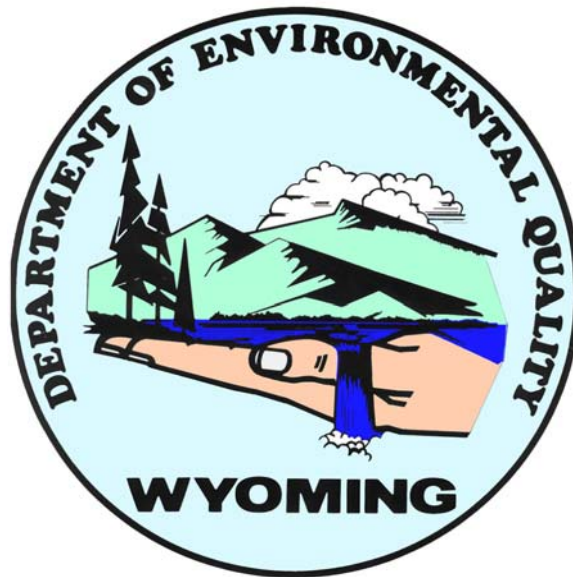


**WYOMING'S METHOD FOR DETERMINING  
WATER QUALITY CONDITION OF SURFACE WATERS  
AND  
TMDL PRIORITIZATION CRITERIA FOR 303(d) LISTED WATERS**



Wyoming Department of Environmental Quality  
Water Quality Division  
Watershed Section

*Wyoming's Method for Determining Water Quality Condition of Surface Water  
and TMDL Prioritization for 303(d) Listed Waters*

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## PREAMBLE

Section 305(b) of the federal Clean Water Act requires states to describe the water quality condition of all their waters, including all designated use determinations. In addition, Section 303(d) requires that the state develop a listing of all waters which do not fully support existing or designated uses and require development of a Total Maximum Daily Load (TMDL). Wyoming is committed to making use support determinations based on scientifically valid, objective and representative data and assessments. United States Environmental Protection Agency (EPA) guidance and the Wyoming Department of Environmental Quality – Water Quality Division (DEQ) policy is to use the same assessment methodology to develop both the 303(d) List and the 305(b) Report. The combined 305(b) Report containing the 303(d) list is referred to as the “Integrated Report”. Generally, a water is deemed to be “non-supporting” of one or more designated uses (“impaired”) if any narrative or numeric criteria are exceeded, or designated uses are shown to be adversely affected by man’s activities. The purpose of this document, referred to as the Assessment Methodology, is to outline the criteria and decision-making processes employed by the DEQ for the purpose of making designated use support determinations about the water quality of surface waters of the state. For further information, contact Mark Conrad at 307-777-5802 or e-mail at [mconra@state.wy.us](mailto:mconra@state.wy.us).

## SURFACE WATER CLASSIFICATION AND DESIGNATED USES

### Surface Water Classification

Chapter 1 of the Wyoming Water Quality Rules and Regulation – Wyoming Surface Water Quality Standards (Chapter 1), states that the objectives of the Wyoming pollution control program are specifically designed *to provide, wherever attainable, the highest possible water quality commensurate with the following uses: agriculture, fisheries, industry, drinking water, recreation, scenic value, aquatic life other than fish, wildlife, and fish consumption.*

This Assessment Methodology was developed based on the classifications and criteria contained in the Chapter 1, which were adopted in 2007.

[http://deq.state.wy.us/wqd/WQDRules/Chapter\\_01.pdf](http://deq.state.wy.us/wqd/WQDRules/Chapter_01.pdf)

Lists of many Wyoming waters and their classifications are contained in Appendix A and Appendix B of Chapter 1. Chapter 1 also includes detailed definitions of the various water classes described in the table below. Table 1 contains the basic surface water classification structure.

Table 1. Surface Water Classification

SURFACE WATER QUALITY CLASSES		
CLASS 1	OUTSTANDING WATERS	
CLASS 2	FISHERIES & DRINKING WATER	
	2AB	Supports game fish and drinking water
	2A	Does not support game fish, but are used for public or domestic drinking water supplies
	2B	Supports game fish but does not support drinking water
	2C	Supports non-game fish, does not support drinking water
	2D	Effluent dependent waters which are known to support fish
CLASS 3	AQUATIC LIFE OTHER THAN FISH	
	3A	Isolated waters and wetlands not supporting fish or drinking water
	3B	Tributary waters including wetlands not supporting fish or drinking water
	3C	Perennial waters without natural quality to support fish or drinking water, but support wetlands
	3D	Effluent dependent waters which are known to support aquatic life other than fish
CLASS 4	AGRICULTURE, INDUSTRY, RECREATION, and WILDLIFE	
	4A	Artificial canals/ditches not known to support fish
	4B	Non-perennial streams with infrequent wetlands or lacks hydrologic potential to support/sustain aquatic life
	4C	Isolated waters that lack potential to support or sustain aquatic life (i.e. effluent dependent ponds)

Surface Water Use Designation

Chapter 1 assigns a set of designated uses to each specific surface water class. This correlation is presented in Table 2.

Table 2. Designated Uses as Related to Specific Surface Water Classes

Water Class	Drinking water	Game Fish	Non-Game Fish	Fish Consumption	Other Aquatic Life	Recreation	Wildlife	Agriculture	Industry	Scenic Value
1*	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	Yes	Yes	Yes	Yes	Yes
2AB	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2A	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
2B	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2C	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
3A	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3B	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3C	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
3D	No	No	No	No	Yes	Yes	Yes	Yes	Yes	Yes
4A	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
4B	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes
4C	No	No	No	No	No	Yes	Yes	Yes	Yes	Yes

“Yes” indicates the use is protected for that Water Class

\* Class 1 waters are not protected for all uses (indicated by an italicized “Yes”) in all circumstances. For example, all waters in the National Parks and Wilderness are Class 1, however, all do not support fisheries or other aquatic life uses (e.g. hot springs, ephemeral waters, wet meadows, etc.). For stormwater permitting, 401 Certification, and water quality assessment purposes, the actual uses on each particular water must be determined independently.

## DATA REQUIREMENTS AND WATER QUALITY CRITERIA FOR USE SUPPORT DETERMINATIONS

### Water Quality Criteria

Chapter 1 contains both numeric and narrative criteria for the protection of designated uses. Numeric criteria set specific quantifiable limits for certain physicochemical parameters. Narrative criteria are expressions describing the necessary water quality for individual or groups of parameters to meet designated uses, such as biological or physical condition. Because criteria are parameter specific, meeting the criterion for any one parameter does not indicate full use support of the designated use because all applicable water quality parameters must be considered for a given use. However, exceeding a numeric criterion for any parameter generally indicates a designated use is not fully supported, unless additional data and information strongly indicate otherwise. All numeric and narrative criteria are documented in Chapter 1 and its appendices.

