# Triennial Review of Wyoming's Surface Water Quality Standards

# Supplementary Guidance to Statement Of Principal Reasons

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## Part 1. Summary

The Wyoming Department of Environmental Quality (WDEQ) has developed proposed revisions to Wyoming Water Quality Rules, Chapter 1, Wyoming Surface Water Quality Standards (Chapter 1). The WDEQ has also developed minor proposed revisions to Chapter 2, Permit Regulations for Discharges to Wyoming Surface Waters (Chapter 2), to address changes to Chapter 1. WDEQ has prepared a concise statement of the principal reasons for adoption of the rules, as provided in Wyoming Statutes (W.S.) § 16-3-103(a)(i)(J). This guidance is intended to supplement the Statement of Principal Reasons. Part 2 provides a detailed description of the changes made to Chapter 1 and associated changes to Chapter 2. Part 3 provides a detailed description of the changes made to the *Wyoming Surface Water Classification List*<sup>1</sup>, renamed *Wyoming Surface Water Designations*<sup>2</sup>. Part 4 provides a summary of the aquatic life designated uses and associated water quality criteria in Chapter 1 compared to the classifications, aquatic life designated uses, and water quality criteria in the previous version of Chapter 1.

The proposed revisions to Chapter 1 also address the Implementation Policies for Antidegradation, Mixing Zones and Dilution Allowances, Turbidity, and Use Attainability Analysis Policy<sup>3</sup> and the Interim Policy on Establishing Effluent Limits for Permitted Point Source Discharges to Class 1 Water Tributaries<sup>4</sup>, which have been proposed to be incorporated into Chapter 1 (Mixing Zones and Dilution Allowances Implementation Policy), moved to Chapter 2 (Turbidity Implementation Policy), moved to guidance (Use Attainability Analysis Implementation Policy), and moved to an Antidegradation Implementation Methods document (Antidegradation Implementation Policy and the Interim Policy on Establishing Effluent Limits for Permitted Point Source Discharges to Class 1 Water Tributaries) so that the policies can be dissolved upon adoption of Chapter 1. The proposed revisions to Chapter 1 also incorporate the Wyoming Recreation Designated Uses Web Map<sup>5</sup>.

<sup>&</sup>lt;sup>1</sup> Wyoming Department of Environmental Quality. Water Quality Division. Surface Water Standards. Wyoming Surface Water Classification List. June 21, 2001. Updated March 16, 2021.

<sup>&</sup>lt;sup>2</sup> Wyoming Department of Environmental Quality. Water Quality Division. Surface Water Quality Standards. Wyoming Surface Water Designations. February 2025.

<sup>&</sup>lt;sup>3</sup> Wyoming Department of Environmental Quality. Implementation Policies for Antidegradation, Mixing Zones and Dilution Allowances, Turbidity, and Use Attainability Analysis. Water Quality Division. September 2013.

<sup>&</sup>lt;sup>4</sup>Wyoming Department of Environmental Quality. Interim Policy on Establishing Effluent Limits for Permitted Point Source Discharges to Class 1 Water Tributaries. Water Quality Division. August 2, 2007.

<sup>&</sup>lt;sup>5</sup>Wyoming Department of Environmental Quality. Water Quality Division. Wyoming Recreation Designated Uses Web Map. Accessed at: <u>https://gis.deq.wyo.gov/portal/apps/webappviewer/index.html?id=076b56422fcc4d75a8dfed298e6c524a</u>

## Part 2. Detailed Rationale for Changes

#### Changes Throughout.

The following revisions were made throughout Chapter 1 to consolidate material, address grammar and formatting, and improve consistency with the Wyoming Statutes or with recently revised Water Quality Rules:

- 1. Similar content was put together (e.g., water quality criteria, antidegradation provisions, designated uses).
- 2. Removed redundancies and unnecessary text.
- 3. Used gender neutral terminology (e.g., "human-made" rather than "man-made") in circumstances where the term was not referring to the term "man-made wetlands" defined at W.S. § 35-11-103(c)(xv).
- 4. Replaced passive voice with active voice.
- 5. Replaced "which" with "that" when appropriate.
- 6. Replaced "e.g.," with "such as."
- 7. Removed statements of general applicability or recommendations because they are not enforceable.
- 8. Replaced "and/or" with either "and" or "or" to minimize ambiguity. "And" was used in instances when all conditions must be met at the same time. "Or" was used in instances when one condition needs to be met at the same time. For provisions of water quality criteria separated by an "or," non-attainment of the criteria could be in any instance where any of the provisions separated by an "or" are not met while attainment of the criteria requires all of the provisions separated by an "or" be met.
- 9. Used text for whole numbers of 10 or less, unless the number was associated with a decimal, equations or referenced a number in an equation or rule section. Used numerals for numbers greater than 10.
- 10. Incorporated by reference, consistent with W.S. § 16-3-103(h), those materials that are intended to have the force and effect of law. Removed referenced materials when they were not needed for implementation of the rule.
- 11. Specified the party responsible for implementing the rule where applicable (e.g., the Department shall).
- 12. Removed unnecessary references to the Wyoming Statutes, duplication of statutes, or duplication of requirements from statutes.
- 13. Defined terms and consistent terminology were used when possible, including the following:
  - a. Replaced statements related to pollution such as "pollution attributable to or influenced by the activities of man," "substances attributable to or influenced by the activities of man," "materials attributable to and influenced by the activities of man,"

and "pollution attributable to the activities of man," with "pollution," as this is a defined term at W.S. § 35-11-103(c)(i).

- b. Replaced "wyoming surface waters," "waters of the state," "waters," etc. with "Surface Waters of the State," as this is a defined term in Chapter 1.
- c. Replaced "indigenous" with "natural," a defined term in Chapter 1.
- d. Replaced "standard" with "criteria" when the term is intended to refer to water quality criteria.
- e. Revised references to specific sections of the Clean Water Act<sup>6</sup> so that the Clean Water Act United States Code (U.S.C.) was used the first time the Clean Water Act is referenced and the applicable section of the Clean Water Act and U.S.C. used thereafter (e.g., Section 316(a) of the Clean Water Act, 33 U.S.C. § 1326).
- f. Revised references to the Wyoming Statutes so that "Wyoming Statutes (W.S.)" was used the first time the statutes are referenced and the abbreviation used thereafter (e.g., W.S. § 35-11-103).
- g. Revised references to a particular section of Chapter 1 to "Section X of this Chapter."
- h. Capitalized defined terms such as "Department" and "Surface Waters of the State."
- i. Replaced references to "these regulations" with "the water quality standards in this Chapter."

#### Section 1. Authority.

- 1. The section title and location in Chapter 1 were not changed from the previous version.
- The reference to the Wyoming Statutes was updated from "W.S. 35-11-101 through 35-11-1803, specifically 302(a)(i) and 302(b)(i)" to "pursuant to the Environmental Quality Act, as defined at "W.S. 35-11-103(a)(xiii), specifically §§ 302(a)(i), 302(b), and 302(c)(i)" to be consistent with the authorizing statutes.
- 3. Provisions that duplicated or redundant to statute were removed.
- 4. A new provision clarifying that Chapter 1 is not intended to grant authority to the United States Environmental Protection Agency (EPA) or United States Army Corps of Engineers beyond was added to ensure the limits of authority in implementing the water quality standards is clearly established in the rule.
- 5. The Department does not anticipate any changes to Clean Water Act implementation as a result of the clarifications to authorities.

#### Section 2. Definitions.

1. The section title and location in Chapter 1 were not changed from the previous version.

<sup>&</sup>lt;sup>6</sup> Clean Water Act, 33 U.S.C. § 1251 et seq. Accessed from: <u>https://www.govinfo.gov/app/details/USCODE-2023-title33/USCODE-2023-title33-chap26-subchap1-sec1251/context</u>.

- 2. Retained terms, but removed definitions of terms, that are defined in the Environmental Quality Act to avoid duplication:
  - a. Credible data;
  - b. Discharge;
  - c. Ecological function;
  - d. Man-made wetlands;
  - e. Mitigation;
  - f. Natural wetlands;
  - g. Point source;
  - h. Pollution;
  - i. Wastes;
  - j. Wetlands; and
  - k. Wetland values
- 3. Added the following terms that are defined in the Environmental Quality Act that are used in the Chapter:
  - a. Administrator;
  - b. Council;
  - c. Department;
  - d. Director;
  - e. Person; and
  - f. Treatment works.
- 4. Removed the following terms are no longer used in Chapter 1:
  - a. "Ambient-based criteria" was removed, as the term is no longer used in Chapter 1. "Ambient-based criteria" was previously used in reference to establishing water quality criteria for effluent-dependent waters outlined in Section 33 and Section 34 of the previous version of Chapter 1. The concept of ambient-based criteria is still used in Section 25(b) of Chapter 1, but the term and definition are no longer necessary.
  - b. "Isolated water" was removed, as the term is no longer used in Chapter 1. The term "adjacent wetlands," has been retained. "Isolated water" was previously used in the description of Class 3A and Class 4C waters that have been removed. The Water Quality Rules, Chapter 2, Permit Regulations for Discharges to Wyoming Surface Waters, also includes a definition of "isolated wetland" that is not consistent with the definition of "isolated water" used in the previous version of Chapter 1. Given these reasons, it was appropriate to remove the term to avoid confusion and potential conflicts with the use of the term in Water Quality Rules, Chapter 2.
  - c. "Natural biotic community" was removed, as the term is no longer used in Chapter 1. The term was previously used in the definition of "undesirable aquatic life" and the

definition was revised to remove the concept of "natural biotic community" because it is unnecessary. The term and concept of "natural" was retained in Chapter 1.

- d. "Natural water quality" was removed, as the term is no longer used in Chapter 1. The term was used in the previous description of Class 3 waters and in the description of industrial water supply and agricultural water supply protections. The term "natural" is still defined and included in Chapter 1.
- e. "Nephelometric turbidity unit (NTU)" was removed, as the term is no longer used in Chapter 1. The term was used in the previous Section 23, Turbidity, to describe the 10 NTU and 15 NTU increase criteria applicable to waters designated for drinking water supplies and fisheries. The numeric turbidity criteria have been removed, as discussed in additional detail in Part 2, Sections 15, 16, and 17 of this document.
- f. "Non-priority pollutant" was removed, as the term is no longer used in Chapter 1. The term "priority pollutant" was retained and the definition updated. "Non-priority pollutant" was used in Appendix B of the previous version of the rule. Appendix B included separate tables for priority and non-priority aquatic life, drinking water, and human consumption of fish criteria. In the revised version of Chapter 1, priority and non-priority pollutant criteria are included in the same tables in Section 16 and Section 17 and priority pollutants shown in **bold italics**.
- g. "Primary contact recreation" was removed, as this term is no longer used in Chapter 1.
   "Full body contact water recreation" is used instead. All designated use descriptions are included in Section 11 and are not included in the definitions.
- h. "Seasonal fishery" was removed, as this term is no longer used in Chapter 1. The term seasonal fishery was used in the description of Class 2AB, Class 2B, and 2C waters in the previous version of Chapter 1. The concept of seasonal fishery was retained in the description of "aquatic community" in the phrase "some stage of their life cycles."
- i. "Secondary contact recreation" was removed, as this term is no longer used in Chapter
  1. "Limited body contact water recreation" is used instead. All designated use descriptions are included in Section 11 and are not included in the definitions.
- j. "Wyoming continuing planning process (CPP)" was removed, as this term is no longer used in Chapter 1. The CPP was referenced within Section 5, "Standards Enforcement" of the previous version of Chapter 1 as a document that describes the processes used to implement the water quality standards. The CPP was also referenced within the Section 7, "Class 1 Waters" of the previous version of Chapter 1 in reference to the best management practices that would be used to control nonpoint source discharges of pollution of Class 1 waters. States are required to develop CPPs, as described in Section 303(e)(3) of the Clean Water Act, 33 U.S.C. 1313(e)(3)<sup>6</sup>, and 40 CFR § 130.5<sup>7</sup>. However,

<sup>&</sup>lt;sup>7</sup> United States Environmental Protection Agency. 40 CFR § 130. Water Quality Planning and Management. Accessed from: <u>https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-130</u>.

the state is not required to reference the CPP in its water quality standards, nor limit BMPs to address nonpoint sources of pollution to Outstanding Resource Waters to those approved using the process outlined in the CPP. 40 CFR § 131.12<sup>8</sup> simply states that states shall follow the public process outlined in their CPP when conducting a high-quality water antidegradation review.

- k. "Wyoming surface waters" was removed, as this term is no longer used in Chapter 1. The term "Surface waters of the state" is defined and used throughout Chapter 1.
- I. "404 permit" was removed, as this term is no longer used in Chapter 1. "404 permit" was included in Section 14, "Dead Animals and Solid Waste" of the previous version of Chapter 1 to clarify that the addition of solid waste may be authorized through a 404 permit. In the proposed version of Chapter 1, Section 15 describes that the introduction of wastes may be authorized, but the authorization is no longer limited to 404 permits. This revision was made to ensure the provision is applicable to other authorized activities and applicable to waters that are not subject to the jurisdiction of the Clean Water Act, as 404 permits are only issued for activities on waters that are subject to the jurisdiction of the Clean Water Act.
- 5. Removed the following terms that are abbreviations defined in the rule, do not have a unique meaning in Chapter 1, or are described or defined elsewhere in the rule:
  - a. "Discharger specific variance" was removed because the term refers to a substantive concept that is discussed in Section 27 of Chapter 1.
  - b. "Dissolved oxygen" was removed because the term is a well-established term that does not have unique meaning within this Chapter.
  - c. "*E. coli*" was removed because the term is an abbreviation and is defined within the text of Chapter 1.
  - d. "Environmental Protection Agency" was removed because this is a well-established term that does not have unique meaning within Chapter 1. Chapter 1 continues to refer to the United States Environmental Protection Agency throughout.
  - e. "Full body contact water recreation" was removed, as all designated uses and descriptions are included in Section 11 of Chapter 1.
  - f. "Game fish" was removed, as the fish species included in that definition are included under the definitions of "cold water game fish" and "warm water game fish."
  - g. "Micrograms per liter ( $\mu$ g/L) was removed, as this is an abbreviation and is defined within the text.
  - h. "Milligrams per liter (mg/L)" was removed, as this term is an abbreviation and is defined within the text.

<sup>&</sup>lt;sup>8</sup> United States Environmental Protection Agency. 40 CFR § 131. Water Quality Standards. Accessed from: <u>https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-131</u>.

- i. "Picocuries per liter (pCi/L)" was removed, as this term is an abbreviation and is defined within the text.
- j. "pH" was removed because this is a well-established term that does not have unique meaning within Chapter 1.
- 6. The following terms were added:
  - a. "Assimilative capacity" was added to provide clarity for circumstances where a dilution allowance, as outlined in Section 9, Dilution Allowances – Complete Mixing Scenarios and Section 10, Mixing Zones – Incomplete Mixing Scenarios, may be appropriate in the development of water-quality based effluent limits. The definition was based on the use of the term in the *Mixing Zones and Dilution Allowances Implementation Policy, Antidegradation Implementation Policy*<sup>3</sup>, and the South Dakota Department of Environment and Natural Resources Antidegradation Implementation Procedures<sup>9</sup>.
  - b. "Conventional drinking water treatment" was added to clarify the type of treatment expectations associated with the drinking water designated use described in Section 11 and Section 17 of Chapter 1. The definition was based on the National Primary Drinking Water Regulations at 40 CFR § 141.73<sup>10</sup> which requires public water systems that use a surface water or ground water source under the influence of surface water, if they do not meet the criteria for avoiding filtration, to provide treatment consisting of both filtration and disinfection. The National Primary Drinking Water Regulations at 40 CFR § 141.2<sup>10</sup> "defines "conventional filtration treatment" as "a series of processes including coagulation, flocculation, sedimentation, and filtration resulting in substantial particulate removal" and defines "disinfection" as "a process which inactivates pathogenic organisms in water by chemical oxidants or equivalent agents." The proposed definition is also consistent with the Colorado Water Quality Standards,<sup>11</sup> which define "standard treatment" as "coagulation, flocculation, sedimentation, floccula
  - c. "Dissolved metal" was added to the definitions because the term is used in multiple places in Chapter 1. In the previous version of Chapter 1, the definition was included in a footnote to Appendix B.
  - d. "Highest attainable use" was added to clarify expectations associated with the designation of uses, modification of uses, and modification of water quality criteria for

<sup>&</sup>lt;sup>9</sup>South Dakota Department of Environment and Natural Resources. South Dakota Antidegradation Implementation Procedures. October 1998. Accessed from: <u>https://www.epa.gov/sites/default/files/2014-12/documents/sd-antidegradation.pdf</u>.

<sup>&</sup>lt;sup>10</sup> United States Environmental Protection Agency. 40 CFR § 141. National Primary Drinking Water Regulations. Accessed from: <u>https://www.ecfr.gov/current/title-40/chapter-I/subchapter-D/part-141</u>.

 <sup>&</sup>lt;sup>11</sup> Colorado Department of Public Health and the Environment. Water Quality Control Commission. Regulation No.
 31 – The Basic Standards and Methodologies for Surface Water. 5 CCR 1002-31. Effective Date June 14, 2023.
 Accessed from:

https://www.sos.state.co.us/CCR/GenerateRulePdf.do?ruleVersionId=10835&fileName=5%20CCR%201002-31.

waters under the jurisdiction of the Clean Water Act. The definition is based on the definition of "highest attainable use" at 40 CFR § 131.3(m)<sup>8</sup> and Wyoming's equivalent designated uses (i.e., aquatic life, terrestrial wildlife, human consumption of fish, full body contact water recreation). In the previous version of Chapter 1, the term attainable was used in in Section 3, "Water Uses," Section 4, "Surface Water Classes and Uses," and Section 33, "Reclassifications and Site-Specific Criteria," but the term was not defined consistently with the Clean Water Act water quality standards implementing regulations at 40 CFR § 131<sup>8</sup>.

- e. "Outstanding Resource Water" was added because this term is used throughout Chapter 1 to signify the waters where existing quality is to be maintained. The definition was also added to clarify that these waters were known as Class 1 waters in the previous version of Chapter 1.
- f. "Zone of initial dilution" was added to clarify the phrase used in Section 10, Mixing Zones Incomplete Mixing Scenarios. This term was used in Section 9, Mixing Zones, of the previous version of Chapter 1, but was not included in the definitions. The definition was based on the use of the term in the *Mixing Zones and Dilution Allowances Implementation Policy*<sup>3</sup>.
- 7. The following terms were revised:
  - a. The term "acute value" was revised to "acute" to allow broader application of the term. The definition was revised to remove: (1) provisions that were only applicable to aquatic organisms, (2) references to the Environmental Protection Agency (EPA), (3) references to Appendix B of Chapter 1, and (4) references to specific duration and frequency components. As revised, the definition is a general term that can used to describe any short-term effect, including effects to humans. The definition is consistent with Idaho's definition<sup>12</sup> of acute, EPA's model definition for tribes<sup>13</sup>, and EPA's methods for deriving aquatic life, drinking water, and human consumption of fish criteria<sup>14,15</sup>.

<sup>&</sup>lt;sup>12</sup> Idaho Department of Environmental Quality. Idaho Water Quality Standards. Surface and Wastewater Division. 58.01.02 – Water Quality Standards. Zero-Based Regulation Review – 2024 for Rulemaking and 2025 Legislative Review. Accessed from: <u>https://www.deq.idaho.gov/water-quality/surface-water/water-quality-standards/</u>

<sup>&</sup>lt;sup>13</sup> United States Environmental Protection Agency. Model Water Quality Standards Template for Waters on Indian Reservations. EPA-815-D-23-002. Office of Water. Office of Science and Technology. February 2023. Accessed from: <u>https://www.epa.gov/wqs-tech/water-quality-standards-tools-tribes</u>

<sup>&</sup>lt;sup>14</sup> United States Environmental Protection Agency. Methodology for Deriving Ambient Water Quality Criteria for the Protection of Human Health. EPA-822-B-00-004. Office of Water. Office of Science and Technology. October 2000. Accessed from: <u>https://www.epa.gov/sites/default/files/2018-10/documents/methodology-wqc-protectionhh-2000.pdf</u>

<sup>&</sup>lt;sup>15</sup> United States Environmental Protection Agency. Guidelines for Deriving Numerical Water Quality Criteria for the Protection of Aquatic Organism and Their Uses. PB85-227049. Office of Research and Development. Electronic version created December 2010 from 1985 version. Accessed from: <u>https://www.epa.gov/sites/default/files/2016-02/documents/guidelines-water-quality-criteria.pdf</u>.

- b. The definition of "adjacent wetlands" was revised to add "hydrophytic vegetation," "hydric soils," and "wetland hydrology." These terms were previously included in the definition of the term "wetland," defined at W.S. § 35-11-103(c)(x), that was removed from Chapter 1.
- c. The term "aquatic life" was revised to "aquatic community" to differentiate the components of the aquatic community from aquatic life designated uses. The defined term "undesirable aquatic life" also replaced portions of the definition that referred to concepts included in the definition of "undesirable aquatic life."
- d. The definition of "best management practices" was revised to better align with the definition in the federal regulations at 40 CFR § 130.2<sup>7</sup> that describes BMPs as "methods, measures, or practices" and 40 CFR § 131.10<sup>8</sup> that describes use attainability based on the imposition of "cost-effective and reasonable best management practices." DEQ's authority to determine BMPs was also clarified.
- e. The term "chronic value" was revised to "chronic" to allow broader application of the term. The definition was revised to remove references solely applicable to aquatic organisms, the Environmental Protection Agency (EPA), Appendix B, and specific duration and frequency components. As revised, the definition is a general term that can be used to describe any long-term effect, including effects to humans and is consistent with definitions in EPA's tribal template water quality standards definition<sup>13</sup>, Idaho's water quality standards<sup>12</sup>, and EPA's methods for deriving aquatic life, drinking water, and human consumption of fish criteria<sup>14,15</sup>.
- f. "Federal Act" was revised to "Clean Water Act" and defined as the reference to the United States Code, 33 U.S.C. 1251 et seq<sup>6</sup>.
- g. The definition of "construction-related discharge" was revised to clarify that discharges may be associated with "equipment operation in or along a Surface Water of the State" rather than only "equipment operation beneath the water's surface," as discharges may occur when equipment is near a Surface Water of the State, not just when the equipment is operated below the water surface.
- h. The definition of "designated uses" was revised for clarity and consistency. "Water quality standards" now reads "Wyoming's surface water quality standards," "water body" was changed to "waterbody," and "segment" was changed to "waterbody segment."
- i. The term "effluent-dependent water" was revised to "effluent-dependent" because the term can refer to both a waterbody and a designated use (e.g., effluent-dependent aquatic life, human consumption of effluent-dependent fish). The definition was also revised to clarify and broaden use of the term so that "effluent-dependent" can mean a designated use, waterbody, or waterbody segment.

- j. The definition of "effluent limitations" was revised to remove the reference to the Environmental Protection Agency, as the Department establishes effluent limitations for discharges to Surface Waters of the State that require permits. The phrase "quantities, rates, and concentrations of chemical, physical, biological and other constituents discharged from point sources" was abbreviated to "pollution," the defined term at W.S. § 35-11-103(c)(i). The term "from point sources" was removed because effluent limitations may be established for discharges that are not associated with "point source," as defined in W.S. § 35-11-103(a). Examples include discharges from dredge and fill activities or stormwater discharges.
- k. The term "ephemeral stream" was revised to "ephemeral" because "ephemeral" is used without "stream" in Chapter 1. The definition was also revised to: (1) add snowmelt events rather than just precipitation events; (2) remove the concept of a "single precipitation" (or snowmelt event) since ephemeral waterbodies may be present due to multiple precipitation or snowmelt events; (3) clarify that ephemeral systems are "ordinarily dry" so as to help reinforce the concept of being present due to precipitation or snowmelt events; (4) remove the requirement that the precipitation or snowmelt event may result in water many miles down gradient; and (4) clarify that in ephemeral systems the channel bottom is ordinarily above the prevailing water table rather than "always" above the prevailing water table, as there may be instances during atypically wet years where an ephemeral system may temporarily have a perched water table.
- I. The definition of "eutrophic" was revised to combine two sentences into one to improve readability.
- m. The definition of "existing quality" was revised to replace "Class 1" with "Outstanding Resource Water;" to remove reference to "natural" since "natural" is defined as without anthropogenic influences and Outstanding Resource Waters are under anthropogenic influence; and to replace "fluctuate on a seasonal and year to year basis" with "temporal variability" to recognize inherent variations in water quality that would be present at the time of designation.
- n. The definition of "historic data" was reorganized to improve readability.
- o. The definition of "hydrophytic vegetation" was revised to improve readability and clarify that the prevalence index must be "less than or equal to three" rather than "less than three," to be consistent with United States Army Corps of Engineers guidance regarding hydrophytic vegetation<sup>16</sup>. The change is necessary because facultative species, which are assigned a "three" in the prevalence index calculation, are considered hydrophytic plants. Thus, in order for a site comprised entirely of facultative

<sup>&</sup>lt;sup>16</sup> United States Army Corps of Engineers Wetland Determination Data Sheet – Arid West Region. Accessed from: <u>https://www.publications.usace.army.mil/Portals/76/Users/028/00/3100/Eng\_Form\_6116-1\_2024Feb.pdf</u>

species to have a prevalence of hydrophytic vegetation, the prevalence index must be less than or equal to three rather than only less than three.

- p. "Intermittent stream" was revised to "intermittent" because "intermittent" is used without "stream" in Chapter 1. Within the definition, "stream or portion of a stream" replaced with "waterbody or portion of a waterbody" to reflect the broader application of the term. "Channel bottom is above the local water table" was replaced with "where the bottom intersects the water table for some part of the year" to better differentiate intermittent systems from ephemeral systems.
- q. The term "main stem" was revised to "mainstem." Within the definition, "major" was replaced with "primary," for consistency with common terminology. References to the State Engineer's Office were also removed because the Department is responsible for defining the applicable Surface Waters of the State.
- r. The definition of "mixing zone" was revised to replace "surface water body" with the defined term "Surface Water of the State," and to clarify that mixing zones are defined areas identified by the Department. The definition was also revised to better align with the definition in EPA's Water Quality Standards Handbook<sup>17</sup> and specify that a mixing zone is where initial dilution takes place where water quality criteria may not be met rather than simply where "effluent becomes mixed with the water body."
- s. The definition of "natural" was revised to remove gendered terminology.
- t. The definition of "nongame fish" was revised to include the defined terms "cold water game fish" and "warm water game fish" rather than reference the deleted term "game fish." The definition was also revised to include the defined term "undesirable aquatic life." Using the defined term "undesirable aquatic life" will help to ensure that the definition of nongame fish does not include aquatic invasive species such as the Brook Stickleback.
- u. The term "perennial stream" was revised to "perennial" because "perennial" is used without "stream" in Chapter 1. Within the definition, "stream or portion of a stream" was replaced with "waterbody or portion of a waterbody" to clarify the broader application of the term. "Present during all of the calendar year" was replaced with "typically present during the entire calendar year" to reflect the fact that atypical hydrologic conditions such as during droughts may result in periods when water is not present in a perennial system.
- v. The definition of "pollutant minimization program" was revised to replace "and/or" with "or" to minimize ambiguity.

<sup>&</sup>lt;sup>17</sup>United States Environmental Protection Agency. Water Quality Standards Handbook Chapter 5: General Policies. EPA-820-B-14-004. Office of Water. September 2014. Accessed from: <u>https://www.epa.gov/wqs-tech/water-</u><u>quality-standards-handbook</u>.

- w. The definition of "priority pollutant" was revised, consistent with the Clean Water Act<sup>6</sup> and the Water Quality Standards Handbook<sup>18</sup>, to correct the reference from those pollutants identified at Section 307(a) of the Clean Water Act<sup>6</sup> to the list of pollutants identified at 40 CFR Part 423 Appendix A<sup>19</sup>, which was derived from the list of pollutants identified pursuant to Section 307(a) of the Clean Water Act<sup>6</sup> and listed at 40 CFR § 401.15<sup>20</sup>.
- x. The definition of "salinity" was revised to "total dissolved solids" for simplicity and consistency with the definition of the term in the Water Quality Standards for Salinity in the Colorado River Basin System<sup>21</sup>.
- y. The term and definition of "storm water" was revised to "stormwater" for consistency with the term used in the Clean Water Act<sup>6</sup>.
- z. The definition of "surface waters of the state" was revised to change "man-made" to "human-made" to make the text gender-neutral. "Retention ponds used for the treatment of" was changed to the defined term "treatment works" and to recognize that containment and treatment systems may include more than ponds. The reference to the Wyoming Statutes was removed, as this was a duplication of the statute.
- aa. The definition of "toxic materials" was modified to remove the phrase "based on information available to the director of the Wyoming Department of Environmental Quality (department)" to clarify that the Director does not need to specifically designate a substance as "toxic." The phrase "including malfunctions in reproduction" that was in parentheses was integrated into the definition.
- bb. The definition of "undesirable aquatic life" was revised to include the terms from the definition of "aquatic community" that were specifically excluded (i.e., insect pests, aquatic invasive species). The reference to the Wyoming Game and Fish Department and U.S. Fish and Wildlife Service was removed, as "undesirable" is not a defined term within these agencies. In addition, the Department has the authority to determine what should be considered undesirable as the term relates to surface water quality in Wyoming. The phrase "altered the structure and function of natural or intentionally introduced biotic community" was also included to mirror the terminology used within

<sup>&</sup>lt;sup>18</sup> United States Environmental Protection Agency. Water Quality Standards Handbook Chapter 3: Water Quality Criteria. EPA-823-B-23-001. Office of Water. December 2023. Accessed from: <u>https://www.epa.gov/wqs-tech/water-quality-standards-handbook</u>.

<sup>&</sup>lt;sup>19</sup> United States Environmental Protection Agency. 40 CFR § 423, Appendix A to Part 423. Priority Pollutants. Accessed from: <u>https://www.ecfr.gov/current/title-40/chapter-I/subchapter-N/part-423/appendix-Appendix%20A%20to%20Part%20423</u>.

<sup>&</sup>lt;sup>20</sup> United States Environmental Protection Agency. 40 CFR § 401.15. Toxic Pollutants. Accessed from: <u>https://www.ecfr.gov/current/title-40/chapter-I/subchapter-N/part-401/section-401.15</u>.

<sup>&</sup>lt;sup>21</sup> Colorado River Basin Salinity Control Forum. 2023 Review Water Quality Standards for Salinity Colorado River System. October 2023. Accessed from: <u>https://www.coloradoriversalinity.org/index.php</u>.

the narrative aquatic life criteria described in Section 16 of Chapter 1. The phrase "natural or intentionally introduced biotic" was also replaced with the defined term, "aquatic community."

- cc. The definition of "use attainability analysis" was revised to remove the reference to a specific section of Chapter 1 where the term is used because the term is used in multiple sections in the Chapter.
- 8. The Department does not anticipate any changes to Clean Water Act implementation as a result of updates to the definitions used in Chapter 1 since the updates were primarily made to improve clarity and readability.

#### Section 3. Purpose.

- Section 3 was Section 5, "Standards Enforcement," in the previous version of Chapter 1. The section title was changed to "Purpose" to better align with the provisions included in the section.
- 2. Clarified that the Department has authority to implement and enforce the standards. The previous version of Chapter 1 did not specify who was responsible for implementing the standards.
- 3. The phrase "establish effluent limitations for those discharges requiring control via permits to discharge in the case of point sources" was changed to "establish effluent limitations for discharges of pollution that require permits" to use the defined term "pollution" and avoid use of the phrase "control via permits to discharge in the case of point sources," as all "point sources" are not required to be permitted per Water Quality Rules, Chapter 2, and some activities that may not be considered "point sources" are regulated via permits (e.g., stormwater, dredge and fill activities).
- 4. The phrase "establish...best management practices in the case of nonpoint sources" was modified to "identify nonpoint sources of pollution and best management practices to address nonpoint sources of pollution" to recognize that the Department must identify nonpoint sources as well as best management practices to effectively address nonpoint sources of pollution. Section 319 of the Clean Water Act, 33 U.S.C § 1329<sup>6</sup>, requires states to develop a report that identifies waters that are not expected to meet water quality standards without additional action to control nonpoint sources and develop a nonpoint source pollution management program that identifies (1) the best management practices and measures that will be undertaken to reduce pollutant loadings; and (2) programs to achieve implementation of the best management practices.
- 5. Added a provision that the Department will use the standards to "Administer the Environmental Quality Act" to clarify that the standards can be used to implement any applicable provisions in the Environmental Quality Act.

- 6. The statements "the processes used to implement the standards are described in various implementation documents adopted by the department. Such documents are adopted with full public participation and include, but are not limited to, the Implementation Policies for Antidegradation, Mixing Zones and Dilution Allowances, Turbidity and Use Attainability Analysis<sup>3</sup>, the Wyoming Continuing Planning Process (CPP) and best management practices" was removed because the implementation documents either do not need to be referenced in Chapter 1 or are addressed elsewhere in Chapter 1. The Antidegradation Implementation Policy<sup>3</sup> is being updated and revised as the Wyoming Surface Water Quality Standards Antidegradation Implementation Methods, as described in Part 2, Section 13, of this document and Section 13 of Chapter 1. The Mixing Zones and Dilution Allowances Implementation Policy<sup>3</sup> was incorporated into Section 9 and Section 10 of Chapter 1. The *Turbidity Implementation Policy*<sup>3</sup> that describes the process for the Administrator to grant temporary waivers for turbidity-related discharges has been incorporated into Water Quality Rules, Chapter 2, Permit Regulations for Discharges to Wyoming Surface Waters, because Chapter 2 describes the permitting requirements for discharges of pollution. The Use Attainability Implementation Policy<sup>3</sup> is being migrated into a guidance document, as the material included in this policy provides suggestions on how to go about modifying designated uses. Reference to the CPP and best management practices were removed because the references are not necessary within Chapter 1. States are required to develop CPPs, as described in Section 303(e)(3) of the Clean Water Act, 33 U.S.C. § 1313(e)(3), and 40 CFR § 130.5<sup>7</sup>. However, the state is not required to reference the CPP in its water quality standards. As described in Section 319((b) of the Clean Water Act, 33 U.S.C § 1329(b), states must, as part of their nonpoint source management programs, identify the best management practices and measures that will be undertaken to reduce pollutant loadings from nonpoint sources. However, similar to the CPP, states are not required to reference specific best management practices within their water quality standards.
- 7. The phrase "these regulations shall not be interpreted to preclude the establishment of appropriate compliance schedules for permitting purposes" was revised to "The department may, when appropriate, authorize compliance schedules that will lead to compliance with the water quality standards in this Chapter as soon as possible," to ensure that Chapter 1 provided a specific compliance schedule authorizing provision, as required at 40 § 131.15<sup>8</sup>. The description of a compliance schedule was derived from 40 CFR § 122.47<sup>22</sup>. 40 CFR § 122.47(a)<sup>22</sup> describes "The permit may, when appropriate, specify a

<sup>&</sup>lt;sup>22</sup> United States Environmental Protection Agency. 40 CFR § 122.47 and 40 CFR § 123.25. Schedules of Compliance. Accessed from: <u>https://www.ecfr.gov/current/title-40/chapter-l/subchapter-D/part-122/subpart-C/section-122.47</u>.

schedule of compliance leading to compliance with CWA and regulations" and 40 CFR §  $122.47(a)(i)^{22}$  describes compliance should be "as soon as possible."

- 8. The phrase "nor shall compliance with the conditions of these regulations exempt any discharger from the penalty provisions of W.S. 35-11-901" was deleted, as this was duplicative of Wyoming Statutes.
- 9. The Department does not anticipate that the clarifications to the purpose of Wyoming's surface water quality standards will impact Clean Water Act implementation in Wyoming. The addition of the compliance schedule authorizing provision will improve consistency with Clean Water Act implementing regulations at 40 CFR 131<sup>8</sup>.

#### Section 4. Testing Procedures.

- 1. Section 4 was Section 10, "Testing Procedures," in the previous version of Chapter 1.
- "Title 40, Code of Federal Regulations, Part 136, or any modifications thereto" was revised to "40 C.F.R. §§ 136.1, 136.2, 136.3, 136.5, and 136.7, as incorporated by reference in Section 28 of this Chapter" so that these specific sections of the federal regulations are incorporated by reference rather than all of 40 CFR Part 136.
- 3. The text "For test procedures not listed in the Code of Federal Regulations, test procedures outlined in the latest editions of: EPA Methods for Chemical Analysis of Water and Wastes; Standard Methods for the Examination of Water and Wastewater; or ASTM Standards will be used. Where standard methods of testing have not been established, the suitability of testing procedures shall be determined by the department and the EPA using defensible scientific method" was replaced with "other scientifically defensible methods identified by the Department," because (1) the Department is the appropriate authority to determine testing procedures for compliance with Wyoming Surface Water Quality Standards and (2) not all of the methods included in the referenced text are appropriate or acceptable to the Department.
- 4. The statement recommending that sampling entities consult with the Department was removed, as this is not an enforceable water quality standard or implementation requirement associated with the water quality standards.
- 5. The Department does not anticipate that clarifications regarding acceptable analytical methods will impact Clean Water Act implementation in Wyoming.

#### Section 5. Credible Data.

- 1. Section 5 was Section 35, "Credible Data," in the previous version of Chapter 1. This Section elaborates on the definition of credible data at W.S. § 35-11-103(c)(xix) and the concepts described at W.S. § 35-11-302(b).
- 2. The Section was reorganized and streamlined to help improve clarity and reduce redundancies. The provisions describe: that credible data are used in designating uses and

determining attainment of uses; when certain types of data may not be necessary; and what constitutes scientifically valid chemical, physical, and biological monitoring data. The previous version of the Section described what is considered scientifically valid chemical, physical, and biological monitoring data; what additional information must be considered along with credible data to designate uses and determine whether uses are attained; described the requirement that credible data relevant to the decision be used to designate uses; and outlined the requirement that credible data be used to determine a waterbody's attainment of designated uses.

- 3. The defined term "historic data" was included with "other available and applicable information," to ensure that the phrase included in the definition of credible data at W.S. § 35-11-103(c)(xix) was included in the section. In the previous version of Chapter 1, "historic data" was included in the definitions of "credible data" in Section 2 of Chapter 1. However, because the definitions from the Wyoming Statutes were deleted, the "historic data" would not have been included in Chapter 1.
- 4. The phrase "weight of evidence" was replaced with "multiple-lines-of-evidence" because "multiple-lines-of-evidence" better represents the process the Department uses to evaluate data and information. Data and information are generally not "weighted" quantitatively but are instead considered in the context of all the available data and information.
- 5. The discussion of use attainability analysis requirements was removed, as these requirements are described in Section 12 of Chapter 1.
- 6. The requirements associated with scientifically valid data were aligned with the definition of credible data at W.S. § 35-11-103(c)(xix) and current practice such that data must "consist of data collected consistent with a sampling and analysis plan accepted by the Department that includes the laboratory methods, field methods, and quality assurance and quality control procedures used" and "be conducted by a person who has, or works under the supervision of a person who has, received specialized training that includes a thorough knowledge of written sampling protocols, methods, and quality assurance and guality control procedures such that the data collection and interpretation are reproducible, scientifically defensible, and free from preconceived bias." The previous version of the rule did not specifically describe that scientifically valid data must be collected consistent with an accepted sampling and analysis plan, but instead described that the credible data consists of data collection "using accepted referenced laboratory and field methods by a person who has received specialized training and has field experience in developing a monitoring plan, a quality assurance plan, and employing the methods outlined in such plans or works under the supervision of a person who has these qualifications" and that credible data "includes documented quality assurance consisting of a plan that details how environmental data operations are planned, implemented and

assessed with respect to quality during the duration of the project." However, as described at W.S. § 35-11-103(c)(xix), the essential element of credible data is that the methods and quality control and quality assurance procedures used are acceptable to the Department. As such, collection of credible data does not require the person who is collecting the data to have developed the monitoring plan and quality assurance plan or to work under the direct supervision of a person who has developed such plans. These revisions reflect current practices. For example, United States Geological Survey has staff that collect water quality data consistent with sampling and analysis plans, including quality assurance and control procedures, that may not have experience developing the monitoring plan or who work under the direct supervision of those that have developed the sampling plan.

7. The Department anticipates making updates to Wyoming's Methods for Determining Surface Water Quality Condition,<sup>23</sup> which describes how the Department will determine attainment of water quality standards for purposes of developing Wyoming's Integrated Clean Water Act Section 305(b) and 303(d) Report, to reflect the revisions to the credible data requirements. However, the Department does not anticipate that the changes clarifying Wyoming's use of credible data in determining attainment of water quality standards and designating uses will result in significant changes to Clean Water Act implementation in Wyoming because the changes generally reflect current practice for evaluating the training of entities collecting credible data.

#### Section 6. Recommendations to State Engineer.

- 1. Section 6 was also Section 6, "Interstate Compacts, Court Decrees and Water Rights" in the previous of Chapter 1. The section title was changed to better reflect the provisions in the section.
- 2. The provisions were revised to be consistent with current practice and limitations at W.S. § 35-11-1104(a)(iii) and W.S. § 35-11-302(c). Rather than requiring the Department to make recommendations to the State Engineer, the Department will make such recommendations upon request from the State Engineer.
- 3. The Department does not anticipate that clarifying the roles and responsibilities of the Department and State Engineer will impact Clean Water Act implementation in Wyoming as the revisions reflect current practice.

#### Section 7. Water Quality Standards for Salinity in the Colorado River System.

 Section 7 was Section 31, "Colorado Basin Salinity" in previous version of Chapter 1. The section title was changed to clarify the reference to water quality standards for salinity for waters in the Colorado River System<sup>21</sup>.

<sup>&</sup>lt;sup>23</sup> Wyoming Department of Environmental Quality. Wyoming's Methods for Determining Surface Water Quality Condition. December 21, 2020. Accessed from: <u>https://deq.wyoming.gov/water-quality/watershed-protection/water-quality-assessment/.</u>

- The reference to Chapter 6 was replaced with "Water Quality Standards for Salinity Colorado River Basin<sup>21</sup>," which is incorporated by reference in Section 28 of Chapter 1. Chapter 6 was deleted during a previous rule revision process.
- 3. A reference to Section 28 was added to clarify the incorporation by reference.
- 4. The Department does not anticipate changes to Clean Water Act implementation as a result of the updates to water quality standards for the Colorado River basin.

#### Section 8. Flow and Water Level Conditions.

- 1. Section 8 was Section 11, "Flow Conditions," in the previous version of Chapter 1. The Section title was changed to clarify that some of the provisions apply to water levels in non-flowing waters.
- 2. "Low water levels" was added where appropriate to the clarify which provisions apply to non-flowing waters.
- 3. An exception for enforcement of the standards in authorized mixing zones was added, as some water quality standards may be exceeded in mixing zones in addition to periods when conditions are below low flow or low water levels.
- 4. References to documents (*Technical Guidance Manual For Performing Waste Load Allocation, Book VI, Design Conditions: Chapter 1, Stream Design Flow for Steady-State Modeling, August 1986, USEPA*) were removed, as these documents are not incorporated by reference or necessary to include for implementation of the rule.
- 5. Reference to the Environmental Protection Agency was removed, as the reference is not necessary to understand the different methods for calculating low flow or low water levels.
- 6. The reference to narrative standards was updated from "Sections 14, 15, 16, 17, 28, and 29(b)" to "Section 15," for consistency with the reorganization of Chapter 1.
- 7. Text was added to clarify that the methods for identifying low flow and low water levels are for the development of water-quality based effluent limitations to avoid confusion that the methods identified in Section 8(b) are applicable when evaluating attainment of water quality standards.
- 8. The applicable water quality criteria and method for deriving low flow associated with criteria were included in a table and descriptions of how to calculate the low flow were included as footnotes to improve readability.
- 9. Consistent with EPA guidance<sup>14,17,24,25</sup>, the 1Q10 was added for derivation of water-quality based effluent limits for acute aquatic life criteria, the 7Q10 was specified for derivation of

<sup>&</sup>lt;sup>24</sup> United States Environmental Protection Agency. Technical Support Document for Water Quality-Based Toxics Control. EPA/505/2-90-001. Office of Water. March 1991.Accessed from: https://www3.epa.gov/npdes/pubs/owm0264.pdf.

<sup>&</sup>lt;sup>25</sup> United States Environmental Protection Agency. NPDES Permit Writers' Manual. EPA-833-K-10-001. Office of Water. September 2010. Accessed from: <u>https://www.epa.gov/sites/default/files/2015-</u>09/documents/pwm\_2010.pdf.

water-quality based effluent limits for chronic aquatic life criteria, and the harmonic mean flow was specified for the derivation of water-quality based effluent limitations for drinking water or human consumption of fish criteria. Consistent with EPA guidance<sup>14,24</sup>, a stipulation was added that water-quality based effluent limits for nitrate-nitrogen, nitritenitrogen, and nitrate+nitrite-nitrogen should be calculated using the 7Q10 or 30Q5, as these criteria are based on short-term effects and a harmonic mean flow may not be sufficiently protective.

10. The Department anticipates that water quality-based effluent limits for point source discharges developed to implement Section 402 of the Clean Water Act through the Wyoming Pollutant Discharge Elimination System (WYPDES) Program may be updated to reflect the updated low flow and low water level methods.

#### Section 9. Dilution Allowances – Complete Mixing Scenarios.

- Section 9 is a new Section that was added to incorporate Section 3, "Complete Mixing," of the 2013 *Mixing Zones and Dilution Allowances Implementation Policy*<sup>3</sup> so that the policy can be dissolved upon adoption of Chapter 1.
- 2. The provisions from the implementation policy were reordered and non-substantive revisions made for clarity.
- 3. The provisions include the term "assimilative capacity," a new term and definition added to Section 2.
- 4. The reference to Section 11 for calculating low flow was updated to Section 8 to reflect the reorganization of Chapter 1.
- 5. The term "wetted width" was used instead of "width" for clarity.
- 6. The Department does not anticipate changes to Clean Water Act implementation in Wyoming as a result of incorporating the provisions from the *Mixing Zones and Dilution Allowances Implementation Policy*<sup>3</sup> into Chapter 1.

#### Section 10. Mixing Zones – Incomplete Mixing Scenarios.

- Section 10 incorporates Section 9 "Mixing Zones" of the previous version of Chapter 1 and Section 2, "Concepts," and Section 4, "Incomplete Mixing," of the 2013 *Mixing Zones and Dilution Allowances Implementation Policy*<sup>3</sup> so that the policy can dissolved upon adoption of Chapter 1. The title was revised to clarify that the provisions are specific to mixing zones for incomplete mixing scenarios.
- 2. The terms "assimilative capacity" and "zone of initial dilution" were included, as the terms are now defined in Section 2 of Chapter 1. The provisions also refer to the updated definition of "mixing zone" in Section 2 of Chapter 1.

- 3. The provisions from Chapter 1 and the implementation policy were consolidated, reordered, and non-substantive revisions made to improve clarity. The provisions are primarily derived and are consistent with EPA guidance on mixing zones<sup>17,26</sup>.
- 4. Limitations on mixing zone sizes were retained, but discussion of the default method, field study method, and modeling method were removed because any scientifically defensible method can be used to define a mixing zone, provided the mixing zone meets the other requirements described in the section.
- 5. The Department does not anticipate changes to Clean Water Act implementation in Wyoming as a result of the incorporating the provisions from the 2013 *Mixing Zones and Dilution Allowances Implementation Policy*<sup>3</sup> into Chapter 1 and the minor changes that were made.

#### Section 11. Designated Uses.

- Section 11 incorporates Section 3, "Water Uses," portions of Section 4, "Surface Water Classes and Uses," and portions of Appendix A, "Wyoming Surface Water Classifications," from the previous version of Chapter 1. The title was changed to reflect the terminology used at 40 CFR § 131<sup>8</sup>.
- 2. The bundled classification system for assigning designated uses to surface waters was removed to:
  - a. Simplify the rule. The previous classification system was unnecessarily complex. For example, there were no differences in the designated uses assigned to Class 3 waters (3A, 3B, 3C, or 3D) or Class 4 waters (4A, 4B, 4C);
  - b. Allow greater flexibility in adding or removing designated uses. For example, the previous rule did not include options for removing uses such as industry, agriculture, scenic value, wildlife, or recreation or unbundling human consumption of fish from fisheries uses.
  - c. Allow greater flexibility to create new designated uses and new subcategories of designated uses. For example, under the previous system, creating a new subcategory of aquatic life uses would have required a number of new subcategories of Class 2 waters and potentially Class 3 waters.
  - d. Separate designated uses from antidegradation provisions. Under the previous rule, in certain instances, surface water classes were used to assign designated uses and antidegradation protections (i.e., Class 1 waters were assigned existing quality protections; Class 2 waters were assigned high quality water protections in the Antidegradation Implementation Policy<sup>3</sup>; and all surface waters were assigned existing use protections). However, assigning antidegradation protections based on classification created confusion regarding the designated uses assigned to Class 1

<sup>&</sup>lt;sup>26</sup> United States Environmental Protection Agency Region VIII. Mixing Zones and Dilution Policy. September 1995.

waters and did not recognize that waters other than Class 2 may have high quality protections, as required in Chapter 1.

- 3. The requirement to designate "existing uses," defined in Section 2, the "highest attainable use," also defined in Section 2, and protect downstream surface waters was described, consistent with 40 CFR § 131.10<sup>8</sup>. The previous version of Chapter 1 referenced existing uses and attainable uses; however, the text did not explicitly describe the requirement that existing uses and the highest attainable uses must be designated.
- 4. The reference to the Wyoming Game and Fish Database and details on which designated uses are assigned to specific surface waters were included in the Wyoming Surface Water Designations<sup>2</sup> and the Wyoming Recreation Designated Uses Web Map<sup>5</sup>, which are incorporated by reference in Section 28 of Chapter 1. As provided at 40 CFR 131.6<sup>8</sup>, use designations consistent with the provisions of Section 101(a)(2) and 303(c)(2) of the Clean Water Act are part of the minimum requirements for water quality standards submissions. As such, designated uses assigned to surface waters are included in Wyoming's surface water quality standards via incorporation by reference. Wyoming Surface Water Designations<sup>2</sup> is an updated version of the March 16, 2021 version of the Wyoming Surface Water Designations List<sup>1</sup>. Details regarding the updates made to Wyoming Surface Water Designations<sup>2</sup> are included in Part 3 of this document.
- 5. Designated uses were alphabetized.
- 6. Designated use descriptions were reworded using the phrase "surface water quality shall support" for consistency. The concept of water quality supporting designated uses is consistent with the Clean Water Act and EPA guidance regarding designated uses<sup>27</sup>.
- 7. Aquatic life uses were consolidated so that each surface water has only one assigned aquatic life use rather than up to three. This change was made to simplify the aquatic life uses and recognize that water quality criteria protective of aquatic life uses are intended to protect the entire aquatic community rather than one component of the community<sup>15</sup>. The revised uses are (see Table 1):
  - a. Coldwater aquatic life: previously waters with cold water game fish, nongame fish, and aquatic life other than fish uses (Class 2AB, 2B)
  - b. Warmwater aquatic life: previously waters with warm water game fish, nongame fish, and aquatic life other than fish uses (2ABww, 2Bww) and waters with nongame fish and aquatic life other than fish uses (Class 2C)
  - c. Limited aquatic life: previously waters with aquatic life other than fish uses only (Classes 3A, 3B, and 3C)
  - d. Effluent-dependent aquatic life: previously waters that were effluent-dependent with fish (Class 2D) and without fish (Class 3D)

<sup>&</sup>lt;sup>27</sup>United States Environmental Protection Agency. Water Quality Standards Handbook Chapter 2: Designation of Uses. EPA-823-B-12-002. Office of Water. 2012. Accessed from: <u>https://www.epa.gov/sites/default/files/2014-10/documents/handbook-chapter2.pdf</u>.

Proposed Rule	Previous Rule					
	Cold Water	Warm Water	Nongame	Aquatic Life	Class	
	Game Fish	Game Fish	Fish	Other Than Fish		
Coldwater	Х		Х	Х	2AB, 2B	
Warmwater		v	х	х	2ABww,	
		^			2Bww	
			Х	Х	2C	
Limited				х	2A, 3A, 3B,	
					3C	
Effluent-	If procept	ent-	If procept	v	חכ חכ	
dependent	ii present	ii present	ii present	^	20, 30	

Table 1. Crosswalk depicting proposed aquatic life uses and corresponding aquatic life uses and classifications from the previous version of Chapter 1.

- 8. A modified aquatic life use was added to provide an option to change the aquatic life designated use of a surface water in circumstances where the aquatic life use is not attainable due to one of the six factors, described at 40 CFR § 131.10(g)<sup>8</sup> and Section 12 of Chapter 1. Such circumstances may include streams that have been channelized because they flow through urban areas and streams with hydrologic modifications such as irrigation diversions or dams. A number of states have similar aquatic life uses. For example:
  - a. Ohio<sup>28</sup> has "modified warmwater aquatic" described as "waters that have been subject to a use attainability analysis that have been found to be incapable of supporting and maintaining a balanced, integrated, adaptive community of warmwater organisms due to irretrievable modifications of the physical habitat..."
  - b. Idaho<sup>12</sup> has a "modified" aquatic life use described as "water quality appropriate for an aquatic community that is limited due to one (1) or more conditions set forth in 40 CFR 131.10(g) which preclude attainment of reference streams or conditions."
- 9. The agriculture designated use was separated into livestock and irrigation to recognize that water quality requirements to support livestock are distinct from those necessary to support irrigation uses. For example, livestock may tolerate a certain level of ions that would not support some crops. This change is also more consistent with the Wyoming State Engineer's beneficial uses, which include separate stock and irrigation uses<sup>29</sup>.
- 10. The description of the drinking water designated use was modified to clarify that the use is intended to support human consumption of the water "after conventional drinking water treatment or other acceptable levels of treatment identified by the Department." The previous version of the rule described the use as "maintaining a level of water quality that is suitable for potable water or intended to be suitable after receiving conventional drinking

<sup>&</sup>lt;sup>28</sup> State of Ohio. Water Quality Standards. Chapter 3745-1 of the Administrative Code. December 20, 2023. Accessed from: <u>https://epa.ohio.gov/static/Portals/35/rules/01-all.pdf</u>.

<sup>&</sup>lt;sup>29</sup> Wyoming State Engineer's Office. Wyoming Beneficial Uses. August 19, 2019.

water treatment." However, no surface waters should be expected to be safe for use as drinking water without treatment since surface waters contain pathogens and other contaminants that should be removed prior to consumption. For example, the National Primary Drinking Water Regulations<sup>10</sup> outline the maximum contaminant level for fecal coliform and *E. coli* is zero. Many states have similar descriptions associated with drinking water uses. For example:

- a. Ohio<sup>28</sup> has a public water supply use described as "waters that, with conventional treatment, will be suitable for human intake and meeting federal regulations for drinking water...."
- b. North Dakota<sup>30</sup> has a municipal and domestic water use, described as "waters suitable as a source of water supply for drinking and culinary purposes after treatment to a level approved by the department."

Inclusion of both "conventional drinking water treatment" and "other acceptable levels of treatment identified by the Department" is intended to cover conventional filtration and disinfection under the National Primary Drinking Water Regulations<sup>10Error! Bookmark not defined.</sup>, a cceptable deviations from conventional filtration and disinfection under the National Primary Drinking Water Regulations<sup>10</sup>, as well as other treatments that may be used for water supplies that may not be a public water system regulated under the Safe Drinking Water Act.

- 11. The "fish consumption" use was changed to "human consumption of fish" to provide clarity that the use is intended to protect humans who consume fish.
- 12. "Human consumption of effluent-dependent fish" was added as a new designated use for circumstances where an effluent-dependent waterbody contains fish that are consumed by the public and the water quality of the waterbody does not meet the water quality criteria applicable to the human consumption of fish use outlined in Section 18 of Chapter 1. In such circumstances, the criteria would be based on ambient conditions, as outlined in Section 25 of Chapter 1, provided consumption by humans is supported. Effluent-dependent uses other than effluent-dependent aquatic life and human consumption of effluent-dependent fish were not added because: (1) the use would likely not be assigned to an effluent-dependent surface water (e.g., drinking water); or (2) the water quality criteria to support the uses are all narrative, where interpretation of the criteria can take into consideration the site-specific characteristics of the effluent-dependent waterbody (e.g., industry, irrigation, livestock, scenic value, or terrestrial wildlife).
- 13. The name of the recreation designated use "primary contact recreation" was changed to "full body contact water recreation" to provide more descriptive and meaningful title to the designated use. Use of "full body contact" represents a reversion to the designated use title used in Chapter 1 from 1973 to 2007, when the designated use title was changed to

<sup>&</sup>lt;sup>30</sup> North Dakota Administrative Code. Chapter 33.1-16-02.1. Standards of Quality for Waters of the State. Effective January 1, 2024. Accessed from: <u>https://www.ndlegis.gov/information/acdata/pdf/33.1-16-02.1.pdf</u>.

"primary contact recreation." The term "full body contact" was also included in the Section 2, Definitions, of the previous version of Chapter 1. The name of the recreation designated use "secondary contact recreation" was changed to "limited body contact water recreation" to provide a more descriptive and meaningful title to the designated use. The term "limited body contact" was derived in part from scientific literature evaluating the health risks of limited-contact water recreation,<sup>31</sup> scientific literature that summarizes state recreational uses<sup>32</sup>, and EPA's recommended approach for deriving water quality criteria for non-primary contact exposure scenarios,<sup>33</sup> which describes that states have a number of "uses other than primary contact recreation. These other types have uses have been dubbed secondary contact, limited water contact, limited body contact, partial body contact, incidental contact, or limited contact recreation..."

- 14. The description of the "full body contact water recreation" was changed to remove or clarify ambiguous terminology and include more detail on the types of water contact that is associated with full body contact water recreation. Examples of the types of activities that may be considered full body contact water recreation were also removed to minimize ambiguity. The previous definition of "primary contact recreation" described "any recreational or other surface water use that could be expected to result in ingestion of the water or immersion (full body contact). "Full body contact water recreation" was defined as "any recreational or surface water use in which there is contact with the water sufficient to pose a significant health hazard (i.e. water skiing, swimming)." However, the phrases "any surface water use" and "ingestion" created confusion regarding the types of uses that would be considered a water recreation use given the water quality criteria recommendations<sup>34,35</sup> to protect the use were derived for swimmers. In addition, the phrase "significant health hazard" was not specific to the types of risks associated with surface water quality. The revised description was derived from a combination of the following:
  - a. EPA's 2012 Recreational Water Quality Criteria,<sup>34</sup> which describes primary contact recreation as "activities where immersion and ingestion are likely and there is high

<sup>&</sup>lt;sup>31</sup> Dorevitch, S; Pratap, P; Wroblewski, M; Hryhorczuk, D; Li, H; Liu, L; and Scheff, P. Environmental Health Perspectives. Health Risks of Limited-Contact Water Recreation. Volume 120. Number 2. February 2012. Accessed from: <u>https://ehp.niehs.nih.gov/doi/10.1289/ehp.1103934</u>.

<sup>&</sup>lt;sup>32</sup> Russo, G; Eftim, S; Goldstone, A; Dufour, A; Nappier, S; and Wade, T. Evaluating Health Risks Associated With Exposure to Ambient Surface Waters During Recreational Activities: A Systematic Review and Meta-Analysis. Water Research. 176. 2020. Accessed via: <u>https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10287035/</u>.

<sup>&</sup>lt;sup>33</sup> United States Environmental Protection Agency. Office of Science and Technology. Office of Water. An Approach for Applying EPA's 2012 Recreational Water Quality Criteria Recommendation to Non-Primary Contact Exposure Scenarios. White Paper. 823-B-22-001. January 2022. Accessed from: <u>https://www.epa.gov/system/files/documents/2022-01/rec-criteria-white-paper-final.pdf</u>

<sup>&</sup>lt;sup>34</sup> United States Environmental Protection Agency. Recreational Water Quality Criteria. Office of Water 820-F-12-058. 2012. Accessed from: <u>https://www.epa.gov/sites/default/files/2015-10/documents/rwqc2012.pdf</u>.

<sup>&</sup>lt;sup>35</sup> United States Environmental Protection Agency. Office of Water. Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystins and Cylindrospermopsin. 822-R-19-001. May 2019. Accessed from: <u>https://www.epa.gov/sites/default/files/2019-05/documents/hh-rec-criteria-habs-document-2019.pdf</u>.

degree of bodily contact with the water, such as swimming, bathing, surfing, water skiing, tubing, skin diving, water play by children, or similar water-contact activities;"

- b. Missouri's Water Quality Standards<sup>36</sup>, which define "whole body contact recreation" as "activities involving direct human contact with the waters of the state to the point of complete body submergence. The water may be ingested accidentally and certain sensitive body organs, such as eyes, ears, and the nose, will be exposed to the water..."
- c. Arizona's Water Quality Standards<sup>37</sup>, which define "full-body contact" as "use of a surface water for swimming or other recreational activity that causes the human body to come into direct contact with the water to the point of complete submergence. The use is such that ingestion of the water is likely and sensitive body organs, such as the eyes, ears, or nose, may be exposed to direct contact with the water;" and
- d. Colorado's Water Quality Standards<sup>11</sup>, which defines "primary contact recreation" as "recreational activities where the ingestion of small quantities of water is likely to occur. Such activities include but are not limited to swimming, rafting, kayaking, tubing, windsurfing, water-skiing, and frequent water play by children;"
- 15. The description of "limited body contact water recreation" was changed to remove or clarify ambiguous terminology and refer to waters other than those designated for "full body contact water recreation." Examples of types of activities that may be considered limited body contact water recreation were removed to minimize ambiguity. The previous definition of "secondary contact recreation" described "any recreational or other surface water use in which contact with the water is either incidental or accidental and that would be not expected to result in ingestion of the water or immersion." However, the phrases "incidental or accidental" did not capture some types of recreational water uses that are intentional and that may occur over an extended period such as wading, fishing, or flatwater boating. In addition, as previously described, the term "ingestion" created confusion regarding the types of uses that would be considered water recreation. The revised description was intended to capture water recreation uses other than full body contact water recreation. Therefore, rather than create a separate description, the description uses the term "full body contact water recreation." The description also considered the following:
  - A systematic review and meta-analysis by EPA researchers regarding health risks associated with different levels of water contact that also summarizes state recreational uses<sup>32</sup>;

<sup>&</sup>lt;sup>36</sup> Missouri Code of State Regulations. Missouri Department of Natural Resources. Rules of the Department of Natural Resources. Division 20 – Clean Water Commission. Chapter 7 – Water Quality. September 30, 2023. Accessed from: <u>https://www.sos.mo.gov/CMSImages/AdRules/csr/current/10csr/10c20-7a.pdf</u>.

 <sup>&</sup>lt;sup>37</sup> Arizona Administrative Code. Title 18. Environmental Quality. Chapter 11. Department of Environmental Quality – Water Quality Standards. December 11, 2023. Accessed from: https://apps.azsos.gov/public\_services/Title\_18/18-11.pdf.

- b. An EPA white paper describing how to derive water quality criteria for non-primary contact exposure scenarios<sup>33</sup>
- c. Idaho's Water Quality Standards<sup>12</sup>, which define secondary contact recreation as "water quality appropriate for recreational uses on or about the water and which are not included in the primary contact category. These activities may include fishing, boating, wading, infrequent swimming, and other activities where ingestion of the water is not likely to occur."
- d. Ohio's Water Quality Standards<sup>28</sup>, which define secondary contact as "waters that result in minimal exposure to waterborne pathogens because the waters are: rarely used for water based recreation such as, but not limited to, wading; situated in remote, sparsely populated areas; have restricted access points; and have insufficient depth to provide full body immersion, thereby greatly limiting the potential for water based recreation activities."
- e. Missouri's Water Quality Standards<sup>36</sup>, which define secondary contact recreation as "uses include fishing, wading, commercial and recreational boating, any limited contact incidental to shoreline activities, and activities in which users do not swim or float in the water. The recreational activities may result in contact with the water that is either incidental or accidental and the probability of ingesting appreciable quantities of water is minimal;"
- f. Arizona's Water Quality Standards<sup>37</sup>, which define partial-body contact as "the recreational use of a surface water that may cause the human body to come into direct contact with the water, but normally not to the point of complete submergence (for example, wading or boating.) The use is such that ingestion of the water is not likely and sensitive body organs, such as eyes, ears, or nose, will not normally be exposed to direct contact with the water;" and
- g. Colorado's Water Quality Standards<sup>11</sup>, which define non-primary contact use as "surface waters not suitable or intended to become suitable for primary contact recreation uses. This classification shall be applied only where a use attainability analysis demonstrates that there is not a reasonable likelihood that primary contact uses will occur in the water segment(s) in question within the next 20-year period."
- 16. The "wildlife" designated use was renamed "terrestrial wildlife" to clarify that aquatic wildlife are included within the aquatic life designated uses, defined in part through the term "aquatic community" in Section 2 of Chapter 1.
- 17. The Department anticipates updating several documents and resources to reflect the transition from classifications to designated uses, consolidation of aquatic life uses, and updated designated uses (i.e., recreation uses, terrestrial wildlife, irrigation and livestock). However, since the underlying designated uses are generally not changing or are equivalent to the previous designated uses and water quality criteria applicable to

individual surface waters are not changing, effluent limitations and attainment decisions will generally not change as a result of the modifications to designated uses made to Chapter 1. Thus, the Department does not anticipate significant impacts to Clean Water Act implementation in Wyoming as a result of transitioning from the bundled classification system for assigning designated uses to applying the designated uses independently, combining aquatic life uses, or updating the designated use descriptions. The changes are expected to simplify assessment decisions for aquatic life, as the combined aquatic life uses will no longer require separate consideration of requirements for fish and aquatic life other than fish.

The Department anticipates making updates to the following resources, documents, or future versions of the resources or documents to remove references to surface water classifications, reflect the combined aquatic life uses, and reflect modifications made to designated uses:

- e. Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup>, which describes how the Department will determine attainment of water quality standards for purposes of developing Wyoming's Integrated Clean Water Act Section 305(b) and 303(d) Integrated Report.
- f. Wyoming's Clean Water Act Section 305(b) and 303(d) Integrated Report and the accompanying information, which summarizes water quality assessment decisions and is submitted to EPA on a biennial basis.
- g. 401 Certifications.
- h. Guidance on modifying designated uses, as described in the Use Attainability Analysis Implementation Policy<sup>3</sup>.
- i. Antidegradation implementation methods, as described in the Antidegradation Implementation Policy<sup>3</sup> and Interim Policy on Establishing Effluent Limits for Permitted Point Source Discharges to Class 1 Water Tributaries<sup>4</sup>.
- j. Recreation Designated Uses Web Map<sup>5</sup>.
- k. