms. Even if a state has the authority to use the 1986 indicators, it may use another indicator at its discretion.

Summary of Bacterial Water Quality Standards for States, Tribes, and Territories (By EPA Region)

State / Tribe / Territory	Criteria ^{1,2}	
	Freshwater	Marine Water
Region 7		
Iowa	FC	•
Kansas	FC	•
Missouri	FC	•
Nebraska	FC	•
Region 9		
Arizona	EC	•
California ³	EC/EN/FC/TC	EN/FC/TC
Hawaii	FC	EN
Nevada	EC/FC	•
American Samoa	FC	EN
Commonwealth of the Northern Mariana Islands	EC/EN/FC	FC/EN
Guam	EC/EN	EN
White Mountain Apache Tribe of the Fort Apache Reservation	EC/FC	
Hoopa Valley Tribe	EC/EN	

State / Tribe / Territory	Criteria ^{1,2}	
	Freshwater	Marine Water
Region 8		
Colorado	EC/FC	•
Montana	FC	•
North Dakota	FC	•
South Dakota	FC	•
Utah	FC/TC	•
Wyoming	FC	•
Assiniboine and Sioux Tribes of the Fort Peck Res.	EC/FC	•
Confederated Salish & Kootenai Tribes of the Flathead Reservation	FC/TC	•
Region 10		
Alaska	FC	FC
Idaho	EC	•
Oregon	EC	FC
Washington	FC	FC
Confederated Tribes of the Chehalis Reservation	FC	FC
Confederated Tribes of the Colville Reservation	EN	•
Confederated Tribes of the Umatilla Reservation	EC	•
Confederated Tribes of the Warm Springs Reservation	EC	
Puyallup Tribe of the Puyallup Reservation	FC	FC
Spokane Tribe	EC	•

¹ FC = fecal coliforms; TC = total coliforms; EN = enterococci; EC = *Escherichia coli*.

² Many jurisdictions use both the 1986 indicator criteria and fecal coliforms; some continue to use total coliforms.

³ California has 9 Regional Boards; some use the 1986 indicator criteria, whereas some use fecal coliform and total coliform entirely or for other purposes.

Narrative Summary

Eighteen states, twelve tribes, and two territories have adopted an *E. coli* standard for freshwaters:

States:	Tribes:	Territories:
Arizona	Assiniboine and Sioux Tribes	Commonwealth of the
California	of the Fort Peck Reservation	Northern Mariana Islands
Colorado	Confederated Tribes of the	Guam
Idaho	Umatilla Reservation	
Illinois	Confederated Tribes of the	
Indiana	Warm Springs Reservation	
Maine	Fond du Lac Band of the	
Maryland	Chippewa Tribe	
Michigan	Hoopa Valley Tribe	
Nevada	Pueblo of Acoma	
New Hampshire	Pueblo of Isleta	
Ohio	Pueblo of Picuris	
Oklahoma	Pueblo of Pojoaque	
Oregon	Pueblo of San Juan	
Tennessee	Spokane Tribe	
Texas	White Mountain Apache Tribe	
Vermont	of the Fort Apache	
Virginia	Reservation	

Six states, three tribes, and two territories use enterococci as a standard for freshwaters:

States:	Tribes:	Territories:
California	Confederated Tribes of the	Commonwealth of the
Connecticut	Colville Reservation	Northern Mariana Islands
Delaware	Hoopa Valley Tribe	Guam
Maryland	Pueblo of Acoma	
New Jersey		
Oklahoma		

Nine states and four territories use enterococci as a standard for marine waters:

States:	Territories:
California	American Samoa
Connecticut	Commonwealth of the Northern Mariana
Delaware	Islands
Hawaii	Guam
Maine	Puerto Rico
Maryland	
New Hampshire	
New Jersey	
Texas	
Virginia	

Bacterial Water Quality Standards - Detailed Overview

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine		
			Primary	Secondary	Primary	Secondary	
Region 1	Connecticut	Class AA	100 TC No single sample to exceed 500 TC. Class AA waters are not meant for contact recreation.				
		Class A/SA	33 EN	100 TC	33 EN No single sample may exceed 61 EN. TC value is monthly moving average. No more than 10% of TC samples may exceed 500.		
		Class B/SB	33 EN	200 FC	33 EN No single sample may exceed 61 EN. No more than 10% of FC single samples may exceed 400.		
		<i>Comments:</i>	EC criteria do not apply to all primary contact recreation waters, only established bathing waters.				
Maine		Class AA & A/SA	(see note)		(see note) Note: Bacteria content may be as naturally occurs.		
		Class B/SB	64 EC	8 EN For season May 15–September 30. No Class B sample may exceed 427 EC. No Class SB sample may exceed 54 EN.			
		Class C/SC	142 EC	14 EN For season May 15–September 30. No Class C sample may exceed 949 EC. No Class SC sample may exceed 94 EN.			
Massachusetts		Class A/SA	20 FC	200 FC Primary freshwater value based on arithmetic mean. No more than 10% of FC samples may exceed 100 for freshwater and 400 for marine waters, respectively. Marine value may be applied seasonally.			
		Class B/SB	200 FC	200 FC No more than 10% of FC samples may exceed 400. Marine value may be applied seasonally.			
		Class C/SC	1000 FC		1000 FC No more than 10% of FC samples may exceed 2000.		

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 1 (cont'd.)	New Hampshire	Class A	47 EC		35 EN	
			No single sample may exceed 153 EC or 104 EN. For "beach," no single sample may exceed 88 EC. Based on minimum of 3 samples taken in a 60-day period.			
		Class B	126 EC		35 EN	
			No single sample may exceed 406 EC or 104 EN. Based on minimum of 3 samples taken in a 60-day period.			
		Class B (beaches)	47 EC			
			No single sample may exceed 88 EC Based on minimum of 3 samples taken in a 60-day period.			
		Temporary Partial Use	(none)	(none)	(none)	(none)
	Rhode Island	Class A/SA	100 TC 20 FC		70 TC 15 FC	
			Primary values based on median. No more than 10% of TC samples may exceed 500 and 330, respectively. No more than 10% of FC samples may exceed 200 and 50, respectively.			
		Class B/SB	1000 TC		700 TC	
			Values based on median. No more than 20% and 10% of TC samples may exceed 2400 and 2300, respectively.			
			200 FC		50 FC	
			Values based on median. No more than 20% and 10% of FC samples may exceed 500 and 500, respectively.			
		Class C/SC		(see note)		(see note)
			Note: None in concentrations that would impair any uses assigned to this class.			
	<i>Comments:</i>		<i>Marine FC criteria are guides pending further research.</i>			
Vermont		Class A	18 EC			
		Class B	77 EC			
			Secretary may waive October 31–April 1.			

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine				
			Primary	Secondary	Primary	Secondary			
Region 2	New Jersey	Freshwater 1 (FW1)	(see note)	(see note)			shall be maintained as to quality in the natural state.		
		Pinelands Waters (PL)	(see note)	(see note)			shall be maintained as to quality in the natural state or the quality necessary to protect the designated use, whichever is more stringent.		
		Freshwater 2 (FW2)	33 EN	200 FC			No more than 10% of FC samples may exceed 400. No single EN sample may exceed 61.		
		Saline Estuary 1 (SE1)			35 EN	200 FC		No more than 10% of FC samples may exceed 400. No single EN sample may exceed 104.	
		Saline Estuary 2 (SE2)					770 FC		
		Saline Estuary 3 (SE3)					1500 FC		
		Saline Coastal (SC) Waters			35 EN	50 FC (within 1500 ft of coastline)	200 FC (1500 ft - 3 mi)		No more than 10% of FC samples may exceed 400. No single EN sample may exceed 104.
		<i>Mainstem Delaware River and Delaware Bay:</i>							
		Zones 1C,1D,1E,6	200 FC						
		Zone 2	200 FC	770 FC			Primary RM 133.4–117.81; secondary RM 133.4– 108.4		
		Zones 3,4		770 FC					
		Zone 5	200 FC	770 FC			Primary RM 59.5–48.2; secondary RM 78.8–59.5		
New York		Class AA	50 TC				Value based on median. No more than 20% of TC samples may exceed 240. Standards apply during periods of disinfection.		
		Class A	2400 TC	200 FC			TC value based on median. No more than 20% of TC samples may exceed 20,000.		

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 2 (cont'd.)	New York (continued)	Class B/SB	2400 TC 200 FC		2400 TC 200 FC	
			TC values based on median. No more than 20% of TC samples may exceed 5000.			
		Class C/SC	2400 TC 200 FC		2400 TC 200 FC	
			TC values based on median. No more than 20% of TC samples may exceed 5000.			
		Class D/SD	2400 TC 200 FC			
			TC values based on median. No more than 20% of TC samples may exceed 5000. Criteria apply only to Class D waters. There are no bacterial criteria for Class SD waters. Class SD waters are not meant for recreational purposes.			
		Class I			10000 TC 2000 FC	
	Class A-Special (A-S)	1000 TC				
	Fresh Surface Water	200 FC				
Puerto Rico	Class SA				(see note)	
		Note: May not be altered except by natural causes.				
	Class SB			35 EN 200 FC		
		35 EN for "intensely used waters"; otherwise, 200 FC. No more than 20% of FC samples may exceed 400.				
	Class SC				10,000 TC 2000 FC	
		No more than 20% of FC samples may exceed 4000.				
	Class SD		10,000 TC 2000 FC			
	No more than 20% of FC samples may exceed 4000.					
	Class SE		(see note)			
	Note: None of the parameters may be altered, except by natural causes.					
Virgin Islands	Class A				(see note)	
		Note: Existing natural conditions are not to be changed.				
	Class B			70 FC		
	Class C			200 FC		

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 3	Delaware		100 EN		10 EN	
		Bathing beaches	193 EN		35 EN	
		<i>Comments:</i>	No single freshwater sample may exceed 360 EN. No single marine sample may exceed 2,212 EN, or 460 EN within one-half mile of Indian River Inlet.			
			All samples with an excess of 104 EN are re-sampled, with advisories being based on consecutive samples in excess of the 104 EN criteria. Bathing beaches criteria are not part of the Delaware water quality standards regulations.			
	District of Columbia		200 FC	1000 FC		
			Does not apply for 24 hr following high flow conditions. Maximum 30 day geometric for 5 samples.			
	Maryland	Public bathing beach	126 EC 33 EN		35 EN	
		Other than public bathing beach	200 FC	200 FC	200 FC	200 FC
			No more than 10% of FC samples may exceed 400. Based on no less than 5 samples taken over a 30-day period.			
	Pennsylvania	Bac 1	200 FC			
			Swimming season (May 1–September 30). 2000 FC applies during the rest of the year.			
		Bac 2		5000 FC		
			No more than 20% of samples may exceed 5000 FC. No more than 5% of samples may exceed 20,000 FC. For public water supplies.			
		<i>Comments:</i>	Criteria adopted by the Delaware River Basin Commission (200 FC for the Delaware River from the Burlington Bristol Bridge to the Pennsylvania / Delaware line, 770 FC for the Delaware River from the head of tide to the Burlington Bristol Bridge) apply when they are more stringent than Pennsylvania's criteria.			
	Virginia		126 EC 200 FC	200 FC	35 EN 200 FC	200 FC
		<i>Comments:</i>	Based on two or more samples over a calendar month. No more than 10% of FC samples taken over a calendar month may exceed 400 FC. No sample may exceed 1000 FC. FC criteria do not apply after a sampling station has 12 or more data points for EC or EN, or after June, 2008, whichever comes first. Single sample maximum based on 75% upper confidence limit and site-specific log standard deviation. Until sufficient data are acquired 0.4 will be used for fresh waters, and 0.7 will be used for marine waters (235 EC and 104 EN)			
	West Virginia	Categories A&C	200 FC			
			No more than 10% of FC samples may exceed 400.			
		Ohio River (Category C)	2000 FC			
			For nonrecreation season November-April only.			
		<i>Comments:</i>	Based on minimum of 5 samples per month			

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 4	Alabama	Swimming	200 FC	200 FC	100 FC	100 FC
			Primary applies year-round. Secondary applies for out of season (October–May). Out of season mean 2000 FC; 4000 FC sample maximum for freshwater and marine waters.			
		Fish and Wildlife	200 FC	1000 FC	100 FC	1000 FC
	Florida		200 FC		200 FC	
			No more than 10% FC samples may exceed 400; 800 FC on any one day. 1000 TC maximum for monthly average. No more than 20% of TC single samples may exceed 1000. 2400 TC maximum on any one day. Based on minimum of 10 samples.			
	Georgia	Recreation	200 FC	200 FC	100 FC	200 FC
			For May through October, primary recreation criteria apply. All other months, secondary recreation criteria apply with a 4000 FC maximum of any sample.			
		Fishing	200 FC	1000 FC	200 FC	1000 FC
	Kentucky		200 FC	1000 FC		
			For May–October; no more than 20% of FC samples may exceed 400 and 2000, respectively. Out of season, secondary contact criteria used for primary waters.			
	Mississippi	Recreation	200 FC		200 FC	
			No more than 10% of FC samples may exceed 400.			
		Fish & Wildlife	200 FC	2000 FC	200 FC	2000 FC
			No more than 10% of FC samples may exceed 400. From November to April, secondary applies and no more than 10% of FC samples may exceed 4000.			
	North Carolina	Class SA (shellfishing)	14 FC			
			Based on median value. No more than 10% of FC samples may exceed 43 in those areas most probably exposed to fecal contamination during the most unfavorable hydrographic and pollution conditions.			
		Class B/SB (Primary Recreation, Fresh/Tidal Salt)	200 FC		200 FC	
			No more than 20% of FC samples may exceed 400.			
		Class C/SC (Secondary Recreation, Fresh/Tidal Salt)		200 FC		200 FC
			No more than 20% of FC samples may exceed 400. Violations are expected immediately following periods of rainfall in segments where uncontrollable nonpoint source pollution prevents attainment.			

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 4 <i>(cont'd.)</i>	South Carolina	Class FW/SA	200 FC		200 FC	
			No more than 10% of FC samples may exceed 400.			
		Class SB			200 FC	1000 FC
			No more than 20% of FC samples may exceed 2000.			
	Tennessee	Recreation	200 FC			
			126 EC			
			Based on minimum of 10 samples. No single FC sample may exceed 1000.			
		Domestic Water Supply	1000 FC	1000 FC		
			Based on a minimum of 10 samples. No single FC sample may exceed 5000.			
		Fish & Wildlife	1000 FC	1000 FC		
		Based on a minimum of 10 samples. No single FC sample may exceed 5000.				
	Micosukee Tribe of Indians of Florida	1000 TC				
		200 FC				
		No more than 20% of samples may exceed 1000 FC. No more than 10% of samples may exceed 400 FC. No sample may exceed 2,400 EC.				
	Seminole Tribe of Florida	200 FC				
		No more than 10% of samples may exceed 400 FC. No sample may exceed 800 FC.				
Region 5	Illinois		200 FC			
			No more than 10% of FC samples may exceed 400.			
		Lake Michigan	20 FC			
	<i>Comments:</i>	Illinois monitors 99% of its recreational waters using EC.				
	Indiana		125 EC			
		For season April through October. No single sample may exceed 235 EC.				
Michigan		130 EC				
		200 FC				
	No single sample may exceed 300 EC. May be exceeded if due to uncontrollable nonpoint sources. Primary standard can be temporarily suspended due to flood, accident, or emergencies that affect a sewer or wastewater treatment system. Can be suspended November 1-April 30. The criteria apply, at minimum, May 1-October 31.					
<i>Comments:</i>	The EC value is used for ambient monitoring; the FC value is used for assessing effluent discharges.					

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 5 (cont'd.)	Minnesota	Class A	200 FC No more than 10% of FC samples may exceed 400. Criterion applies only during the March 1–October 31 season.			
		Class B	200 FC No more than 10% of FC samples may exceed 2000. Criterion applies only during the March 1–October 31 season.			
	Ohio	Lake Erie & Ohio River Uses	200 FC 126 EC No more than 10% of FC samples may exceed 400. No more than 10% of EC samples may exceed 235. Based on not less than 5 samples taken during any 30-day period.			
		Rest of state	1000 FC 126 EC	5000 FC 576 EC No more than 10% of FC samples may exceed 2000 and 5000, respectively. No more than 10% of EC samples may exceed 298 [primary] and 576 [secondary].	
	<i>Comments:</i>	Both Lake Erie and the Ohio River are designated as <i>bathing waters</i> . For each designation, at least one of the two bacterial standards (FC or EC) must be met. These criteria apply outside the mixing zone.				
	Wisconsin	200 FC No more than 10% of FC samples may exceed 400. Specific water segments have variances which allow 1000 FC.				
	Fond du Lac Band of the Chippewa Tribe	126 EC 126 EC When fewer than five samples are collected in a thirty day period, no sample may exceed 235 EC.				
	Sokaogon Chippewa Community of the Mole Lake Band of Chippewa Indians	(See note) (See note) Criteria are based on either EPA criteria guidance or ambient concentrations, whichever is more stringent.				

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 6	Arkansas		200 FC	1000 FC		
			No more than 10% of FC sample may exceed 400 and 2000, respectively. For extraordinary resource waters, primary standard always applies; for other waters, primary standard in effect April 1–September 30. Rest of year, secondary applies.			
	Louisiana		200 FC	1000 FC	200 FC	1000 FC
			No more than 10% of FC samples in a 30 day period, or 25% annually, may exceed 400 for primary contact and 2000 for secondary contact. Primary criteria apply May 1 - October 31. The rest of the year, secondary criteria apply.			
	New Mexico		200 FC	1000 FC		
			No single sample may exceed 400 FC or 2000 FC, respectively.			
		Select Segments:	100 FC			
			No single sample may exceed 200 FC			
	<i>Comments:</i>	Surface waters of the state shall be virtually free of pathogens. In particular, surface waters of the state used for irrigation of table crops such as lettuce shall be virtually free of <i>salmonella</i> and <i>shingella</i> species.				
	Oklahoma		126 EC 33 EN 200 FC	Narrative		
			Primary criteria apply May 1 – September 30; rest of year, secondary criteria apply. No more than 10% of FC samples may exceed 400. For lakes and high use waterbodies, no single sample may exceed 235 EC and 61 EN. For all other waters, no single sample may exceed 406 EC and 108 EN.			
	<i>Comments:</i>	Adopted WQS to allow choice of FC, EC, EN.				
	Texas		126 EC 200 FC	605 EC 2000 FC	35 EN 200 FC	168 EN 2000 FC
			No sample may exceed 394 EC for primary contact. No samples may exceed 400 FC or 89 EN for primary contact and 4000 FC for secondary contact.			
		Houston Ship Channel	168 EN			
			No more than 10% of EN samples (if more than 10 samples) or a single sample (if fewer than 10 samples) may exceed 500. This criterion applies for two segments of the Houston Ship Channel.			
	<i>Comments:</i>	Texas Department of Health uses most probable number (MPN) methodology; Texas Commission on Environmental Quality uses membrane filtration (MF) methodology. FC bacteria can be used as an alternative instream indicator of recreational suitability until sufficient data are available for EC or EN. For segments designated as oyster waters, FC can continue to be used as an indicator of recreational suitability because FC is used as the indicator for suitability of oyster water use.				