### Data Requirements

Wyoming is committed to making use support determinations based on scientifically valid data which is representative of actual water quality conditions, collected in an objective manner, and meets all requirements pursuant to Wyoming's "credible data" law.

DEQ is always accepting water quality data and assessments from federal, state and local agencies, and other entities to make use support determinations for the waters of Wyoming. However, it takes considerable time to conduct Quality Assurance/Quality Control (QA/QC) checks, data analysis, and possible field verification. Therefore, in order for a use support determination to be made or changed in Wyoming's Integrated Report, water quality data and assessments (including all QA/QC data) must be submitted to DEQ by July 15 of the preceding odd-number year. Additionally, entities submitting data must provide any additional data or information requested by DEQ in a timely manner.

DEQ will consider additional data submitted during the public comment period for waters which *already have* a use support determination in the Draft Integrated Report. However, because of the time it takes to verify data submitted on unassessed waters, as described above, DEQ typically cannot incorporate such data into the upcoming integrated report if it is not submitted until the public comment period. Additionally, DEQ feels new data that results in a change in a waterbody's use support should be presented to all interested parties for review and possible comment and not just appear in the final version of the report. For those reasons, it may also not be possible to change a use support determination before the Final Integrated Report is published on April 1 of even numbered years. If data submitted during the public comment period cannot be completely analyzed prior to the April 1 deadline, DEQ will use its discretion whether or not to include it in the final integrated report, but will make it a priority for future analysis and inclusion in the subsequent integrated report.

State Law, W.S. §§ 35-11-302(b) (ii), requires that only "credible data" be used in making use-support determinations. "Credible data" is defined in W.S. § 35-11-103(c) (xix), as *scientifically valid chemical, physical and biological monitoring data collected under an accepted sampling and analysis plan including quality control, quality assurance procedures and available historical data*. To help characterize surface water conditions, *considerations of soil, geology,*

*hydrology, geomorphology, climate, stream succession and the influences of man upon the system* are necessary to ensure proper use-support determinations. The only exception to using “credible data” is when *numerical standards [criteria] are exceeded or on ephemeral and intermittent waters where chemical and biological sampling may not be practical or feasible*. In those cases, less than a complete suite of data (chemical, physical and biological) may be used to make a decision on attainment of water quality standards or designated uses. As described in Chapter 1, data must be collected using accepted referenced laboratory and field methods employed by a person who has received specialized training and has field experience in performing such methods, or is under the supervision of a person who has these qualifications.

This document describes how scientifically valid and objective data (that has already met data quality objectives under an approved sampling and analysis plan) is interpreted and evaluated for use support determinations. The intent of this document is not to describe how water quality data should be gathered to be considered valid and meet data quality objectives.

Chapter 1 defines historic data as data which is over five years old. DEQ often considers historic data representative of current water quality conditions, because many water quality conditions remain static or change slowly over time. EPA’s Consolidated Assessment and Listing Methodology (CALM) guidance also recommends using historic data, unless it can be shown that the data are no longer representative of current conditions (US EPA 2002). DEQ will not solely use historical data to make use support decisions. However, if other appropriate data and information, based on a weight of evidence evaluation, supports the use of historical data to represent current water quality conditions, it will be used as part of the decision making process. Historical data may also be used in conjunction with recent data to show trends in water quality.

The primary focus of Wyoming’s monitoring and assessment program revolves around assessing fishable and swimmable uses, similar to the goals of the federal Clean Water Act. Therefore most assessments are based on evaluation of aquatic life, fisheries and contact recreation use support. In some cases, data or other information gathered during the monitoring and assessment process may suggest the need to investigate whether or not other designated uses are supported.

## PROCESS FOR DETERMINING THE WATER QUALITY CONDITION OF SURFACE WATERS OF THE STATE

### Data Interpretation

Not only must data be collected in an objective manner, interpretation of the data must occur in an objective manner, while also considering other pertinent data and information. Chapter 1 requires that use support determinations will be made through an evaluation of “credible data” using a weight of evidence approach based on all applicable narrative and numeric criteria. When warranted, the weight of evidence approach may include the use of other appropriate analytical procedures, statistical tests and/or validation data for determining the representativeness and objectiveness of data.

### Interpretation of Numeric Criteria

A numeric criterion is comprised of a quantifiable unit of measurement, and a duration and frequency of exposure. What constitutes an exceedance of numeric criteria varies for each designated use and is defined in Chapter 1 (e.g., criteria for aquatic life allows for one exceedance of a numeric criterion in 3 years, but criteria for drinking water do not allow for any exceedance of a numeric criterion). As described in the “credible data” law, a complete suite of data is not required to demonstrate a designated use is not fully supported when a numeric criterion is exceeded. Accordingly, a water can be determined to not fully support a designated use based on an exceedance of a single parameter’s criterion even if the data are not representative of all hydrologic and temporal conditions. Generally, numeric criteria exceedances result in a determination of not fully supporting the applicable designated uses(s). However, occasionally there are situations where other data show that the criteria exceedance does not affect the designated use due to other factors. For example, copper can bind with some organic compounds and still pass through the filter used in the analysis of “dissolved copper” and exceed the copper criterion, even though that copper may not be bioavailable, and thus not toxic, to aquatic organisms. In cases such as this, if biological and other data show a healthy aquatic community, a scientifically defensible argument may be made that the water supports its aquatic life use.

When determining that a sampled parameter meets its numeric criterion, the evaluation should ensure that the cumulative data reasonably represents all hydrologic conditions and other factors which affect that parameter. For example, water temperature may be elevated during summer compared to other times of the year due to a combination of lower flows and higher air temperature; therefore, time of year that the sample is taken can be very critical. Additionally, data must be spatially and temporally representative and include representative data collected when the potential for non-support is greatest, based on a scientifically logical review of available data and considerations of soil, geology, hydrology, geomorphology, climate, stream succession and the influences of man upon the system. An assessment should include a description of the scientific logic used to determine that the data are spatially and temporally representative, including when the potential for non-support is greatest. Often this involves some type of statistical analysis of the data, based on sample variability, and frequency and timing of sample collection. Additionally, even if data show numeric criteria are met for one or more parameters, it does not prove by itself that a designated use is fully supported. In order to show full support for a designated use, a complete suite of “credible data” must be evaluated, and all numeric and narrative criteria must be met, based on a weight of evidence analysis.

#### Interpretation of Narrative Criteria

Narrative criteria express acceptable water quality conditions for parameters that are not easily expressed as simple numeric values such as sediment, biological community structure, undesirable aquatic life, etc. Where water quality criteria are expressed in narrative terms, “credible data” will include data and information that documents whether the water is in its natural range of water quality conditions for a given chemical, physical or biological parameter. Because narrative criteria do not have a specific threshold value, there is a greater “burden of proof” to show whether or not a narrative criteria is exceeded. A “burden of proof” can be demonstrated through a weight of evidence assessment approach as described below.

#### Weight of Evidence Assessment

Chapter 1 requires a weight of evidence approach to determine use support. Wyoming's use support determination for each appropriate designated use is based on the system found in Section 3, Volume 2, of EPA's *Guidelines for Preparation of the Comprehensive State Water Quality Assessments, 305(b) Reports and Annual Electronic Updates: Supplement EPA-841-B-97-002B*, and Section IV of EPA's *Guidance for 2006 Assessment, Listing and Reporting Requirements Pursuant to Sections 303(d), 305(b) and 314 of the Clean Water Act*.

Weight of evidence is a rational thought process which incorporates all available data and uses scientific logic to determine which data is most relevant or important, and gives more weight to that data. Weight of evidence is not a cookie cutter approach but requires a clear understanding of how chemical, physical, biological and other factors interrelate. When applying a weight of evidence approach, DEQ will not presumptively favor one type of data over another but will examine a collection of data and information, and apply a relative "weight" or importance to each relevant part according to the specific circumstances. Higher weights are typically given to objective and representative quantifiable measures which directly relate to the water quality condition of concern. For example, if physical degradation is the primary concern, more weight may be given to quantified measurements of bank erosion and channel geomorphology than water chemistry. Likewise, if chemical discharges are the primary concern, more weight may be given to chemical data and biological integrity. Higher weights are also given to parameters which serve as long term indicators of environmental health, such as aquatic macroinvertebrate community structure.

All three water quality categories - chemical, physical and biological - need not show an exceedance in order to determine that a water is impaired. If any one of the three has a parameter that exceeds a criterion, the water could be assessed as impaired after reviewing the weight of evidence of other relevant data. However, in most cases, an exceedance of a criterion in one water quality category will generally correspond with exceedances of criteria in other water quality categories, due to the interrelationships between chemical, physical and biological water quality parameters.

A determination of *attainment* or *non-attainment* is made for each designated use after comparing data with applicable criteria for all parameters. There often is not a clear distinction between attainment and non-attainment of designated uses. In some cases there may be circumstances where obvious stressors or somewhat degraded conditions are present, however use support remains unclear. In general, these waters have an *undetermined* status as the result of limited or conflicting data and/or non-anthropogenic environmental stressors such as drought, wildlife influences or fire. When data is conflicting or too limited to make a use support determination, future monitoring will generally be scheduled. The determination of designated use support is based on the following general guidelines; specific use support guidelines can be found in their respective sections:

#### Attainment

Full Support: Based on a weight of evidence assessment, for all pollutants, no exceedances of numeric criteria within a 3-year period, and no other water quality parameters, physical response indicators, or biological response indicators identify impairment when representatively sampled, including representative sampling when

potential for non-support is greatest, based on review of available data and considerations of soil, geology, hydrology, geomorphology, climate, stream succession and the influences of man upon the system. All other information suggests full use support.

#### Undetermined

Based on a weight of evidence assessment, data do not indicate exceedances of numeric criteria, but are not spatially and/or temporally representative of actual water quality conditions to make a full support determination; data and supporting information are unclear; or obvious stressors are present, however it is unclear if data are beyond the range of natural conditions.

#### Non-attainment

Fully Supporting but Threatened: No data types indicate exceedances of numeric or narrative criteria, but data do show a declining trend in water quality, physical response indicators, or biological response indicators suggesting a condition of non-support is likely to occur in the next two years, based on a weight of evidence assessment.

Not Fully Supporting: Based on a weight of evidence assessment, data and supporting information show use support is outside the natural range of conditions expected for that water, and/or numeric criteria applicable to that designated use are exceeded at least once within a 3-year period.

Regardless of which non attainment category an “impaired water” is placed in - threatened or not fully-supporting - the goals and requirements for that water will be consistently applied according to both the Clean Water Act and DEQ policy, and may be reevaluated as new information becomes available for a more comprehensive determination.

After use support determinations are made for a water, that water is categorized into one of 5 categories, based on EPA guidance for inclusion in the Integrated Report. Those waters that are determined as threatened or not fully supporting one or more designated uses will be categorized as “impaired” and will be placed in Category 4 or 5 as appropriate. Categorization of waters is described below.

### FIVE PART CATEGORIZATION OF WATERS

EPA guidance (U.S. EPA 2005; 2006) asks that all waters of the state be placed into one of five categories of designated use attainment in the Integrated Report. Following is a description of the five designated use attainment categories.

Category 1. All designated uses are supported, no use is threatened. *(As of 2006, Wyoming does not have any waters in this category because the intensive, long-term sampling data does not exist to determine if contact recreation, fish consumption and drinking water uses are always supported.)*

Category 2. Some designated uses are supported, but unknown on others. *(All waters that are assessed as fully supporting some, but not all, of their designated uses are placed in this*

*category. If the aquatic life uses are supported, it is generally assumed that agricultural, industrial, scenic value, fish consumption and wildlife uses are also supported, unless additional information/data suggest otherwise.)*

Category 3. Insufficient data to determine if any designated uses are met. *(All waters in Wyoming that have no data or insufficient data to make a use support determination are in this category by default.)*

Category 4. Water is impaired or threatened, but a Total Maximum Daily Load (TMDL) is not needed.

4A. Impaired waters with TMDLs approved by EPA.

4B. Other required pollution control requirements are expected to address all water-pollutant combinations and attain water quality standards in a reasonable period of time.

4C. Pollution, but not any pollutant, is the sole source of impairment. *(A pollutant is a quantifiable water quality parameter for which a load can be calculated. Examples of pollution could include lack of flow or stream channelization (EPA 2005).)*

Category 5. The 303(d) List of Impaired and Threatened Waters Requiring TMDLs. *(Between 1998 and 2006, Wyoming split the 303(d) List into three tables; beginning in 2008, the 303(d) list will be contained in one table. Table B - Waters with Wyoming Pollutant Discharge Elimination System (WYPDES) Discharge Permits containing current Waste Load Allocations will be eliminated, and Tables A and C will be combined.)*

## INDIVIDUAL DESIGNATED USE SUPPORT DETERMINATION

### Attainment of Aquatic Life Use

#### Numeric Criteria

Physical and chemical data for each parameter with *numeric* water quality criteria specific to aquatic life use are analyzed to determine the degree of “support” of the designated use. An aquatic life criterion is comprised of a physicochemical concentration, a duration and a frequency. The acute criterion equals the highest concentration of a pollutant to which the aquatic species can be exposed for one hour without deleterious effects. Likewise, the chronic criterion equals the highest average concentration of a pollutant to which the aquatic species can be exposed for four days without deleterious effects. Chapter 1 specifies that acute and chronic aquatic life criteria not be exceeded more than once in every 3-year period. In other words, a 4-day average concentration for a parameter should not exceed the chronic criterion more than once in a 3-year period, or a 1-hour average concentration for a parameter should not exceed the acute criterion more than once in a 3-year period to be considered protective of aquatic life. Therefore the duration of a criterion exceedance is very important in making use support decisions. Unless sampling is conducted frequently enough (hourly for comparison with acute criteria or every four days for comparison with chronic criteria), or unless other data or information indicates otherwise, it must be assumed that any single sample represents the water quality condition for a longer time period.

