CATEGORY 4b – CURRENT NATIONAL STATUS AND TRENDS

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ABSTRACT

Section 303(d) of the Clean Water Act and the US Environmental Protection Agency's (USEPA) supporting regulations in 40 CFR Part 130.7 require States to develop lists of waterbodies impaired by a pollutant and needing a Total Maximum Daily Load (TMDL) (i.e., the Section 303(d) list) and to develop a TMDL for each waterbody-pollutant combination. USEPA's regulations also recognize that other pollution control requirements may obviate the need for a TMDL. These alternatives to TMDLs are commonly referred to as Category 4b waters as described in USEPA's Integrated Reporting Guidance for Sections 303(d), 305(b), and 314 of the Clean Water Act.

This paper presents the results of a survey conducted in May 2009 to assess the extent to which States have successfully employed TMDL alternatives to address impaired waters and assigned these waters to Category 4b. The survey, which was based primarily on States' USEPA-approved 2008 Section 303(d) lists, showed that over 400 impaired waters (including more than 600 waterbody-pollutant combinations) are currently assigned to Category 4b in 26 States. Types of pollutants addressed and the general types of controls used to support the Category 4b assignments are also discussed. Results of the survey show that the number of impaired waters successfully assigned to Category 4b and the number of States assigning waters to Category 4b have increased from the 2006 to 2008 Section 303(d)/IR reporting cycle.

KEYWORDS

TMDL, alternative, Category 4b, impairment

INTRODUCTION

Section 303(d) of the Clean Water Act (CWA) and the U.S. Environmental Protection Agency's (USEPA) 1992 supporting regulations (see 40 CFR 130.7) require States, territories, and authorized tribes (herein referred to as States) to develop lists of waters impaired or threatened by pollutants (i.e., Section 303(d) list) and to develop Total Maximum Daily Loads (TMDLs) for these waters. USEPA's supporting regulations also recognize that alternative pollution control requirements may obviate the need for a TMDL. Specifically, impaired waters are not required to be included on a State's Section 303(d) list if technology-based effluent limitations required by the CWA, more stringent effluent limitations required by State, local, or federal authority, or "[o]ther pollution control requirements (e.g., best management practices) required by local,

[s]tate or [f]ederal authority" are stringent enough to implement applicable water quality standards (see 40 CFR 130.7(b)(1)). These alternatives to TMDLs are commonly referred to as "Category 4b" waters, as described in USEPA's Integrated Reporting Guidance (IRG) for Sections 303(d), 305(b), and 314 of the CWA (USEPA, 2005 and 2006).

Beginning with the 2002 reporting cycle, USEPA's IRG recommends that States use the following five reporting categories to report on the water quality status of all waters in their State:

- Category 1: All designated uses (DU) are supported, no use is threatened;
- Category 2: Available data and/or information indicate that some, but not all of the DUs are supported;
- Category 3: There is insufficient available data and/or information to make a DU support determination;
- Category 4: Available data and/or information indicate that at least one DU is not being supported or is threatened, but a TMDL is not needed;
- Category 5: Available data and/or information indicate that at least one DU is not being supported or is threatened, and a TMDL is needed.

As the above categories show, waters assigned to Category 4 and 5 are impaired or threatened; however, waters assigned to Category 5 represent waters on a State's Section 303(d) list. Similar to Category 5, waters in Category 4 are also impaired or threatened; however, other conditions exist that no longer require them to be included on a State's Section 303(d) list. These conditions, which are referred to as subcategories of Category 4 in USEPA's IRG are described below:

- Category 4a: TMDL has been completed;
- Category 4b: TMDL is not needed because other pollution control requirements are expected to result in the attainment of an applicable WQSs in a reasonable period of time;
- Category 4c: The non-attainment of any applicable WQS for the waterbody is the result of pollution and is not caused by a pollutant. Examples of circumstances where an impaired segment may be placed in Category 4c include waterbodies impaired solely due to lack of adequate flow or to stream channelization.

According to USEPA's IR guidance, USEPA will evaluate on a case-by-case basis a State's decisions to exclude certain waterbody-pollutant combinations from Category 5 (the Section 303(d) list) based on the Category 4b alternative. The IRG indicates that States should provide in their Section 303(d) list submission a rationale that supports their conclusion that there are "other pollution control requirements" stringent enough to achieve applicable water quality standards within a reasonable period of time. The rationale should address each of the following six elements:

1. Identification of segment(s) and statement of problem causing the impairment(s);
2. Description of the pollution controls and how they will achieve WQS, including a description of the pollutant loads needed to meet WQS and a description of the requirements under which the controls will be implemented;
3. An estimate or projection of the time when WQS will be met;

4. Schedule for implementing pollution controls;
5. Monitoring plan to track effectiveness of pollution controls;
6. Commitment to revise pollution controls, as necessary.

USEPA's recommended format and content for a Category 4b submittal is provided in the Attachment.

Although USEPA's Category 4b guidance was initiated over eight years ago for the 2002 reporting cycle, Category 4b is not a widely used alternative to developing TMDLs for impaired and threatened waters. Since the 1990s, States and USEPA have produced more than 39,000 TMDLs (USEPA, 2009). However, a 2006 survey (based primarily on States' USEPA-approved 2006 303(d) lists) showed that 267 impaired waters had been successfully assigned to Category 4b (Monschein and Mann, 2007).

Several options to advance the appropriate use of Category 4b have been suggested. In a March 2008 letter to USEPA's Assistant Administrator for Water, the Association of State and Interstate Water Pollution Control Administrators (ASIWPCA) highlighted State-developed options for reducing the workload burden for States associated with their biennial development and submission of Section 303(d) lists/Integrated Reports (IR). Among ASIWPCA's options was a suggestion to identify current Category 4b demonstrations that have been successfully vetted through the Section 303(d) list development and review process, including those that involve more than National Pollutant Discharge Elimination System (NPDES) permits. Sharing of model Category 4b demonstrations was also identified as a means to advance the appropriate use of Category 4b in Monschein and Mann (2007).

The purpose of this survey was to assess the current extent to which States have successfully assigned impaired waters to Category 4b. This survey updates previous Category 4b survey efforts (Monschein and Mann, 2007) by identifying the number of impaired waters and waterbody-pollutant combinations successfully assigned to Category 4b as part of the 2008, or most recent, Section 303(d)/IR reporting cycle. The survey methods and results, a discussion of the results, and a conclusion are provided below.

METHODOLOGY

The survey to assess the current extent to which States have successfully assigned impaired waters to Category was conducted in May 2009. The primary source of information for the survey was States' most recent USEPA-approved Section 303(d) list/IR. Information from a State's draft or submitted (but not yet USEPA approved) 2008 Section 303(d) list/IR was also used to determine if the State had re-categorized impaired waters successfully assigned to Category 4b during previous reporting cycles. For each impaired water successfully assigned to Category 4b, the following information was recorded: (1) waterbody name, (2) State, (3) pollutant(s) or criteria affected, and (4) general type(s) of controls used to support the Category 4b assignment.

RESULTS

The survey showed that currently over 400 impaired waters (including more than 600 waterbody-pollutant combinations) are successfully assigned to Category 4b in 26 States. States with impaired waters successfully assigned to Category 4b are shown in Figure 1. Figure 2 shows the reporting cycle year that provided the information for the survey. Note that the majority of information (more than 85% of the States) was obtained from States' USEPA-approved or draft/submitted 2008 Section 303(d) lists/IRs.

General control types used to support the Category 4b assignments included the following, ranked ordered (high to low) by the number of impaired waters assigned to each control type:

- Point source permit limits (e.g., NPDES permit limits)
- Short- and long-term remediation activities for hazardous substances (e.g., CERCLA and RCRA remedial actions)
- Watershed restoration plans, including plans based on voluntary/incentive-based controls
- Local ordinances for addressing nonpoint sources
- CSO consent orders
- Point source permit limits combined with natural attenuation
- Chemicals bans combined with natural attenuation
- FERC license and 401 certification
- Permanent or temporary removal of the original source of impairment
- Remediation activities combined with point source permit limits
- State water right licenses for flow regulation/modification
- State regulations and local ordinances for nonpoint sources

For each general control type, Table 1 summarizes the States using the control type to support the Category 4b assignment, pollutants or criteria affected, number of impaired waters, and number of waterbody-pollutant combinations. Specific information for each impaired water successfully assigned to Category 4b is provided in the Appendix.