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 6 (cont'd.)	Pueblo of Acoma		126 EC			
			33 EN			
			200 FC			
			No sample may exceed 235 EC or 61 EN for Acomita Lake and high use water bodies and 406 EC or 108 EN for all other ceremonial and recreational use areas. No more than 10% of the total samples in any 30-day period may exceed 400 FC. The criteria for partial body contact is 10 times the criteria specified for primary contact recreation.			
	<i>Comments:</i>	Compliance for primary contact recreation based on meeting the criteria for one of the indicators.				
	Pueblo of Isleta	Primary Contact	47 EC			
		Ceremonial	100 FC			
			No sample may exceed 200 FC or 88 EC for primary contact ceremonial and recreational uses.			
	Pueblo of Nambe		200 FC			
			No sample may exceed 400 FC			
	<i>Comments:</i>	No secondary contact recreation use.				
	Pueblo of Picuris		126 EC			
			200 FC			
			No sample may exceed 400 FC or 235 EC.			
	<i>Comments:</i>	No secondary contact recreation use.				
	Pueblo of Pojoaque		126 EC			
			200 FC			
			No sample may exceed 400 FC or 235 EC.			
	<i>Comments:</i>	No secondary contact recreation use.				
	Pueblo of Sandia	Ceremonial	100 FC			
		Recreational (April 1 - September 30)	100 FC			
		(All other times)		200 FC		
	<i>Comments:</i>	No sample may exceed 200 FC for primary contact recreation and primary contact ceremonial uses, or 400 EC for secondary contact recreation.				
	Pueblo of San Juan	Ceremonial	100 FC			
			47 EC			
		Recreational (April 1 - September 30)	47 EC	200 FC		
		(All other times):	100 FC			
				200 FC		
	<i>Comments:</i>	No sample may exceed 200 FC or 88 EC for primary contact recreation or primary contact ceremonial uses, and 400 FC for secondary contact recreation.				

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 6 (cont'd.)	Pueblo of Santa Clara		200 FC			
	<i>Comments:</i>	No secondary contact recreation use.				
	Pueblo of Tesuque		200 FC			
	<i>Comments:</i>	No secondary contact recreation use.				
Region 7	Iowa		200 FC			
	<i>Comments:</i>	For April 1-October 31 season. Excepted when waters are materially affected by surface runoff, but FC levels downstream from discharge may not be >200 more than the background level upstream.				
	Kansas		200 FC	2000 FC		
	<i>Comments:</i>	Classified surface waters may be excluded from the application of the numeric criteria for fecal coliform when stream flow exceeds 50% of the estimated 2-year flood flow.				
	Missouri		200 FC			
<i>Comments:</i>	State applies FC to designated losing streams also, but on a year- round basis.					
Nebraska		200 FC				
			No more than 10% of samples may exceed 400 FC. Applies May 1-September 30.			

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 8	Utah	Class 2A	1000 TC 200 FC			
		 Failure of stream to meet WQS when flow is unusually high is not a cause for action if discharger is meeting permit requirements.			
		Class 2B		5000 TC 200 FC		
	<i>Comments:</i>	Although the state has both primary and secondary contact recreation uses, the same primary contact level of protection is applied to both. The state retained two use classifications to address safety concerns in designating certain waters as "swimmable."				
	Wyoming		200 FC	1000 FC		
	<i>Comments:</i>	No more than 10% of FC samples may exceed 400 and 2000, respectively. For recreational season May 1 –September 30. The geometric mean of 3 samples collected within a 24 hour period may not exceed 400 FC. All waters of the state are designated for primary contact. Standards apply throughout the year.				
	Colorado	Class 1A	200 FC 126 EC			
		Class 1B	325 FC 205 EC			
		Class 2		2000 FC 630 EC		
	<i>Comments:</i>	Colorado has two categories of primary contact recreation use in addition to their secondary contact recreation use. The Recreation Class 1a use is the default use category. In these waters, primary contact recreation uses have been documented or are presumed to be present. The Recreation Class 1b use is intended to protect waters with the potential to support primary contact uses, and may be assigned only if a reasonable level of inquiry has failed to identify any existing primary contact recreation uses of the waterbody. The Rec 1b use category is assigned geometric mean <i>E. coli</i> criteria based on an illness rate of 10 per 1000 swimmers (compared to 8 per 1000 for Class 1a). Finally, the Recreation Class 2 use may be assigned only where a use attainability analysis has demonstrated that there is no reasonable potential for primary contact recreation uses to occur within the next 20-year period.				
	Montana	Class A	50 FC			
		Class A1	50 FC			
		Classes B1, B2, B3, C1, C2, C3	200 FC			
	<i>Comments:</i> No more than 10% of samples may exceed 400 FC.				
	<i>Comments:</i>	Classes A and A1 are protected as primary drinking water sources. Criteria for B and C classes only apply when the water is above 60 degrees F. All waters of the state are given an A, B, or C classification.				

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 8 (cont'd.)	North Dakota		200 FC			
			Only during recreation season May 1-September 30.			
	<i>Comments:</i>	The primary contact standards apply to all waters. The standards note that Class III waters have limited potential for immersion recreation because of ephemeral and intermittent flows. Nevertheless, the standards apply.				
	South Dakota		200 FC	1000 FC		
			No sample may exceed 400 FC for primary contact recreation and 2000 FC for secondary contact recreation. No more than 20% of samples may exceed 200 FC for primary contact recreation and 1000 FC for secondary contact recreation.			
<i>Comments:</i>	The primary and secondary contact standards apply May 1-September 30.					
Assiniboine and Sioux Tribes of the Fort Peck Indian Reservation			126 EC	126 EC		
			200 FC	200 FC		
		10% of the total samples during a 30-day period cannot exceed 400 FC. No sample may exceed 235 EC for primary contact recreation and 406 EC for secondary contact recreation.				
<i>Comments:</i>	The recreational standards apply when the water temperature exceeds 15.5 degrees C. The only difference in the level of protection between primary and secondary is the single sample maximum for EC.					
Confederated Salish and Kootenai Tribes of the Flathead Reservation			200 FC	200 FC		
	Class A - closed basin		50 TC	50 TC		
	Class A1		50 TC	50 TC		
		10% of the total samples during a 30-day period cannot exceed 400 FC.				
<i>Comments:</i>	All waters of the Reservation are designated for primary contact recreation. One element of the Class A use is primary contact recreation.					

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine		
			Primary	Secondary	Primary	Secondary	
Region 9	Arizona		126 EC	126 EC			
			Single sample maximum is 235 for full body contact and 576 for partial body contact.				
	California	North Coastal Regional Board 1		50 FC		50 FC	
				No more than 10% of FC samples may exceed 400.			
		San Francisco Bay Regional Board 2		126 EC†	2000 FC	35 EN	2000 FC
				33 EN†		200 FC	
				200 FC		240 TC	
			Marine waters: No sample may exceed 104 - 500 EN based on frequency of use. Fresh waters: No sample may exceed 61-151 EN or 235-576 EC based on frequency of use. No sample may exceed 4000 FC for secondary contact. No more than 10% of FC samples may exceed 400. No sample to exceed 10,000 TC.				
		Central Coast Regional Board 3		200 FC	2000 FC	200 FC	2000 FC
				No more than 10% of FC samples may exceed 400 for water contact recreation (REC-1) or 4000 for non-contact water recreation (REC-2).			
Los Angeles Regional Board 4		126 EC	2000 FC	35 EN	2000 FC		
		200 FC		200 FC	1000 TC		
	Marine: single sample maximum is 400 FC, 10,000 TC, and 104 EN. Fresh: single sample maximum is 235 EC and 400 FC.						
Central Valley Regional Board 5		126 EC					
		Single sample maximum is 235 EC.					
Folsom Lake (In Central Valley)		100 FC					
	No more than 10% of samples may exceed 200 FC.						
Lahontan Regional Board 6		20 FC					
		No more than 10% of FC samples may exceed 40. No more than 10% of FC samples may exceed 75 for the Eagle Drainage Hydrologic Area. A log mean concentration exceeding 20/100 mi for any 30-day period shall indicate violation of this objective even if fewer than five samples were collected.					

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine		
			Primary	Secondary	Primary	Secondary	
Region 9 (cont'd.)	California (continued)	Colorado River Basin Regional Board 7	126 EC 33 EN 200 FC	630 EC 165 EN			
		<p>No sample may exceed 100 EN and 400 EC for primary contact and 500 EN and 2000 EC for secondary contact. For the Colorado River, no sample may exceed 61 EN and 235 EC for freshwater primary contact. For secondary contact, no sample may exceed 305 EN and 1175 EC. No more than 10% of FC samples may exceed 400. Also maximum limits for EN and EC vary by level of use.</p>					
		Santa Ana Regional Board 8	200 FC	2000 FC	200 FC	2000 FC	
		<p>No more than 10% of FC samples may exceed 400 for primary contact and 4000 for secondary contact; 100 TC maximum in lakes and streams designated as domestic water supply. The marine water criteria also apply to bays and estuaries.</p>					
		San Diego Regional Board 9	126 EC 33 EN 200 FC	2000 FC	35 EN 200 FC	2000 FC	
<p>For fresh water, no more than 10% of samples may exceed 400 FC for primary contact and 4000 FC for secondary contact. Single sample maximum ranges from 61 EN - 151 EN and 235 EC - 576 EC for fresh waters and 104 EN - 500 EN for marine waters based on frequency of use.</p>							
		Ocean Plan			24 EN for 30 day period 12 EN for 6 month period 200 FC 1000 TC		
<p>No more than 20% of TC samples may exceed 1000 in bays and estuaries. No more than 10% of FC samples may exceed 400.</p>							
<i>Comments:</i>		Essentially all California waters are designated for primary contact recreation with the exception of the Colorado River Basin Region.					
	Hawaii		200 FC		7 EN		
<p>Inland: based on minimum of 10 samples. No more than 10% of FC samples may exceed 400. Marine: based on minimum of 5 samples.</p>							
<i>Comments:</i>		Revisions pending for fresh waters and marine waters.					

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine	
			Primary	Secondary	Primary	Secondary
Region 9 (cont'd.)	Nevada	Class A and B	200 FC No more than 10% of FC samples may exceed 400.			
		Class C (includes noncontact recreation)	FC may not exceed the more stringent of: 1) The FC concentration must not exceed 1000 nor may more than 20% of total samples exceed 2400. 2) The FC concentration must not exceed that which is characteristic of natural conditions by more than 200, nor may the FC concentration in a single sample exceed that which is characteristic of natural conditions by more than 400.			
		Waters not listed below	200 FC	1000 FC More stringent of the following: For 1000 FC, no more than 20% of samples may exceed 2400 FC. Annual geometric mean FC concentration may not exceed characteristics of natural conditions by more than 200 FC, nor 400 FC in a single sample. For primary, no more than 10% of FC samples may exceed 400.	
		Lake Tahoe and Tributaries and Humboldt River Basin, Walker River, and Walker Lake	126 EC Lake Tahoe Basin also has FC limits between 5 and 32 (median) for offshore and undeveloped lake shore. Humboldt River Basin has single value of 406 EC.		
<i>Comments:</i>	Nevada adopts water quality standards on a water body specific basis. The state is in the process of replacing waters with FC criteria with EC criteria as revisions are made basin-by-basin.					
American Samoa			100 FC	35 EN No more than 10% of samples may exceed 200 FC. For Open Ocean, no sample may exceed 276 EN. For Open Coastal Waters and all Embayments except Pago Harbor, Fagatele Bay, and Pala Lagoon, no sample may exceed 124 EN. For Pago Harbor, Fagatele Bay, and Pala Lagoon, no sample may exceed 104 EN.		
<i>Comments:</i>	Revisions pending for fresh waters.					
Common wealth of the Northern Mariana Islands	All waters	200 FC	200 FC No FC samples may exceed 400 at any time.			
	Class AA	35 EN				
	Class 1	125 EC 33 EN				
	Class A	125 EN				
	Class 2	300 EC 90 EN				
<i>Comments:</i>	All Mariana Islands standards based on a minimum of 5 samples. One element of the Class A use is limited body contact.					