## Narrative Criteria

Aquatic life use support decisions in streams are based on a weight of evidence approach primarily using macroinvertebrate data and quantitative measurements of stream morphology, supplemented with chemical, physical and other ancillary data and information.

Because biological communities are influenced by year-round water quality conditions, biological data is a very good indicator as to whether there have been excursions in chemical water quality parameters. If the biological community is within the range of expected conditions, it is an indicator that there have not been stressors significantly affecting aquatic life use support; therefore, it can be implied that physicochemical parameters with numeric criteria are in full support.

The biological potential for streams is established through a statewide reference monitoring network. Since 1993, DEQ has been gathering macroinvertebrate data on hundreds of streams and rivers to develop a reference database for Wyoming. Human activity in reference site watersheds is considered to be minimal relative to other streams. Based on this reference database, DEQ has developed two quantitative tools it uses to interpret macroinvertebrate data. Following are brief synopses of these tools. Further explanation and information can be found in the cited documents available on the DEQ website.

The first tool is the Wyoming Stream Integrity Index (WSII) which is a regionally-calibrated macroinvertebrate-based multimetric index designed to assess aquatic life use support in Wyoming streams (Hargett and Zumberge 2006). [http://deq.state.wy.us/wqd/watershed/Downloads/Monitoring/The%20Wyoming%20Stream%20Integrity%20Index\\_2006.pdf](http://deq.state.wy.us/wqd/watershed/Downloads/Monitoring/The%20Wyoming%20Stream%20Integrity%20Index_2006.pdf). The WSII is an aggregation of seven individual indices developed for seven bioregions delineated within the State of Wyoming. Index scores for the WSII are calculated by averaging the standardized values of various attributes or metrics (e.g. composition, structure, tolerance, functional guilds) derived from a macroinvertebrate sample. Index scores for sites of unknown biological condition are then compared to expected index scores from an appropriate set of regional reference sites that are minimally or least impacted by human stress. The final output is an index score for each site where higher scores that fall within the range of expected reference conditions imply high biological condition. Based on numeric thresholds, which vary for each bioregion, index scores are codified into one of three narrative macroinvertebrate condition categories of “full-support”, “indeterminate”, and “partial/non-support”. The indeterminate category is a designation that requires the use of additional data and/or information to make a proper macroinvertebrate condition determination. The numeric thresholds for each bioregion are listed in Hargett and Zumberge, 2006.

Wyoming RIVPACS (River InVertebrate Prediction And Classification System) is a statewide macroinvertebrate-based predictive model that provides another tool in the assessment of stream biological condition by comparing the macroinvertebrate taxa observed at a site of unknown biological condition with the indigenous macroinvertebrate taxa expected to occur in the absence of human stress (Hargett et al. 2007; Hargett et al. 2005).

[http://deq.state.wy.us/wqd/watershed/Downloads/Monitoring/RIVPACS%20AGENCY%](http://deq.state.wy.us/wqd/watershed/Downloads/Monitoring/RIVPACS%20AGENCY%20)

[20REPORT.pdf](#). The expected macroinvertebrate taxa are derived from an appropriate set of reference sites that are minimally or least impacted by anthropogenic stress. The deviation of the observed from the expected taxa, known as the O/E value, is a measure of the compositional similarity expressed in units of taxa richness and thus a community level measure of biological condition. O/E values near 1 imply high biological condition while values < 1 imply some degree of biological degradation. O/E values are codified into one of three narrative aquatic life use-support categories where values >0.836 are considered “full-support”, values between 0.662-0.836 are “indeterminate” and values <0.662 are “partial/non-support”.

The results calculated by these macroinvertebrate assessment tools are treated as biological water quality parameters, however they are not numeric criteria, primarily because they have not been through the rule making process, and because the expected scores or thresholds may change as reference information improves. However, because these data and results represent water quality conditions over a multi-year period, they generally carry a strong weight when using the weight of evidence approach for making aquatic life use support determinations. Table 3 outlines how these macroinvertebrate assessment tools are evaluated to determine whether biological narrative criteria are met.

Table 3. Evaluation process for macroinvertebrate data.

	WY RIVPACS Narrative Category			
		Full Support	Indeterminate	Partial/Non-Support
WSII Narrative Category	Full Support	Meets Narrative Criteria	Meets Narrative Criteria	Undetermined
	Indeterminate	Meets Narrative Criteria	Undetermined	Narrative Criteria Exceedance
	Partial/Non-Support	Undetermined	Narrative Criteria Exceedance	Narrative Criteria Exceedance

In addition to analysis of macroinvertebrate data, DEQ evaluates quantitative geomorphology data to interpret habitat and sediment narrative criteria. A naturally stable stream channel will transport its sediment load without aggrading or degrading, and will maintain a stable dimension, pattern and profile (Leupold et al. 1964). Changes in sediment loading will result in predictable changes of pattern, profile and dimension, which directly affect instream habitat (Rosgen 1996). DEQ will not make any use support determinations regarding sediment or physical habitat conditions without quantitative physical measurements of stream morphology.

To determine aquatic life use support, a weight of evidence approach is used which evaluates biological, physical and chemical data along with considerations of soil, geology, hydrology, geomorphology, climate, stream succession and the influences of man upon the system.

**Fully Supporting:** Based on a weight of evidence assessment, all data indicate a functioning, sustainable condition that is not modified beyond the natural range of reference condition, and for each pollutant, no more than one exceedance of its acute or chronic criterion within the last 3-year period, based on grab or composite samples, when sufficient data are available to account for spatial and temporal variability to ensure data are representative of actual water quality conditions.

**Undetermined:** Based on a weight of evidence assessment, for any one pollutant, no more than one exceedance of its acute or chronic criteria within the last 3-year period based on grab or composite samples, but the data are not spatially and/or temporally representative of actual water quality conditions to make a full support determination; or data and supporting information are unclear, not fully representative, or shows obvious stressors, however it is unclear if data are beyond the range of natural conditions.

**Fully Supporting but Threatened:** All data indicate a functioning condition that is not modified beyond the natural range of reference condition. However, one or more components are near the edge of their natural range or are approaching criterion thresholds, and indicate an apparent decline in water quality over time which if such a trend continues, will likely result in a not fully-supporting condition within the next two years, based on a weight of evidence assessment.

**Not Fully Supporting:** Based on a weight of evidence assessment, at least one component of the biological, physical, or chemical data (with an analysis of historical and ancillary data) indicate modification to the aquatic community beyond the natural range of reference condition; and/or for any one pollutant, the acute or chronic criterion is exceeded more than once within a 3-year period.

### Attainment of Fisheries Use

According to Chapter 1, the fisheries use includes water quality, habitat conditions, spawning and nursery areas, and food sources necessary to sustain populations of game and nongame fish. Fisheries protections apply to most Class 1 and Class 2 waters, and are directly dependent on water chemistry, habitat quality, and other ecological factors such as the stability of the food chain. The use of water quality data to evaluate attainment of the fisheries designated uses utilizes both numeric and narrative water quality criteria.

Fish populations and community structure, especially for game fish, are also influenced by stocking rates, stream connectivity, introduced species and fishing pressure, in addition to water quality and habitat quality. Generally, fisheries use support determinations are based on aquatic life use support determinations combined with chemical, physical and/or biological data specific to game and non-game fish.

Surface water classifications and fisheries protections are based in large part on the Wyoming Game and Fish Department (WGFD) Stream and Lake Database. However, in many cases waterbodies may not be represented in that database. The Clean Water Act and Chapter 1 state that waters will be protected to the highest existing use. Therefore, if fish are documented in a water, thus indicating it has a higher fishery use than its current classification, assessments will be made based on that higher fishery use.

Attainment of Recreation Water Use

Assessments of recreation use support are generally based on the applicable numeric *E. coli* bacteria criteria found in Section 27 of Chapter 1. Many strains of *E. coli* are pathogenic and serve as an indicator of the relative amount of fecal contamination in water. The criteria are in place to protect people from fecal based pathogens, whether bacterial, viral or protozoan. Because bacterial populations are highly variable, the *E. coli* criteria are based on a 30-day geometric mean of not less than 5 samples obtained during separate 24 hour periods. The intent of the 30-day geometric mean is to average temporally distributed samples so as to be representative of the entire 30 day period. Although the intent of this document is not to mandate sampling methodology, because *E. coli* concentrations can be so variable in the water column, it is imperative that sampling occurs in well mixed waters.

Wyoming waters are designated as either primary or secondary contact recreation waters. All waters in Table A of the Wyoming Surface Water Classification List are designated for primary contact recreation unless identified as a secondary contact water by a “(s)” notation. Waters not specifically listed in Table A of the Wyoming Surface Water Classification List are designated as secondary contact waters. The following *E. coli* criteria apply:

Table 4. *E. coli* Criteria for Protection of Recreation Water Use

<b>Recreational Use Designation</b>	<b>Season</b>	<b><i>E. Coli</i> Criteria</b>
Primary Contact	May 1 - September 30	Concentrations of <i>E. coli</i> bacteria shall not exceed a geometric mean of 126 organisms per 100 milliliters based on a minimum of not less than 5 samples obtained during separate 24 hour periods for any 30-day period.
Primary Contact	October 1 - April 30	Concentrations of <i>E. coli</i> bacteria shall not exceed a geometric mean of 630 organisms per 100 milliliters based on a minimum of not less than 5 samples obtained during separate 24 hour periods for any 30-day period.
Secondary Contact	All Year	Concentrations of <i>E. coli</i> bacteria shall not exceed a geometric mean of 630 organisms per 100 milliliters based on a minimum of not less than 5 samples obtained during separate 24 hour periods for any 30-day period.

Before an assessment is conducted for contact recreation, a Use Attainability Analysis (UAA) will be conducted to determine whether the water should be designated for primary or secondary contact recreation. This procedure is outlined in the Wyoming Water Quality Standards Implementation Policies.

In order for a water to show full support of its contact recreation use, *E. coli* sampling must be spatially and temporally representative, including representative sampling when potential for non-support is greatest, based on land uses, potential sources, review of available data, and considerations of soil, geology, hydrology, geomorphology, climate, stream succession and the influences of man upon the system. An assessment suggesting full contact recreation use support should provide the scientific logic used to determine that the data are spatially and temporally representative, including when the potential for non-support is greatest. Use support determinations are based on:

Fully Supporting: Based on a weight of evidence assessment, for *E. coli* bacteria, no exceedance in the past three years of the 30-day, five sample geometric mean criterion based on spatially and temporally representative grab samples, including representative sampling when potential for non-support is greatest, based on review of available data and considerations of soil, geology, hydrology, geomorphology, climate, stream succession and the influences of man upon the system.

Undetermined: Based on a weight of evidence assessment, for *E. coli* bacteria, no exceedance in the past three years of the 30-day, five sample geometric mean criterion, but the data are not spatially and/or temporally representative of actual water quality conditions to make a full support determination.

Fully Supporting but Threatened: Based on a weight of evidence assessment, for *E. coli* bacteria, no exceedance in the past three years of the 30-day, five sample geometric mean criterion with declining trend in water quality over time suggesting a condition of non-support is likely to occur in the next two years based on spatially and temporally representative grab samples.

Not Fully Supporting: Based on a weight of evidence assessment, for *E. coli* bacteria, no exceedance in the past three years of the 30-day, five sample geometric mean criterion, based on spatially and temporally representative grab samples.

#### Attainment of Drinking Water Use

DEQ does not have primacy over the drinking water program in the state, and therefore does not extensively monitor surface waters to ascertain whether drinking water uses are supported. Section 18 of Chapter 1 states that the human health criteria listed in Appendix B of Chapter 1 shall not be exceeded in all Class 1 and 2 waters protected for drinking water use. DEQ applies criteria on a 3-year basis to be consistent with other criteria.

Full Support: Based on a weight of evidence assessment, for all pollutants, no exceedances of numeric criteria within a 3-year period, and no other water quality parameters, physical response indicators, or biological response indicators identify impairment when representatively sampled, including representative sampling when potential for non-support is greatest, based on review of available data and considerations of soil, geology, hydrology, geomorphology, climate, stream succession and the influences of man upon the system. All other information suggests full use support.

Undetermined: Based on a weight of evidence assessment, data do not indicate exceedances of numeric criteria, but are not spatially and/or temporally representative of actual water quality conditions to make a full support determination; data and supporting information are unclear; or obvious stressors are present, however it is unclear if data are beyond the range of natural conditions.

Fully Supporting but Threatened: No data types indicate exceedances of numeric or narrative criteria, but data do show a declining trend in water quality, physical response indicators, or biological response indicators will likely result in a not fully-supporting condition within the next two years, based on a weight of evidence assessment.

Not Fully Supporting: Data and supporting information show use support is outside the natural range of conditions expected for that water, and/or numeric criteria are exceeded within a 3-year period, based on a weight of evidence assessment.

### Attainment of Fish Consumption Use

Chapter 1 states that the fish consumption use involves maintaining a level of water quality that will prevent any unpalatable flavor and/or accumulation of harmful substances in fish tissue.

In all Class 1 and 2 waters protected for a fisheries use, the more stringent of human health values for “Fish & Drinking Water” or “Fish Only” (consumption of aquatic organisms) shall not be exceeded. The determination of a water supporting or not supporting fish consumption designated use can be made using human health values for fish consumption in Appendix B of Chapter 1.

In order for DEQ to make the determination that waters do not support fish consumption use, water quality and other applicable data must be reviewed in conjunction with citizen complaints and research data found in the literature.

Full Support: Based on a weight of evidence assessment, for all pollutants, no exceedances of numeric criteria within a 3-year period, and no other water quality parameters, physical response indicators, or biological response indicators identify impairment when representatively sampled, including representative sampling when potential for non-support is greatest, based on review of available data and considerations of soil, geology, hydrology, geomorphology, climate, stream succession and the influences of man upon the system. All other information suggests full use support.

Undetermined: Based on a weight of evidence assessment, data do not indicate exceedances of numeric criteria, but are not spatially and/or temporally representative of actual water quality conditions to make a full support determination; data and supporting information are unclear; or obvious stressors are present, however it is unclear if data are beyond the range of natural conditions.

Fully Supporting but Threatened: No data types indicate exceedances of numeric or narrative criteria, but data do show a declining trend in water quality, physical response indicators, or biological response indicators will likely result in a not fully-supporting condition within the next two years, based on a weight of evidence assessment.

Not Fully Supporting: Data and supporting information show use support is outside the natural range of conditions expected for that water, and/or numeric criteria are exceeded within a 3-year period, based on a weight of evidence assessment.

#### Attainment of Wildlife Water Use

Chapter 1 states that wildlife is a designated use for all classes of water. The wildlife use includes protection of water quality to a level which is safe for contact and consumption by avian and terrestrial wildlife species. There are no numeric criteria in Chapter 1 specific to wildlife protection. All numeric values relating to flora and fauna are specific to aquatic life. Narrative criteria concerning the protections of wildlife use are described in “Interpretation of Other Data and Criteria” below. Unless data or information suggest otherwise, DEQ generally assumes wildlife uses are supported if aquatic life uses are supported. In order for DEQ to make the determination that waters do not support wildlife use based on these narrative criteria, specific water quality data must be reviewed in conjunction with wildlife illness, death, or deformity information from wildlife agencies or wildlife health research data found in the literature.

Full Support: Based on a weight of evidence assessment, no water quality parameters, physical response indicators, or biological response indicators identify impairment when representatively sampled, including representative sampling when potential for non-support is greatest, based on review of available data and considerations of soil, geology, hydrology, geomorphology, climate, stream succession and the influences of man upon the system. All other information suggests full use support.

Undetermined: Based on a weight of evidence assessment, data and supporting information are unclear; or obvious stressors are present, however it is unclear if data are beyond the range of natural conditions.

Fully Supporting but Threatened: No data types indicate exceedances of criteria, but data do indicate a declining trend in water quality, physical response indicators, or biological response indicators will likely result in a not fully-supporting condition within the next two years, based on a weight of evidence assessment.

Not Fully Supporting: Data and supporting information show use support is outside the natural range of conditions expected for that water, based on a weight of evidence assessment.

#### Attainment of Agriculture Water Use.

Section 20 of Chapter 1 states that *all Wyoming surface waters which have the natural water quality potential for use as an agricultural water supply shall be maintained at a quality which allows continued use of such waters for agricultural purposes.* Agriculture is therefore a designated use for all classes of water within the state. Degradation of such waters shall not be of such an extent to cause a measurable decrease in crop or livestock production.

The exact pollution threshold resulting in a measurable decrease in agricultural production is highly crop and animal dependent. After a demonstration of a measurable decrease in crop or livestock production has been made to DEQ, a surface water monitoring plan based on the specific crop or animal affected will be developed. Data from crop and livestock tolerance studies will be utilized to determine the parameter(s) responsible and to set specific limits. Unless data or information suggest otherwise, DEQ generally assumes agricultural uses are supported if aquatic life uses are supported. In order for DEQ to make the determination that waters have been degraded to the point of non-attainment of existing agricultural use, specific livestock and/or crop production data, along with correlating water quality data, must be submitted by the agricultural producer. Those and any other pertinent data will then be reviewed by DEQ in order to make a finding.

Fully Supporting: Based on a weight of evidence assessment, no exceedances of criteria, and no measurable decrease in agricultural production as a result of water quality are indicated by all data types.

Undetermined: Based on a weight of evidence assessment, data do not indicate exceedances of criteria and existing water quality data cannot be used to explain a measured decrease in crop or livestock production.

Fully Supporting but Threatened: No exceedances of criteria for any parameter, but a declining trend in water quality over time suggests a measurable decrease in crop or livestock production will likely result in a not fully-supporting condition within the next two years, based on a weight of evidence assessment.

Not Fully Supporting: At least one parameter is demonstrated to cause a measurable decrease in crop or livestock production, based on a weight of evidence assessment.

#### Attainment of Industrial Water Use

Section 19 of Chapter 1 states that *all Wyoming surface waters which have the natural water quality potential for use as an industrial water supply shall be maintained at a quality which*

*allows continued use of such water for industrial purposes.* Industrial use is therefore a use supported by all water classes in the state.

This section goes on to set the narrative criterion for industrial waters as: *degradation of such waters shall not be of such an extent to cause a measurable increase in raw water treatment costs to the industrial user(s).* Unless data or information suggest otherwise, DEQ generally assumes industrial uses are supported if aquatic life uses are supported. In order for DEQ to make the determination that waters have been degraded to the point of non-attainment of existing industrial use, specific water quality and raw water treatment cost data must be submitted with any other pertinent engineering and economics data to DEQ in order to make a finding.

**Fully Supporting:** Based on a weight of evidence assessment, no exceedances of criteria, and no measurable increase in raw water treatment costs as a result of water quality are indicated by all data types.

**Undetermined:** Based on a weight of evidence assessment, data do not indicate exceedances of criteria and existing water quality data cannot be used to explain an increase in raw water treatment costs.

**Fully Supporting but Threatened:** No exceedances of criteria are indicated by all data types but a declining trend in water quality over time suggests a measurable increase in raw water treatment costs will likely result in a not fully-supporting condition within the next two years, based on a weight of evidence assessment.

**Not Fully Supporting:** At least one parameter is demonstrated to cause a measurable increase in raw water treatment costs, based on a weight of evidence assessment.

#### Attainment of Scenic Value Water Use

Scenic value water use covers all classes of water in the state. Chapter 1 states that *scenic value use involves the aesthetics of the aquatic systems themselves (odor, color, taste, settleable solids, floating solids, suspended solids, and solid waste) and is not necessarily related to general landscape appearance.* Unless data or information suggest otherwise, DEQ generally assumes scenic value uses are supported if aquatic life uses are supported. In order to make a non-supporting determination for scenic value use, the physical and chemical nature of the waters must be documented by DEQ. This documentation could include but is not limited to, photographs, water chemistry data, the physical presence of color-altered materials, and/or citizen's complaint's concerning undesirable taste, sight or odor of waters. Water chemistry data will be compared to literature sources documenting similar conditions.

**Full Support:** Based on a weight of evidence assessment, no water quality parameters, physical response indicators, or biological response indicators identify impairment when representatively sampled, including representative sampling when potential for non-support is greatest, based on review of available data and considerations of soil, geology,

hydrology, geomorphology, climate, stream succession and the influences of man upon the system. All other information suggests full use support.

Undetermined: Based on a weight of evidence assessment, data and supporting information is unclear or obvious stressors are present, however it is unclear if data are beyond the range of natural conditions.

Fully Supporting but Threatened: No data types indicate exceedances of criteria, but data do indicate a declining trend in water quality, physical response indicators, or biological response indicators will likely result in a not fully-supporting condition within the next 2 years, based on a weight of evidence assessment.

Not Fully Supporting: Data and supporting information show use support is outside the natural range of conditions expected for that water, based on a weight of evidence assessment.

## INTERPRETATION OF OTHER DATA AND CRITERIA

### Other Criteria

Chapter 1 has a number of narrative and numeric criteria that can be applied to multiple designated uses. DEQ will apply these criteria, as appropriate, using a weight of evidence approach to determine use support for designated uses. These narrative and numeric criteria include:

- Section 11. Flow Conditions
- Section 12. Protection of Wetlands
- Section 13. Toxic Materials
- Section 14. Dead Animals and Solid Waste
- Section 15. Settleable Solids
- Section 16. Floating and Suspended Solids
- Section 17. Taste, Odor and Color
- Section 22. Radioactive Material
- Section 23. Turbidity
- Section 24. Dissolved Oxygen
- Section 25. Temperature
- Section 26. pH
- Section 28. Undesirable Aquatic Life
- Section 29. Oil and Grease
- Section 30. Total Dissolved Gases
- Section 32. Biological Criteria

### Probability Monitoring

Only a small percentage of the waters in Wyoming can be monitored and assessed due to the time and financial constraints of monitoring over 100,000 miles of streams and hundreds of lakes

in the state. Also, most monitoring is targeted at sites on both ends of the water quality spectrum – either those with suspected water quality problems or those with water quality within expected conditions. Therefore, an estimate of statewide water quality conditions based on the targeted site data would be inaccurate, since those sites are not representative of all the waters in the state.

A conventional way to get an accurate overall estimate of a condition or population (e.g., opinion polls) is with a probability survey. Probability surveys use a statistical approach (similar to opinion polls) to provide a cost-effective, scientifically-defensible alternative to periodically determine the condition of all waters. In a probability survey of water quality, a subset of waters is randomly selected, ensuring the “representativeness” or objective nature of the samples. Based on sampling a subset of all waters, an estimate of the condition of all waters can be made along with a statement about the uncertainty surrounding the estimate (Olsen et al. 1999; Stevens 1997; Stevens and Urqhart 2000).

DEQ began implementing a probability survey in 2004, and will select and sample a minimum of 15 to 20 sites per year using this approach for the foreseeable future. Based on statistical analyses, DEQ has determined that a minimum of 60 sites must be selected through a probability survey, and be sampled and analyzed before estimates of water quality conditions can be made on a statewide basis with an acceptable degree of certainty. Because of the turnaround time of data analysis and interpretation, DEQ expects to have an estimate of overall water quality condition in the state in 2009, along with a statement about the uncertainty surrounding the estimate.

Use support decisions will not be made on specific waters based solely on data gathered in the probability monitoring process. However, as with any type of data collection, if something unusual is noted in the data, further investigation may be conducted.

#### Wetlands

DEQ has not yet developed methodology for determining use support in wetlands. This document will be updated after an assessment methodology has been developed.

#### Drinking Water Source Protection

The source water protection program is not a consideration when making a designated use-support determination. However, when a water has been determined non-supportive for a designated use, source water considerations will be examined. If through the examination it is determined a source water diversion is below the impaired water, then the impaired water will be listed as high priority for development of a TMDL. See prioritizing criteria below.

#### Ground Water Considerations

There are no criteria developed at this time to determine the impacts of ground water on the quality of surface water. Groundwater impacts to surface water quality will be determined based on the quality and load of the ground water discharge.

## Threatened and Endangered Species

Threatened and Endangered Species are not a consideration when making a designated use-support determination. However, once a water has been determined to be non supportive for a designated use, the United States Fish and Wildlife Service will be notified of the determination and a list of threatened and endangered (T&E) and candidate aquatic species in the watershed will be solicited. If there are T&E aquatic species present which could be affected by the pollutant(s) of concern, the water is ranked as high priority for TMDL development, unless a Watershed-based Plan has been approved by DEQ that addresses the active T&E aquatic species issues. Consequently, the Watershed-based Plan must address the T&E aquatic species concerns be approved by DEQ before the priority for development of a TMDL can be lowered. See prioritizing criteria below.

## Lake and Reservoir Assessments

In most cases, Chapter 1 water quality standards are applicable to lakes and reservoirs as well as to streams. Therefore, exceedances of Chapter 1 criteria protective of designated uses will be a basis for making a use support decision on lakes and reservoirs. On significant public lakes and reservoirs, DEQ will work with WGFD to establish water quality and fisheries goals, and use those as a basis for comparison for making use support determinations. When applying narrative criteria to lakes and reservoirs, DEQ will employ a weight of evidence approach, with a focus on trends in water quality condition over time. A declining trend in water quality over time may be a basis for a decision of “threatened” or “not fully-supporting” of a designated use, depending on the magnitude of the trend and evidence of use support. Since macroinvertebrate bioassessments are not conducted on lakes and reservoirs, DEQ relies on physicochemical parameters, measures of fish productivity and community structure, trophic state (Carlson 1979), and qualitative shoreline habitat characterizations (DEQ 2004) for making use support decisions.

## TMDL PRIORITIZATION FOR 303(d) LISTED WATERS

### Prioritizing Criteria

These criteria have been developed to provide a general guideline for prioritizing waters on the 303(d) List for TMDL development, based on the initial listing date. Prioritizing criteria have little to do with determining use support, but this section has traditionally been included in the “Method for Determining Water Quality Condition of Surface Water”. DEQ developed a TMDL Workplan in 1997 to address remediation and TMDL development on waters listed on its 1996 303(d) List. In a nutshell, the 1997 workplan called for using only scientifically valid data and assessments to determine use support. Waters without sufficient data to make use support determinations were removed from the 303(d) List so additional data could be collected and analyzed. On those waters which were not fully supporting their uses, the 1997 TMDL Workplan called to either have TMDLs written, or to be fully remediated by 2008. In 2008, DEQ expects to update its TMDL workplan to address waters not supporting their designated uses. At that time, these general prioritization criteria are expected to become part of that Workplan and will be removed from this document.

EPA guidance and programmatic conditions call for an 8-13 year maximum timeline for TMDL finalization. Prioritization focuses on pollution hazards on human and environmental health. Prioritization will also be based on a combination of original listing date and development and implementation of Watershed-based Plans. Watershed-based Plans identify the problems, loads, sources, solutions, and describe an implementation strategy to ensure that designated uses will be restored. In many cases, a listed water will contain characteristics that place it into more than one priority rating category. In those cases, all the applicable factors will be examined and weighted in order to arrive at a date for TMDL completion. While the priorities established using these criteria will be generally followed, circumstances may dictate adjustments, based on sound rationale, such as petitions from other entities, efficiency and geographic practicality of addressing high and low priorities at the same time. Where local stakeholder groups have committed, since the last listing process, to develop a Watershed-based Plan, the segment will be moved to a lower priority, based on the initial listing date, and the local group given time for the Watershed-based Plan action items to bring the water to full use attainment within 10 years of the initial listing date (See “Low” priority number 3).

A “high” Priority indicates TMDLs are scheduled to be finalized within two years, and a “medium” priority indicates TMDLs are scheduled to be finalized within four years. Time necessary to finalize a TMDL usually means TMDL development must begin before the water is prioritized as “high”. All waters will be prioritized as “high”, regardless of previous prioritization no later than 10 years following the listing date. To clarify when TMDLs will be developed, the expected date of TMDL completion will be on the 303(d) List, rather than a High, Medium, or Low Priority.

#### High Priority

1. TMDL development will be a high priority for those waters which have been listed for a ten year period without meeting designated uses. This prioritization will occur regardless of other prioritization factors in order to meet the maximum 13 year TMDL timeline.
2. TMDL development will be a high priority for those waters which are impaired due to pathogen(s) and/or toxic pollutant(s) associated with point source discharge loading, due to ecological and human health concerns.
3. TMDL development will be a high priority for those waters where the pollutant(s) causing impairment exceeds criteria for drinking water protection and there is a public water supply located below the pollutant(s) source which could be affected by the pollutant loading.
4. TMDL development will be a high priority for those waters where a locally sponsored stakeholder group has established, or will establish over the biennium, a water quality management plan which has all the components of a TMDL and where such group is seeking approval of the plan as a TMDL. Upon approval of the TMDL, such waters will be delisted and placed in Category 4A.

5. TMDL development will be a high priority if there are Threatened or Endangered aquatic species present and possibly affected by the pollutant(s) of concern, unless a Watershed-based Plan has been approved by DEQ that addresses the endangered species issues.
6. TMDL development will be a high priority for high quality waters (Classes 1 and 2) regardless of pollutant source in establishing TMDLs, with exceptions as noted below.
7. TMDL development will be a high priority where adequate data exists to establish load allocation(s) for nonpoint sources of pollutant(s) and where no locally sponsored stakeholder group has developed a Watershed-based Plan.

#### Medium Priority

1. TMDL development will be a medium priority for those waters which have been listed for an eight year period without meeting designated uses. This prioritization will occur regardless of other prioritization factors in order to meet the maximum 13 year TMDL timeline.
2. TMDL development will be a medium priority for those waters impacted by pollutant(s) which pose a lower ecological and human health risk (i.e., non-toxic pollutants such as clean sediment), with exceptions as noted below.
3. TMDL development will be a medium priority on Class 3 waters (e.g., waters protected for aquatic life other than fish, but not fisheries), with exceptions as noted below.

#### Low Priority

1. TMDL development will be a low priority for those waters on which insufficient water quality data exists to reasonably determine the cause(s) of the pollutant load. Data will be obtained through DEQ monitoring or local sponsorship of water quality assessment sufficient to establish TMDLs which address nonpoint source controls.
2. TMDL development will be a low priority on those waters which have been determined to be naturally of very low quality (i.e., Class 3D and 4 waters).
3. TMDL development will be a low priority for those waters where locally sponsored stakeholder groups have committed to establish a Watershed-based Plan within two years of initial listing on the 303(d) List. Watershed-based Plans must identify the problems, loads, sources, solutions, and describe an implementation strategy to ensure that designated uses will be restored within 10 years of the listing date.
4. TMDL development will be a low priority for waters petitioned for stream reclassification, when the petition includes representative "credible data". (Petitions which are not based upon representative "credible data" will not be considered.) Upon promulgation of the reclassification, if additional data are needed to determine use

support associated with the new classification, the water will be moved to the “monitoring list” to schedule further data collection. Upon determination of impairment status, the water will be listed and prioritized, or delisted as appropriate.

5. TMDL development will be a low priority if there are T&E aquatic species present and possibly affected by the pollutant(s) of concern and a Watershed-based Plan has been approved by DEQ that addresses the T&E species issues.

## THE PROCESS FOR DELISTING FROM THE 303(d) LIST

A water will be delisted from the 303(d) List for good cause. Good cause includes, but is not limited to: development of a TMDL to address the pollutant(s) causing non-attainment of designated use(s); more recent and representative data showing full support of designated use(s); flaws in the original analysis that led to the water being listed; demonstration that other pollution control requirements are in place and expected to result in full use support; determination that pollution (not pollutants) are the sole cause of impairment; changes in condition (e.g. new control equipment, elimination of discharges): or, restoration of the water quality resulting in full use support.

The determination that a water is now meeting water quality standards and should be delisted will generally follow the same analytical procedures used to list it, and the data must meet all requirements of the “credible data” law. The assessment will have to demonstrate, using representative and objective sampling and data interpretation, as outlined above, that the water has met designated uses for three consecutive years.

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