DISCUSSION

Results of this survey indicate that the number of impaired waters successfully assigned to Category 4b, as well as the number of States successfully assigning waters to Category 4b has increased for the 2008 Section 303(d)/IR reporting cycle. Specifically, a 2006 survey (based primarily on States' USEPA-approved 2006 303(d) lists/IR) showed that 267 impaired waters had been successfully assigned to Category 4b in 15 States (Monschein and Mann, 2007). However, despite the increase in the successful use of Category 4b for the 2008 reporting cycle, TMDLs (over 39,000 nationally) continue to be the primary means to address impaired and threatened waters in States' Section 303(d) programs (USEPA, 2009).

Figure 1 – States with Impaired Waters Successfully Assigned to Category 4b (May 2009)

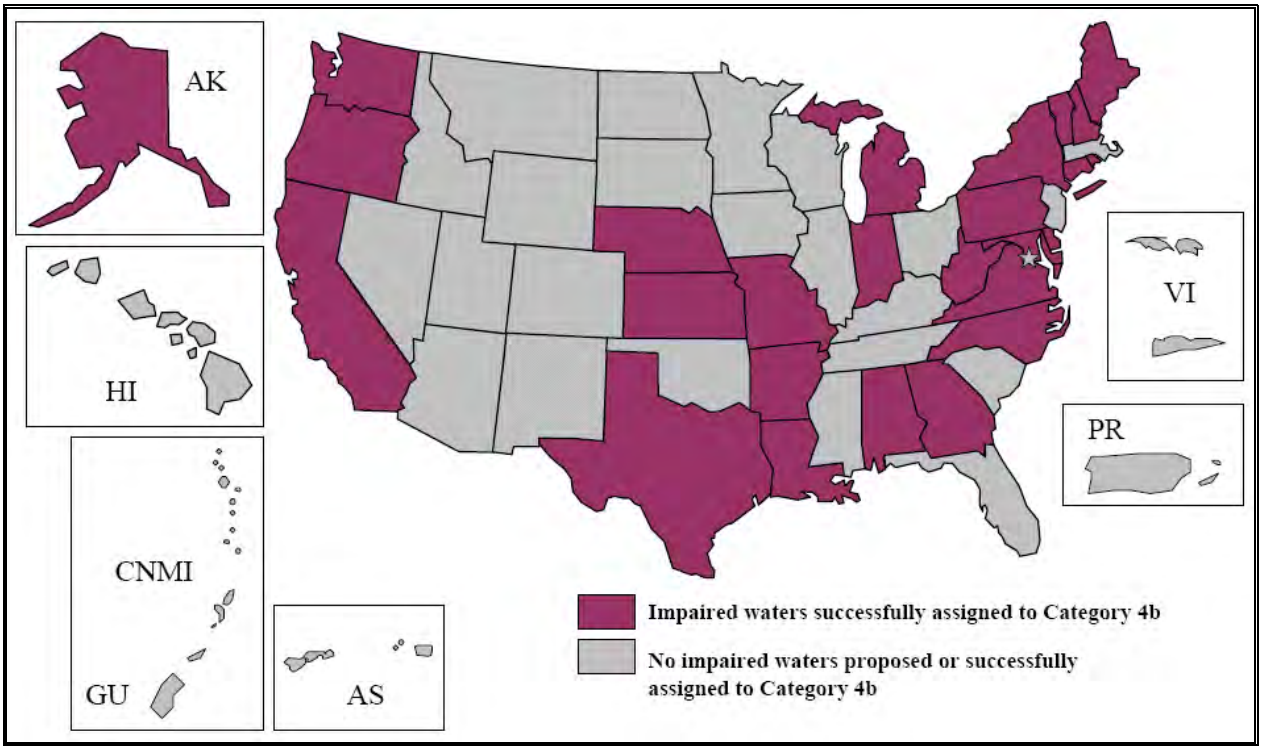

Figure 2 – Source of Category 4b Information (May 2009)

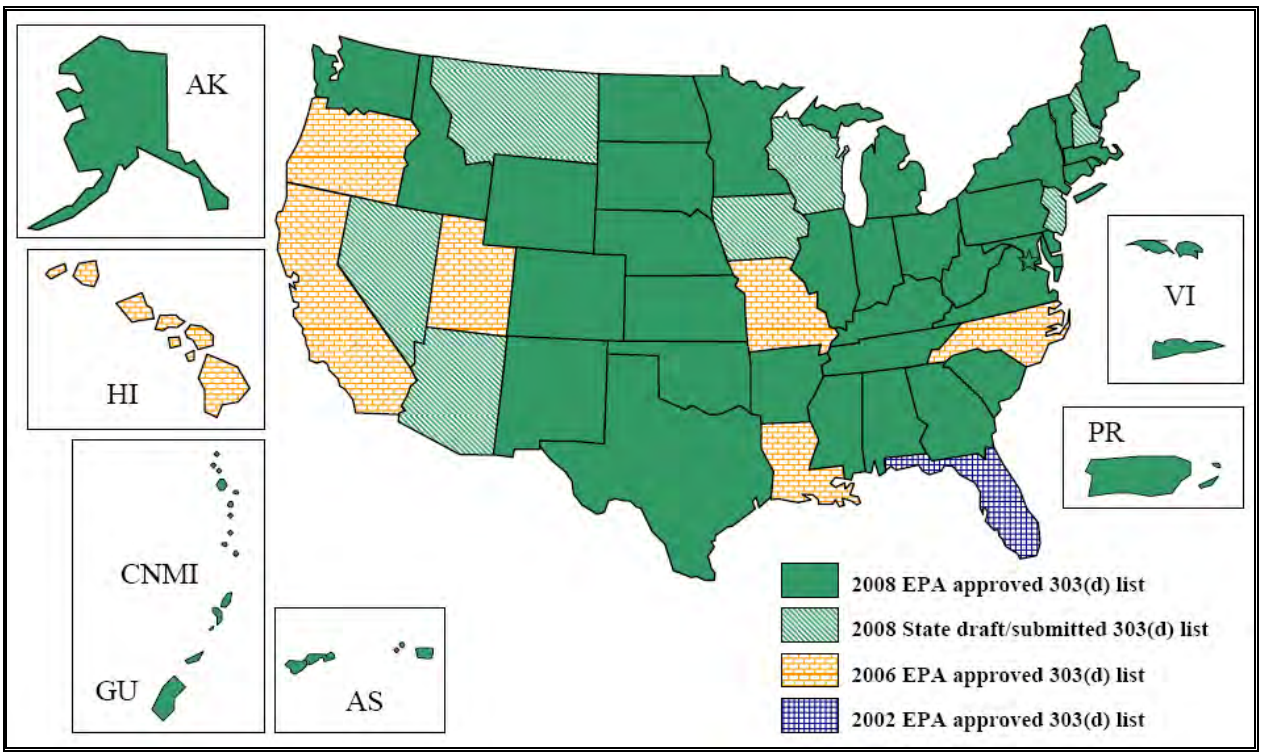

Table 1 – Summary of Impaired Waters Successfully Assigned to Category 4b (May 2009)