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine		
			Primary	Secondary	Primary	Secondary	
Region 9 (cont'd.)	Guam	S1/S2 Fresh Waters	126 EC 33 EN				
	 No sample may exceed 235 EC or 61 EN. Values based on arithmetic mean.					
		S3 Fresh Waters	126 EC 33 EN				
	 Values based on arithmetic mean. No sample may exceed 406 EC. No sample may exceed 108 EN.					
		M1/M2 Marine Waters			35 EN		
..... No sample may exceed 104 EN.							
		M3 Marine Waters			35 EN		
..... No sample may exceed 276 EN.							
<i>Comments:</i>	All waters are designated for contact recreation.						
	Hoopa Valley Tribe		126 EC 33 EN				
	White Mountain Apache Tribe		47 EC	1000 FC 2000 FC with 10%			
..... No sample may exceed 88 EC for primary contact and 4000 EC for secondary contact.							
<i>Comments:</i>	Primary contact recreation criteria apply May 1 - September 30, secondary contact recreation criteria apply October 1 - April 30.						
Region 10	Alaska		100 FC	200 FC	100 FC	200 FC	
..... No more than 1 sample, or 10% of the samples if there are more than 10 samples, may exceed 200 FC and 400 FC for both freshwater and marine, primary and secondary, respectively.							
<i>Comments:</i>	Alaska designates all waters for all uses, and the most stringent criteria must be used. Therefore, for freshwater, the drinking water use criterion of 20 FC usually drives most NPDES permit actions, 303(d) listings, and TMDL development. For marine waters, the most stringent bacterial criterion is for the seafood processing use = 20 FC (no more than 10% of the samples may exceed 40 FC). Even though Alaska has 100 FC/200 FC as its recreation criteria, more stringent criteria for other use categories take precedence.						
	Idaho		126 EC	126 EC			
..... Primary levels apply during season May 1–September 30 for primary only; secondary applies all other times. No sample may exceed 406 EC for primary contact recreation and 576 EC for secondary contact recreation.							

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine			
			Primary	Secondary	Primary	Secondary		
Region 10 (cont'd.)	Oregon		126 EC		14 FC			
			No freshwater single sample may exceed 406 EC. No more than 10% of FC marine samples may exceed 43. For estuarine waters other than shellfish growing, same criterion as freshwater criterion. For estuarine waters with shellfish, same criterion as marine.					
		Washington	Class AA (extraordinary)	50 FC		14 FC		
				No more than 10% of FC samples may exceed 100 and 43, respectively.				
			Class A (excellent)	100 FC		14 FC		
				No more than 10% of FC samples may exceed 200 and 43, respectively.				
			Class B (good)		200 FC		100 FC	
			No more than 10% of FC samples may exceed 400 and 200, respectively. Only designated for secondary contact.					
		Class C (fair)				200 FC		
			No more than 10% of FC samples may exceed 400. Only designated for secondary contact.					
Lake Class	50 FC							
	No more than 10% of samples may exceed 100 FC.							
Confederated Tribes of the Chehalis Reservation	Class AA (extraordinary)	50 FC		14 FC				
		No more than 10% of FC samples may exceed 100 and 43, respectively.						
	Class A (excellent)	100 FC		14 FC				
		No more than 10% of FC samples may exceed 200 and 43, respectively.						
	Class B (good)		200 FC		100 FC			
		No more than 10% of FC samples may exceed 400 and 200, respectively. Only designated for secondary contact.						
Class C (fair)				200 FC				
	No more than 10% of FC samples may exceed 400. Only designated for secondary contact.							
Lake Class	50 FC							
	No more than 10% of samples may exceed 100 FC.							

Bacterial Water Quality Standards by EPA Region

Region	State	Class	Freshwater		Marine		
			Primary	Secondary	Primary	Secondary	
Region 10 (cont'd.)	Confederated Tribes of the Colville Reservation	Class I (extraordinary)	8 EN				
			No sample may exceed 35 EN.				
		Class II (excellent)	16 EN				
			No sample may exceed 75 EN.				
		Class III (good)		33 EN			
			No sample may exceed 150 EN. Only designated for secondary contact.				
		Lake Class	33 EN				
			No sample may exceed 150 EN.				
		Confederated Tribes of the Warm Springs Reservation		126 EC			
			No sample may exceed 406 EC.				
	<i>Comments:</i>	Standards are for public and private domestic water supply, water contact recreation, wildlife and hunting, fishing, and boating/recreation.					
	Confederated Tribes of the Umatilla Reservation		126 EC				
		No sample may exceed 406 EC.					
	Puyallup Tribe of the Puyallup Reservation	Class AA (extraordinary)	50 FC		14 FC		
			No more than 10% of FC samples may exceed 100 and 43, respectively.				
		Class A (excellent)	100 FC		14 FC		
			No more than 10% of FC samples may exceed 200 and 43, respectively.				
		Class B (good)		200 FC		100 FC	
		No more than 10% of FC samples may exceed 400 and 200, respectively. Only designated for secondary contact.					
		Class C (fair)			200 FC		
		No more than 10% of FC samples may exceed 400. Only designated for secondary contact.					
		Lake Class	50 FC				
		No more than 10% of samples may exceed 100 FC.					
	Spokane Tribe of Indians		126 EC				
		No more than 10% of samples may exceed 406 EC. This applies to single samples if less than 10 samples are taken.					

Sources: U.S. Environmental Protection Agency, Regional Offices and Office of Science and Technology, Standards and Health Protection Division.