General Control Type	States	Pollutants/Criteria Affected	No. of Impaired Waters	No. of WPCs
Point source permit[a]	ME, RI, VT, VA, WV, NY, MA, AL, GA, IN, MI, TX, NE, KS, MO, CA, OR, NC, DE, PA	B-M, thermal modification; sediment; nutrients (nitrogen/phosphorus); E. coli; copper; ammonia; chlorides; zinc; TSS; tributylin; BOD; DO; whole effluent toxicity; benzene; toluene; xylene; nickle; chlorine; lead; pH; cadmium; silver; manganese; cyanide; fecal coliform; fluoride; temperature; aluminum; mercury; benzo(a)pyrene; sewage; NVSS; NFR; VSS; NH3N; TPH; priority/nonpriority organics; suspended solids	161 *(37.9%)*	248 *(40.9%)*
Remediation activities	CT, ME, VT, MA, AL, GA, MI, AR, LA, TX, CA, WA, AK	PAHs; VOCs; metals; cobalt; uranium; mercury; PCBs; chlorine; lead; B-M; priority/nonpriority organics; oil; grease; arsenic; iron, pH; manganese; zinc; PCE; 1,1-DCE; Carbon tetrachloride; E. coli; copper; DO; sediment/siltation; DDT; PBBs; dioxin; 1,1,2-TCA; 1,2-DCA; benzo(a)pyrene; hexachlorobenzene; chloride; toxicity; cadmium; petroleum products; bark/wood debris; pulp residue	111 *(26.1%)*	144 *(23.7)*
Watershed Restoration Plan[b]	KS, WA, AK, PA	Atrazine; temperature; fecal coliform; DO; pH; sediment; nutrients; siltation; metals; habitat alteration	46 *(10.8%)*	72 *(11.9%)*
Local ordinance for nonpoint sources[c]	WA	Fecal coliform	33 *(7.8%)*	33 *(5.4%)*
CSO consent order	NY	Pathogens; floatables; odor	21 *(5.0%)*	25 *(4.1%)*
Point source permits & natural attenuation	ME	Dioxin	19 *(4.5%)*	19 *(3.1%)*
Chemical bans & natural attenuation	TX	Chlordane; dieldrin; heptachlor epoxide	15 *(3.5%)*	41 *(6.8%)*
FERC license/401 certification	VT, MI, OR	DO; temperature; biological criteria; total dissolved gas	9 *(2.1%)*	10 *(1.6%)*

General Control Type	States	Pollutants/Criteria Affected	No. of Impaired Waters	No. of WPCs
Source removal	ME, NH, VT, NY	Ammonia; B-M; nitrogen; E. coli; DO	6 *(1.4%)*	7 *(1.2%)*
Remediation & point source permits	CT, ME	Diesel fuel; sulfates; benzene; B-M	2 *(0.5%)*	4 *(0.6%)*
State water right licenses for flow	CA	Salinity; TDS; Chlorides	1 *(0.2%)*	3 *(0.5%)*
State regulation for nonpoint sources[d]	AK	Total aromatic hydrocarbons	1 *(0.2%)*	1 *(0.2%)*
		Total	**425**	**607**

Notes:

B-M	Benthic-macroinvertebrates
BOD	Biological oxygen demand
CSO	Combined sewer overflow
DCA	Dichloroethane
DCE	Dichloroethylene
DO	Dissolved oxygen
DDT	Dichlorodiphenyltrichloroethane
NVSS	Nonvolatile suspended solids
NFR	Non filterable residues
PAH	Polycyclic aromatic hydrocarbon
PBB	Polybrominated biphenyls
PCB	Polychlorinated biphenyl
PCE	Perchloroethylene
TCA	Trichloroethane
TDS	Total dissolved solids
TPH	Total petroleum hydrocarbons
TSS	Total suspended solids
VOC	Volatile organic compound
VSS	Volatile suspended solids
WPC	Waterbody-pollutant combination

[a] Missouri point source permit Category 4bs (Hoke et al, 2009)
[b] Kansas watershed restoration plan Category 4bs for atrazine (Flynn et al, 2009)
[c] Washington local ordinance and pollution identification program (PIC) Category 4bs for fecal coliform (Bresler et al, 2009)
[d] Alaska state regulations and buy-back program for outboard motors Category 4b for total aromatic hydrocarbons (Stevens et al, 2009)

The survey showed that point source permits were the leading control type used to support Category 4b assignments based on the number of impaired waters (38%) and number of waterbody-pollutant combinations (41%) (see Table 1). An example of how point source permits are used to support Category 4b assignments has been described for Missouri (Hoke et al., 2009). The survey however, showed that a variety of other control types have also been used. Examples of some of these controls types have been described for the following:

- State regulations combined with an incentive-based buy-back program for outboard motors to address nonpoint source petroleum impaired waters in the Kenai River, Alaska (Steven et al., 2009)
- Local ordinances combined with a technical assistance and incentive-based payment program to address nonpoint source pathogen impaired waters in Kitsap County, Washington (Bresler et al., 2009)
- Watershed restoration plan combined with a voluntary and incentive-based payment programs to address nonpoint source atrazine impaired waters in the Little Arkansas River subbasin, Kansas (Flynn et al., 2009)

Additional examples of Category 4b assignments that involve more than point source permits may be identified through further study of the Category 4b assignments provided in the Appendix.

CONCLUSIONS

Although not widely used by States, results of this survey show that States continue to use alternatives to TMDLs that qualify for Category 4b. Given the emphasis on implementation for waters in Category 4b, tracking the water quality response of these waters should provide valuable information about the effectiveness of the controls being implemented, which in turn will assist with the design of implementation measures for impaired waters addressed in the future through a Category 4b or TMDL approach.

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APPENDIX
IMPAIRED WATERS SUCCESSFULLY ASSIGNED TO CATEGORY 4B
SURVEY RESULTS FROM MAY 2009

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
EPA REGION 1			
Connecticut	Unnamed tributary and intermittent stream to Cedar Swampe Brook	PAHs, VOCs, metals	Remediation
	Ruby Lake outlet stream-01	Diesel Fuel, Sulfates	Remediation & point source permit
	Perkins Brook-01	Cobalt, Uranium	Remediation
	Unnamed trib to Oyster River (Milford)-02	Mercury	Remediation
	Eightmile River (Southington) - 01	PCBs	Remediation
	Housatonic River-03	PCBs	Remediation
	Housatonic River-04	PCBs	Remediation
	Housatonic River-05	PCBs	Remediation
	Housatonic River-06	PCBs	Remediation
	Housatonic River-07	PCBs	Remediation
	Lillinonah Lake (Newton/Southbury/Bridgewater/Brookfield)	PCBs	Remediation
	Zoar Lake (Monroe/Newton/Oxford/Southbury)	PCBs	Remediation
	Zoar Lake (Newton/Southbury)	PCBs	Remediation
	Housatonic Lake (Shelton/Derby/Seymour/Oxford/Monroe)	PCBs	Remediation
	Mill River (Fairfield/Easton) - 02b	Chlorine	Remediation
	LIS WB Inner - Mill River, Fairfield	Lead	Remediation
Maine	Little Madawaska River and tributaries	B-M, PCBs	Remediation
	Greenlaw Stream	PCBs	Remediation
	Penobscot R. main stem, from Cambolasse Str to Piscataquis R	Dioxin	Point source permit/natural attenuation
	Cold Stream (Enfield) downstream of hatchery	B-M	Point source permit
	Penobscot River (ME0102000506_232R)	Dioxin	Point source permit/natural attenuation
	Penobscot River (ME0102000509_233R_01)	Dioxin	Point source permit/natural attenuation
	Penobscot Roiver (ME0102000513_234R02)	Dioxin	Point source permit/natural attenuation
	Mill Stream (Embden)	B-M	Point source permit
	Unnamed Stream trib to Sandy R (Avon-Dunham)	B-M	Point source permit
	Kennebec River (ME0103000306_338R_04)	Dioxin	Point source permit/natural attenuation
	Kennebec River (ME0103000306_339R_02)	Dioxin	Point source permit/natural attenuation
	East Branch Sebasticook River Corundel Pd to Sebasticook L	Benzene, B-M	Remediation and point source permit
	Martin Stream (Dixmont)	Ammonia, B-M	Source removal
	Kennebec River (ME0103000312_339R_01)	Dioxin	Point source permit/natural attenuation
	Kennebec River (ME0103000312_340R_01)	Dioxin	Point source permit/natural attenuation
	Merrymeeting Bay	Dioxin	Point source permit/natural attenuation
	Androscoggin River (ME0104000201_421R)	Dioxin	Point source permit/natural attenuation
	Androscoggin River (ME0104000202_421R)	Dioxin	Point source permit/natural attenuation

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
	Androscoggin River (ME0104000204_421R)	Dioxin	Point source permit/natural attenuation
	Androscoggin River (ME0104000204_422R)	Dioxin	Point source permit/natural attenuation
	Androscoggin River (ME0104000205_422R)	Dioxin	Point source permit/natural attenuation
	Androscoggin River (ME0104000206_423R)	Dioxin	Point source permit/natural attenuation
	Androscoggin River (ME0104000206_423R01)	Dioxin	Point source permit/natural attenuation
	House/Lively Brook	Nitrogen	Source removal
	Androscoggin River (ME0104000208_424R)	Dioxin	Point source permit/natural attenuation
	Androscoggin River (ME0104000210_425R_01)	Dioxin	Point source permit/natural attenuation
	Androscoggin River (ME0104000210_426R)	Dioxin	Point source permit/natural attenuation
	Dennys River	PCBs	Remediation
	Sheepscot River below Sheepscot L	DO	Point source permit
	Mile Brook (Casco)	B-M	Point source permit
	Ogunquit River	DO	Point source permit
	Goosefare Brook	DO	Point source permit
	Medomak R. Estuary	DO	Point source permit
	St. George R. Estuary (DMR Area 27)	DO	Point source permit
	Penobscot River Estuary	Dioxin	Point source permit/natural attenuation
New Hampshire	Androscoggin River, IMP (NHIMP400010606-03)	E. coli	Source removal
	Androscoggin River, IMP (NHRIV-400010606-10)	E. coli	Source removal
Rhode Island	Mt. Hope Bay (RI0007032E-01A)	Thermal Modifications	Point source permit
	Mt. Hope Bay (RI0007032E-01B)	Thermal Modifications	Point source permit
	Mt. Hope Bay (RI0007032E-01C)	Thermal Modifications	Point source permit
	Mt. Hope Bay (RI0007032E-01D)	Thermal Modifications	Point source permit
Vermont	Hoosic River, Lowest 2 Miles in VT	Phosphorus	Point source permit
	Burlington Bay - Lake Champlain - Pine Street Barge Canal (Burlington)	Priority/Nonpriority Organics, Metals, Oil, Grease, PCBs	Remediation
	Jay Branch, RM 8.3 Upstream 1.9 Miles & Jay Branch Tributary #9	Sediment	Point source permit
	Lower Lamoille River from Clarks Falls Dam to Route 2 Bridge	DO	FERC license/401 certification
	Unnamed Trib to Winooski River	Arsenic, Iron	Remediation
	Muddy Brook	Iron	Remediation
	Trib (#23) to Stevens Br, below Williamstown WWTF Outfall	Nutrients	Point source permit
	Black River Below Springfield WWTF	Nutrients	Point source permit
	No. Branch Ball MTN Brook, Stratton Lake to Kidder Brook	Manganese	Remediation
	Lower Deerfield River below Harriman Reservoir	Temperature	FERC license/401 certification
	Moose River Below East St. Johnsbury Village	E. Coli	Source removal
	Poultney River	E. Coli	Point source permit
	Dog River below Northfield WWTF	Copper	Point source permit
	Hoosic River, below Pownel WWTF	E. Coli	Point source permit
EPA REGION 2			
New York	Susquehanna River, Main Stem	Pathogens	CSO Consent Order
	Minor Tribs to Middle Hoosic River	DO	Source removal
	Hallocks Mill Brook, Lower	Ammonia, DO	Point source permit
	Coney Island Creek	Floatables	CSO Consent Order
	Gowanus Canal	Floatables, Odor	CSO Consent Order

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
	East River, Lower	Floatables	CSO Consent Order
	Newtown Creek and tidal tribs	Floatables	CSO Consent Order
	East River, Upper (1702-0010)	Floatables	CSO Consent Order
	East River, Upper (1702-0032)	Floatables	CSO Consent Order
	Harlem River	Floatables	CSO Consent Order
	Bronx River, Lower	Floatables	CSO Consent Order
	Bronx River, Middle, and tribs	Floatables	CSO Consent Order
	Westchester Creek	Floatables	CSO Consent Order
	Flushing Creek/Bay	Floatables	CSO Consent Order
	Alley Creek/Little Neck Bay Trib	Floatables	CSO Consent Order
	Hutchinson River, Lower and tribs	Floatables, Odor	CSO Consent Order
	Jamaica Bay, Eastern, and tribs (Queens)	Floatables	CSO Consent Order
	Thurston Basin	Floatables	CSO Consent Order
	Bergen Basin	Floatables	CSO Consent Order
	Spring Creek and tribs	Floatables	CSO Consent Order
	Hendrix Creek	Floatables, Odor	CSO Consent Order
	Paerdegat Basin	Floatables, Odor	CSO Consent Order
	Mill Basin and tidal tribs	Floatables	CSO Consent Order
EPA REGION 3			
Virginia	Duncan Run	Ammonia, Chloride	Point source permit
	South Fork Catoctin Creek-UT	Copper	Point source permit
	Pine Hill Creek, UT	Copper, Zinc	Point source permit
	Monroe Bay	Chloride, ammonia, TN, TP	Point source permit
	Shenandoah River X-Trib	Ammonia	Point source permit
	Roseville Run	Ammonia	Point source permit
	Hogue Creek UT	Ammonia-N	Point source permit
	SF Shenandoah River	TRC	Point source permit
	Meadow Brook	Ammonia, TSS	Point source permit
	West Strait Creek	Ammonia	Point source permit
	War Branch	Ammonia	Point source permit
	Crooked Run UT	Ammonia	Point source permit
	NF Shenandoah River UT	Ammonia	Point source permit
	East Hawksbill Creek UT	Ammonia	Point source permit
	NF Shenandoah River	Tributylin, CBOD5, Ammonia	Point source permit
	Cooks Creeks	TSS	Point source permit
	SF Appomattox River	Zinc	Point source permit
	Cedar Creek UT	TRC, CBOD5, DO, Ammonia-N	Point source permit
	James River	Whole Effluent Toxicity	Point source permit
	Bailey Creek	DO	Point source permit
	Linkswiler Branch	Ammonia	Point source permit
	Little River UT	Ammonia, TKN	Point source permit
	Cabin Creek	DO	Point source permit
	Maury River	TRC, Ammonia	Point source permit
	Moores Creek X-Trib	Ammonia, Benzene, BOD, Toluene, Xylenes	Point source permit
	Appomattox River	Copper	Point source permit
	Pond Hollow	Nickle, Zinc, Copper	Point source permit
	Whispering Creek, UT	Copper, Zinc	Point source permit
	Beaverdam Creek	Chlorine	Point source permit
	Carroll Creek UT	Copper	Point source permit
	Hunters Branch UT	Ammonia, Copper, Zinc	Point source permit
	Beaver Creek Reservoir UT	Copper, lead, zinc	Point source permit
	Totier Creek Reservoir	Zinc	Point source permit
	Oliver Creek UT	Copper	Point source permit
	Southern Branch Elizabeth River	Zinc	Point source permit

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
	Pescara Creek to Eastern Branch, Elizabeth River	Copper, Zinc	Point source permit
	James River	Chlorine, Copper, Zinc, Ammonia	Point source permit
	Almond Creek UT	Lead, Zinc	Point source permit
	Eastern Branch, Elizabeth River	Copper, Zinc	Point source permit
	Dark Swamp UT	Ammonia, Zinc, Copper	Point source permit
	Carter's Creek	pH, ammonia	Point source permit
	Cabin Branch	Copper, Zinc	Point source permit
	Garland's Millpond UT	Ammonia, Cadmium, silver, TN, TP, copper	Point source permit
	Ruin Branch, Cat Point Creek	Copper, Zinc	Point source permit
	Muddy Creek UT	Copper	Point source permit
	Rapidan River	Copper	Point source permit
	Mattox Creek UT	Ammonia	Point source permit
	Coleman Creek	Tributylin, Copper	Point source permit
	Kerr Reservoir	Toxicity	Point source permit
	Twittys Creek	Copper	Point source permit
	Storey Creek	Nickle, Zinc	Point source permit
	Dockery Creek UT	Chloride	Point source permit
	Roanoke (Staunton) River	Manganese	Point source permit
	Lick Branch	Ammonia	Point source permit
	Stewart Creek	Ammonia	Point source permit
	Bradley Creek UT	Ammonia	Point source permit
	Molleys Creek	Ammonia	Point source permit
	Caldwells Creek	Copper	Point source permit
	Falling Creek	Toxicity, Copper	Point source permit
	Nottoway River	Ammonia	Point source permit
	Blackwater River	Copper, Silver	Point source permit
	Lick Creek UT	Ammonia	Point source permit
	Big Moccasin Creek	Ammonia	Point source permit
	Beaverdam Swamp	Chlorine	Point source permit
	Indian Creek UT	Copper, Zinc	Point source permit
	Little Mosquito Creek	Copper	Point source permit
	UT to Brick Kiln Creek	Copper, Zinc	Point source permit
	Dragon Swamp, UT	Ammonia	Point source permit
	Cockerell Creek	Ammonia, Cyanide, Fecal coliform, TP, Copper, Silver	Point source permit
	Chesapeake Bay	TP	Point source permit
	North Anna river, UT	Chlorine	Point source permit
	South River-UT	Copper, Zinc	Point source permit
	Mechumps Creek	Copper, Zinc, Ammonia, Toxicity	Point source permit
	Peak Creek	Zinc	Point source permit
	New River	Toxicity	Point source permit
West Virginia	Pats Branch	Fluoride	Point source permit
	Stony River	Ammonia, CAN-biological, Temperature	Point source permit
	Fourmile Run	Aluminum, Ammonia	Point source permit
Pennsylvania	North Branch Calkins Creek	Nutrients, Siltation	Watershed restoration plan
	Hunters Run	DO	Point source permit
	Laurel Run	DO	Watershed restoration plan
	Schuykill River	DO	Point source permit
	Fishing Creek	DO	Point source permit
	Frankstown Branch Juniata River	Nonpriority/Priority Organics	Point source permit
	Conneauttee Creek	Chlorine	Point source permit
	Bear Creek	Nutrients	Point source permit
	Clement Run	Metals	Watershed restoration plan
	Redbank Creek	Nutrients, metals, pH	Watershed restoration plan

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
	Sandy Lick Creek	Suspended solids, Ammonia	Point source permit
	Solider Run	Metals, pH	Remediation
	South Branch Bear Creek	Nutrients	Point source permit
	Little Paint Creek	Oil and grease	Remediation
	Buffalo Creek	Nutrients	Point source permit
	Opossum Run	DO	Point source permit
	Shenango River	Ammonia	Point source permit
	Shenango River	Habitat alternation	Watershed restoration plan
	Bonar Creek	DO	Point source permit
Mayland	PATMH-Patapsco River Mesohaline	Nickel, Copper, Mercury, Cyanide	Point source permit
	Georges Creek	pH	Remediation
	PAXMH-Lower Patuxent River Mesohaline (Golden Beach area [W6])	PAHs	Remediation
	PAXMH-Lower Patuxent River Mesohaline (Golden Beach area [W4])	PAHs	Remediation
Delaware	Buntings Branch	Nutrients	Point source permit
EPA REGION 4			
Alabama	Five Mile Creek (Hilda confirming)	Ammonia, Carbonaceous BOD, Benzo(a)pyrene (PAHs), Cyanide, Zinc	Point source permit
	Dunham Creek (Hilda confirming)	Zinc	Remediation
Georgia	Suwanee Creek	Toxicity	Point source permit
	Woodall Creek	PCE; 1,1-DCE	Remediation
	Tributary to Jobs Creek	PCE	Remediation
	Unnamed Tributary to Consauga River	Carbon Tetrachloride	Remediation
North Carolina	Trent River	DO	Point source permit
	Roanoke Sound	Enterrococcus	Point source permit
	Mackey Creek	Effluent toxicity	Point source permit
	Deep River	Chlorophyll a	Point source permit
	Northeast Cape Fear River	Chlorides	Point source permit
	West Buffalo Creek	Nutrients	Point source permit
EPA REGION 5			
Indiana	Wabash River - Cayuga Gen Sta to Mill Cr.	Thermal	Point source permit
	Wabash River - Mill Cr. to below Ltl. Vermillion R.	Thermal	Point source permit
	Wabash River	Thermal	Point source permit
	Wabash River - Wabash Gen Sta. to Lost Cr.	Thermal	Point source permit
	Turtle Creek Reservoir	Thermal, IBC	Point source permit
	Salt Fork Creek	Chlorides, IBC	Point source permit
	Camp Ground Branch	Chlorides, IBC	Point source permit
Michigan	Mineral River (includes Portal Creek)	Copper	Remediation
	Powder Mill Creek-Black river (includes Powder Mill Creek)	E coli	Remediation
	Torch Lake (in vicinity of Hubbell and Lake Linden)	Copper	Remediation
	Maple Creek-South Brach Black River (includes Merriam Lake Outlet, Bangor Impoundment, Schoool Section Lake Outlet, Souith Branch Black River, and nnamed Tributaries to South Branch)	PCBs	Remediation
	Cedar Creek-South Branch Black River (includes South Branch Black River and Unnamed Tributaries to South Branch Black River)	PCBs	Remediation
	South Branch Black River (includes south Branch Black river and	PCBs	Remediation

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
	Unnamed Tributaries to South Branch Black River)		
	Black River (includes Black River)	PCBs	Remediation
	Portage Creek (includes Portage Creek downstream of Monarch Pond to the Klamazoo River confluence, including Bryant Mill Pond)	PCBs	Remediation
	Portage Creek (includes Portage Creek)	PCBs	Remediation
	Headwaters Little Rabbit River (includes Red Run)	DO; sediment/siltation	Remediation
	Pentwater River (includes Pentwater River from Hart Lake downstream to 72nd Avenue)	DO; Temperature	FERC license/401 certification
	Crooked Lake	Copper; PAH; Zinc	Remediation
	Croton Dam Pond - Muskegon River (includes Muskegon River from Hardy Dam downstream 1 mile)	DO	FERC license/401 certification
	Penoyer Creek-Muskegon River (includes Muskegon River from Croton dam downstream 1 mile)	DO	FERC license/401 certification
	Cedar River-Intermediate river (includes unnamed tributary to Cedar River)	Copper	Remediation
	Manistique River	PCBs	Remediation
	Bullock Creek (includes Bullock Creek, Duncan Creek, Kneeland Drain, and Unnamed Tributaries to Bullock Creek)	PCBs	Remediation
	Sarle Drain-Tittabawassee River (includes Lingle drain, Sarle Drain, Shaffner and Major drained Tittabawassee River	PCBs	Remediation
	Tittabawassee River (includes Tittabawasee River)	PCBs	Remediation
	Wolf Creek (includes unamed tributary to Wolf Creek)	Mercury	Remediation
	Headwaters Bush Creek (includes Bush Creek, Rook Drain, Unnamed tributaries to Bush Creek, and Unnamed tributaries to Rook Drain)	DDT; PBBs	Remediation
	Bush Creek (includes Bush Creek, Taylor Drain, Unamed tributaries to Bush Creek, and Unnamed tributaries to Taylor drain	DDT; PBBs	Remediation
	Sugar Creek-Pine River (includes Pine River)	DDT; PBBs	Remediation
	Sugar Creek-Pine River (St. Louis Impoundment of Pine river in the vicinity of St. Louis)	DDT; PBBs	Remediation
	Pine River (Pine River and Sucker Creek)	DDT; PBBs	Remediation
	Marion and Genoa Drain-South Shiawasee River (includes Marion and Genoa drained South Branch Shiawasee River)	PCBs	Remediation
	Marion and Genoa Drain-South Shiawasee River (inclued Marion and Genoa Drain)	PCBs	Remediation
	Sprague Creek (includes Sprague Creek)	PCBs	Remediation
	Cook Lake-South Branch Shiwasee River (includes South Branch Shiawasee River)	PCBs	Remediation
	Bogue Creek	PCBs	Remediation
	South Branch Shiawasee River	PCBs	Remediation

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
	Byron Millpond-Shiwasee River	PCBs	Remediation
	Kanause Lake Drain - Shiawasee River	PCBs	Remediation
	Scribner Drain-Shiawasee River (included Maple River and Shiawasee River)	PCBs	Remediation
	Scribner Drain-Shiawasee River (includes Scribner Drain and Unnamed Tributaries to Scribner Drain)	PCBs	Remediation
	Osburn Drain-Shiawasee River	PCBs	Remediation
	Sawyer Drain - Shiawasee River (includes unnamed tributary to Shiawasee River)	PCBs	Remediation
	Sawyer Drain - Shiawasee River (includes Shiawasee River)	PCBs	Remediation
	Mickels Creek-Shiawasee River (includes Shiawasee River)	PCBs	Remediation
	Deer Creek-Shiawasee River (included Shiawasee River)	PCBs	Remediation
	Brady Creek-Bad River (included Bad River and Brady Creek)	PCBs	Remediation
	Limbocker Creek (included Limbocker Creek)	PCBs	Remediation
	Olney Drain-South fork Bad River (includesSouth Fork Bad River)	PCBs	Remediation
	Lamb Creek (includes Griffus Creek and Lamb Creek)	PCBs	Remediation
	Shad Creek-Bad River (includes Bad River and Shad Creek)	PCBs	Remediation
	South Fork Bad River (includes South Fork Bad River)	PCBs	Remediation
	Bad River (includes Bad River, Eagle Creek, Little Eagle Creek, Shiawasee River, Soap Run and South fork Bad River)	PCBs	Remediation
	Shiawasee River (included Shiawasee River)	PCBs	Remediation
	Shiawasee River (included Shiawasee River)	PCBs	Remediation
	Cole Creek-Cass River (includes Cass River)	PCBs	Remediation
	Cass River (includes Cass River)	PCBs	Remediation
	Cass River (includes Cass River)	PCBs	Remediation
	Rousch Drain-Cheboyganing Creek (includes Cheboygaining Creek, Richbille Drain, Rusch Drain, Sheboygan Drain, Tinglan Drain, Unnamed tributaries to Cheboyganing Creek)	PCBs	Remediation
	Blumfield Creek (included Blumfield creek, Cool Creek, etc.)	PCBs	Remediation
	Cheboyganing Creek (includes unamed tributaries to Weaver Drain and Weaver Drain)	PCBs	Remediation
	Crow Island-Saginaw River (included Saginaw River and unnamed Tributaries to Saginaw River)	PCBs	Remediation
	Kichville Drain (includes Kochville Drain,etc.)	PCBs	Remediation
	Dutch Creek (includes Armon Drain, Branch Number three, etc.)	PCBs	Remediation
	Saginaw River (includes Saginaw River)	PCBs	Remediation
	Saginaw River (includes Saginaw River and unammed tribs to Saginaw	PCBs	Remediation

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
	River)		
	Saginaw Bay (included Bay City Drinking Water CAZ New Intake)	nutrients	Point source permit
	Saginaw Bay (includes Bay City Drinking Water CAZ old intake)	nutrients	Point source permit
	Newburgh Lake (Middle River Roughe impoundment in the vicinity of Plymouth	Mercury; PCB	Remediation
	Huntington Creek - Frontal Lake Erie	PCBs	Remediation
	Belleville Lake-Huron River (includes Willow Run Drain)	PCBs	Remediation
	Covell Drain-Bean Creek (includes Medina Drain)	Sewage; DO	Point source permit
EPA REGION 6			
Arkansas	Bayou Meto	Dioxin	Remediation
	Lake Duprey	Dioxin	Remediation
Louisiana	Bayou Olsen	1,1,2-TCA; 1,2-DCA; Chloroform	Remediation
	Bayou Bonfouca-Headwaters to La. Hwy. 433	Benzo(a)pyrene	Remediation
	Bayou Bonfouca-La. Hwy. 433 to Lake Pontchartrain (Estuarine)	Benzo(a)pyrene	Remediation
	Bayou Trepagnier-Norco to Bayou Labranche (Scenic) (Estuarine)	Oil and grease	Remediation
	Devil's Swamp Lake and Bayou Baton Rouge	Hexachlorobenzene; PCBs; oil and grease	Remediation
	Capitol Lake	PCBs	Remediation
	Sibley Lake	PCBs	Remediation
Texas	Mid Cibolo Creek	DO	Point source permit
	Houston Ship Channel Tidal (1006_01)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel Tidal (1006_02)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel Tidal (1006_03)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel Tidal (1006_04)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel Tidal (1006_05)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel/Buffalo Bayou Tidal (1007_01)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel/Buffalo Bayou Tidal (1007_02)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel/Buffalo Bayou Tidal (1007_03)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel/Buffalo Bayou Tidal (1007_04)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel/Buffalo Bayou Tidal (1007_05)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel/Buffalo Bayou Tidal (1007_06)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel/Buffalo Bayou Tidal (1007_07)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Houston Ship Channel/Buffalo Bayou Tidal (1007_08)	Chlordane, Dieldrin, Heptachlor epoxide	Chemical ban/natural attenuation
	Upper Trinity River (0805_02)	Chlordane	Chemical ban/natural attenuation
	Upper Trinity River (0805_06)	Chlordane	Chemical ban/natural attenuation
	E.V Spense Reservoir	Chloride	Remediation
	Lavaca Bay Ship Channel	Mercury	Remediation
EPA REGION 7			
Nebraska	Shonka Ditch	Ammonia	Point source permit
	Lodgepole Creek	Aquatic community assessment	Point source permit
Kansas	Republican River below Milford Dam	Ammonia, fecal coliform	Point source permit
	Salt Creek	Ammonia	Point source permit

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
	Doyle Creek	Fecal coliform	Point source permit
	Banner Creek	Ammonia	Point source permit
	Upper Delware River (Cedar Creek)	Ammonia, DO, Fecal coliform	Point source permit
	Hog Creek	Ammonia	Point source permit
	Turkey Creek segment 11	Atrazine	Watershed Restoration Plan
	Turkey Creek segment 12	Atrazine	Watershed Restoration Plan
	Dry Turkey Creek segment 13	Atrazine	Watershed Restoration Plan
	Running Turkey Creek segment 25	Atrazine	Watershed Restoration Plan
	Bull Creek segment 24	Atrazine	Watershed Restoration Plan
	Emma Creek (Segment 6)	Atrazine	Watershed Restoration Plan
	Emma Creek, Middle (Segment 7)	Atrazine	Watershed Restoration Plan
	Emma Creek, West (Segment 8)	Atrazine	Watershed Restoration Plan
	Sand Creek (Segment 14)	Atrazine	Watershed Restoration Plan
	Mud Creek (Segment 16)	Atrazine	Watershed Restoration Plan
	Beaver Creek (Segment 26)	Atrazine	Watershed Restoration Plan
Missouri	Bynum Creek	NVSS	Point source permit
	Dog Creek	NVSS	Point source permit
	Dry Auglaize Creek	Unknown	Point source permit
	East Brush Creek	BOD, NFR, Nutrients	Point source permit
	Elkhord Creek	BOD, VSS	Point source permit
	Gabriel Creek	Ammonia, DO, BOD, NFR	Point source permit
	Horseshoe Creek	NH3N	Point source permit
	Little Beaver Creek	VSS	Point source permit
	Little Lindley Creek	BOD, VSS	Point source permit
	Road Oak Creek	VSS	Point source permit
	Red Oak Creek Tributary	VSS	Point source permit
	Rocky Branch	BOD	Point source permit
	Stockton Branch	VSS	Point source permit
	Straight Fork	VSS	Point source permit
	Walnut Creek	BOD, VSS	Point source permit
EPA REGION 9			
California	Stege Marsh	Toxicity	Remediation
	Coyote Creek	Ammonia	Point source permit
	San Jose Creek (Reach 1)	Ammonia	Point source permit
	Aspen Creek	Metals	Remediation
	Bryant Creek	Metals	Remediation
	Leviathan Creek	Metals	Remediation
	Mono Lake	Salinity/TDS/Chlorides	Water right license for flow regulation/modification
	Searles Lake	Total petroleum hydrocarbons	Point source permit
EPA REGION 10			
Oregon	Potter Creek (RM 0-2.7)	Biological criteria	FERC license/401 certification
	North Umpqua River (RM 75-75)	Total Dissolved Gas	FERC license/401 certification
	North Umpqua River (RM 86.9-87.5)	Total Dissolved Gas	FERC license/401 certification
	North Umpqua River (RM 77-78)	Total Dissolved Gas	FERC license/401 certification
	South Umpqua River	Chlroine	Point source permit
	Cow Creek	Chlroine	Point source permit
	North Myrtle Creek	Ammonia	Point source permit
Washington	Entiat River	Temperature	Watershed Restoration Plan
	Sinclair Inlet	PCBs	Remediation
	Yellowjacket Creek (19868)	Temperature	Watershed Restoration Plan
	Yellowjacket Creek (19869)	Temperature	Watershed Restoration Plan
	Dogfish Creek (7633)	Fecal coliform	Local ordinance & PIC Program
	Dogfish Creek (7636)	Fecal coliform	Local ordinance & PIC Program
	Dogfish Creek (7637)	Fecal coliform	Local ordinance & PIC Program
	Dogfish Creek (7639)	Fecal coliform	Local ordinance & PIC Program

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
	Dogfish Creek (7640)	Fecal coliform	Local ordinance & PIC Program
	Dogfish Creek (23695)	Fecal coliform	Local ordinance & PIC Program
	Dogfish Creek (38544)	Fecal coliform	Local ordinance & PIC Program
	Dogfish Creek (53092)	Fecal coliform	Local ordinance & PIC Program
	Gamble Creek	Fecal coliform	Local ordinance & PIC Program
	Gorst Creek	Fecal coliform	Local ordinance & PIC Program
	Martha-John Creek (7651)	Fecal coliform	Local ordinance & PIC Program
	Martha-John Creek (7652)	Fecal coliform	Local ordinance & PIC Program
	Martha-John Creek (7653)	Fecal coliform	Local ordinance & PIC Program
	Burley Creek (10370)	Fecal coliform	Local ordinance & PIC Program
	Burley Creek (10371)	Fecal coliform	Local ordinance & PIC Program
	Burley Creek (10373)	Fecal coliform	Local ordinance & PIC Program
	Burley Creek (10374)	Fecal coliform	Local ordinance & PIC Program
	Burley Creek (53098)	Fecal coliform	Local ordinance & PIC Program
	Burley Creek (53099)	Fecal coliform	Local ordinance & PIC Program
	Bear Creek (10375)	Fecal coliform	Local ordinance & PIC Program
	Bear Creek (10376)	Fecal coliform	Local ordinance & PIC Program
	Purdy Creek (10387)	Fecal coliform	Local ordinance & PIC Program
	Purdy Creek (10389)	Fecal coliform	Local ordinance & PIC Program
	Daniels Creek (53094)	Fecal coliform	Local ordinance & PIC Program
	Daniels Creek (53095)	Fecal coliform	Local ordinance & PIC Program
	Indianola Creek	Fecal coliform	Local ordinance & PIC Program
	Kitsap Creek	Fecal coliform	Local ordinance & PIC Program
	Jump Off Joe Creek	Fecal coliform	Local ordinance & PIC Program
	Kinman Creek	Fecal coliform	Local ordinance & PIC Program
	Enetai Creek (43034)	Fecal coliform	Local ordinance & PIC Program
	Enetai Creek (53101)	Fecal coliform	Local ordinance & PIC Program
	Enetai Creek (53102)	Fecal coliform	Local ordinance & PIC Program
	Lofall Creek	Fecal coliform	Local ordinance & PIC Program
	Deadman Creek (RKM 1.6-3.3)	Temperature	Watershed Restoration Plan
	Deadman Creek (RKM 16.4-18.3)	Temperature	Watershed Restoration Plan
	Deadman Creek, N. Fork	Fecal coliform	Watershed Restoration Plan
	Deadman Creek, S. Fork	Temperature, Fecal coliform	Watershed Restoration Plan
	Tenmile Creek (18835)	Temperature	Watershed Restoration Plan
	Tenmile Creek (18836)	Temperature	Watershed Restoration Plan
	Tenmile Creek (20355)	Temperature	Watershed Restoration Plan
	Tenmile Creek (20356)	Temperature	Watershed Restoration Plan
	Mill Creek	Temperature	Watershed Restoration Plan
	Couse Creek (RKM 0-0.8)	Temperature	Watershed Restoration Plan
	Couse Creek (RKM 7.4-9.5)	Temperature	Watershed Restoration Plan
	Alpowa Creek (40557)	Fecal coliform	Watershed Restoration Plan
	Alpowa Creek (40558)	Fecal coliform	Watershed Restoration Plan
	Alpowa Creek (45991)	Fecal coliform	Watershed Restoration Plan
	Alpowa Creek (47041)	DO	Watershed Restoration Plan
	Alpowa Creek (47042)	DO	Watershed Restoration Plan
	Alpowa Creek (50348)	pH	Watershed Restoration Plan
	Cow Creek (RM 0.9-1.6)	Temperature, Fecal coliform, DO, pH	Watershed Restoration Plan
	Cow Creek (RM 18.2-19.2)	Temperature, Fecal coliform, DO, pH	Watershed Restoration Plan
	Cow Creek (RM 28.9-30.9)	Temperature, Fecal coliform, DO, pH	Watershed Restoration Plan
	Cow Creek (RM 43.2-45.0)	Temperature, Fecal coliform, DO	Watershed Restoration Plan
	Cow Creek (RM 47.1-50.3)	DO, pH	Watershed Restoration Plan
	Cow Creek (RM 5-.3-50.5)	Temperature, Dissolved oxygen	Watershed Restoration Plan
	Cow Creek (RM 60.4-60.9)	Temperature, Fecal coliform, DO, pH	Watershed Restoration Plan
	Cow Creek (RM 72.6-74.6)	Temperature, Fecal coliform, DO, pH	Watershed Restoration Plan
	Cow Creek (RM 74.8-76.9)	Temperature, DO	Watershed Restoration Plan
Alaska	Cabin Creek	Manganese, Arsenic, Iron, Copper,	Remediation

State	Waterbody (Common Name)	Pollutant(s)/Criteria Affected	General Control Type
		Cadmium	
	Kenai River (lower)	Total aromatic hydrocarbons	State requirement and buy-back program for outboard motors
	Exxon Valdez Beaches	Petrolum products	Remediation
	East Port Fredrick	Bark & Wood Debris	Remediation
	Fubar Creek	Sediment	Watershed Restoration Plan
	Ward Cove	Pulp residues, logs, bark and woody debris, sediment, toxicity due to wood decomposition by-products	Remediation

NOTES:

B-M Benthic-macroinvertebrates
BOD Biological oxygen demand
DCA Dichloroethane
CSO Combined sewer overflow
DO Dissolved oxygen
DDT Dichlorodiphenyltrichloroethane
IBC Impaired biotic community
NVSS Nonvolatile suspended solids
NFR Non filterable residues
PAH Polycyclic aromatic hydrocarbon
PBB Polybrominated biphenyls
PCE Perchloroethylene
DCE Dichloroethylene
TCA Trichloroethane
TDS Total dissolved solids
TPH Total petroleum hydrocarbons
TSS Total suspended solids
VOC Volatile organic compound
VSS Volatile suspended solids
WBC Waterbody-pollutant combination

ATTACHMENT

RECOMMENDED STRUCTURE FOR CATEGORY 4B DEMONSTRATIONS

Source: USEPA (2006) *Information Concerning 2008 Clean Water Act Sections 303(d), 305(b), and 314 Integrated Reporting and Listing Decisions.* October 12, 2006. URL: http://www.epa.gov/owow/tmdl.

The purpose of this Attachment is to provide States a recommended structure for addressing EPA's expectations in the 2006 IRG for Category 4b demonstrations. Specifically, States should address the following six elements in their Category 4b demonstrations:

1. Identification of segment and statement of problem causing the impairment;
2. Description of pollution controls and how they will achieve water quality standards;
3. An estimate or projection of the time when WQS will be met;
4. Schedule for implementing pollution controls;
5. Monitoring plan to track effectiveness of pollution controls; and
6. Commitment to revise pollution controls, as necessary.

Additional details for each of the six elements are provided below.

States should submit their Category 4b demonstrations that address each of the six elements with their Section 303(d) list or Integrated Report submission. In general, the State's 4b demonstration should be submitted as a stand-alone document. In situations where data and information for a Category 4b demonstration are contained in existing documents developed under separate programs (e.g., NPDES permit, Superfund Record of Decision), the State should summarize relevant information in the Category 4b demonstration and reference the appropriate supporting documentation that provides that information. The supporting documentation should be included as part of the State's administrative record supporting the Category 4b determination.

1. Identification of Segment and Statement of Problem Causing Impairment

Segment Description

The demonstration should identify the impaired segment, including name, general location in the State, and State-specific location identifier. Also, the segment should be identified/georeferenced using the National Hydrography Dataset (NHD). The assessment information should be transmitted electronically through the Assessment Database (ADB).

Impairment and pollutant causing impairment

The demonstration should identify the applicable water quality standard(s) not supported for each segment and associated pollutant causing the impairment.

Sources of pollutant causing impairment

The demonstration should include a description of the known and likely point, nonpoint, and background (upstream inputs) sources of the pollutant causing the impairment, including the magnitude and locations of the sources. In cases where some portion of the impairment may

result from naturally occurring sources (natural background), the demonstration should include a description of the naturally occurring sources of the pollutant to the impaired segment.

2. Description of Pollution Controls and How They Will Achieve Water Quality Standards

Water quality target

The demonstration should identify a numeric water quality target(s) – a quantitative value used to measure whether or not the applicable water quality standard is attained. Generally, the pollutant of concern and the numeric water quality target are, respectively, the chemical causing the impairment and the numeric criteria for that chemical contained in the water quality standard. The demonstration should express the relationship between any necessary reduction of the pollutant of concern and the attainment of the numeric water quality target.

Occasionally, the pollutant of concern is different from the pollutant that is the subject of the numeric water quality target (e.g., when the pollutant of concern is phosphorous and the numeric water quality target is expressed as dissolved oxygen (DO) criteria). In such cases, the Category 4b demonstration should explain the linkage between the pollutant of concern and the chosen numeric water quality target. In other cases, multiple indicators and associated numeric target values may be needed to interpret an individual water quality standard (e.g., multiple fish habitat indicators to interpret acceptable sediment levels).

In cases where the impairment is based on non-attainment of a narrative (non-numeric) water quality criterion, the Category 4b demonstration should identify one or more appropriate numeric water quality target levels that will be used to evaluate attainment of the narrative water quality criteria. The Category 4b demonstration should also describe the basis for selecting the numeric target levels.

Point and nonpoint source loadings that when implemented will achieve WQS

The demonstration should describe the cause-and-effect relationship between the water quality standard (or numeric water quality target as discussed above) and the identified pollutant sources and, based on this linkage, identify what loadings are acceptable to achieve the water quality standard. The cause-and-effect relationship may be used to determine the loading capacity of the waterbody for the pollutant of concern. However, a loading capacity may not be relevant in all circumstances. For example, a loading capacity would not be relevant in situations where the pollutant source will be completely removed. The demonstration should identify the loading capacity of the segment for the applicable pollutant or describe why determination of the loading capacity is not relevant to ensure that the controls are sufficient to meet applicable water quality standards.

The demonstration should also contain or reference documentation supporting the analysis, including the basis for any assumptions; a discussion of strengths and weaknesses in the analytical process; and results from any water quality modeling or data analysis.

Controls that will achieve WQS

The demonstration should describe the controls already in place, or scheduled for

implementation, that will result in reductions of pollutant loadings to a level that achieves the numeric water quality standard. The demonstration should also describe the basis upon which the State concludes that the controls will result in the necessary reductions.

Description of requirements under which pollution controls will be implemented
The demonstration should describe the basis for concluding that the pollution controls are requirements or why other types of controls already in place may be sufficient, as discussed below.

As discussed in the 2006 IR guidance, EPA will consider a number of factors in evaluating whether a particular set of pollution controls are in fact "requirements" as specified in EPA's regulations, including: (1) authority (local, State, Federal) under which the controls are required and will be implemented with respect to sources contributing to the water quality impairment (examples may include: self-executing State or local regulations, permits, and contracts and grant/funding agreements that require implementation of necessary controls); (2) existing commitments made by the sources to implement the controls (including an analysis of the amount of actual implementation that has already occurred); (3) availability of dedicated funding for the implementation of the controls; and (4) other relevant factors as determined by EPA depending on case-specific circumstances.

Since the overriding objective of the 4b alternative is to promote implementation activities designed to achieve water quality standards in a reasonable period of time, for all of the factors listed above, EPA will evaluate each 4b alternative on a case-by-case basis, including in particular the existence of identifiable consequences for the failure to implement the proposed pollution controls. Depending on the specific situation, "other pollution control requirements" may be requirements other than those based on statutory or regulatory provisions, as long as some combination of the factors listed above are present and will lead to achievement of WQS within a reasonable period of time. For example, established plans of government agencies that require attainment of WQS within a reasonable period of time may qualify even when their components include incentive-based actions by private parties. States may also choose to rely on controls that have already been implemented where there is sufficient certainty that implementation will continue until WQS are achieved and will not be reversed. Because the controls are already in place and achieving progress, EPA may consider such controls to be requirements even if their implementation did not occur pursuant to binding legal authority.

3. Estimate or Projection of Time When WQS Will Be Met

EPA expects that segments impaired by a pollutant but not listed under Section 303(d) based on the implementation of existing control requirements will attain WQS within a reasonable period of time. The demonstration should provide a time estimate by which the controls will result in WQS attainment, including an explanation of the basis for the conclusion.

The demonstration should also describe why the time estimate for the controls to achieve WQS is reasonable. EPA will evaluate on a case-specific basis whether the estimated time for WQS attainment is reasonable. What constitutes a "reasonable time" will vary depending on factors such as the initial severity of the impairment, the cause of the impairment (e.g., point source

discharges, in place sediment fluxes, atmospheric deposition, nonpoint source runoff), riparian condition, channel condition, the nature and behavior of the specific pollutant (e.g., conservative, reactive), the size and complexity of the segment (e.g., a simple first-order stream, a large thermally stratified lake, a density-stratified estuary, and tidally influenced coastal segment), the nature of the control action, cost, public interest, etc.

4. Schedule for Implementing Pollution Controls

The demonstration should describe, as appropriate, the schedule by which the pollution controls will be implemented and/or which controls are already in place.

5. Monitoring Plan to Track Effectiveness of Pollution Controls

The demonstration should include a description of, and schedule for, monitoring milestones to track effectiveness of the pollution controls. The demonstration should describe water quality monitoring that will be performed to determine the combined effectiveness of the pollution controls on ambient water quality. If additional monitoring will be conducted to evaluate the effectiveness of individual pollution controls, EPA encourages States to include a description of these efforts as well. The demonstration should identify how and when assessment results from the monitoring will be reported to the public and EPA.

6. Commitment to Revise Pollution Controls, as Necessary

The demonstration should provide a statement that the State commits to revising the pollution controls, as necessary, if progress towards meeting water quality standards is not being shown. Also, the demonstration should identify how any changes to the pollution controls, and any other element of the original demonstration, will be reported to the public and EPA.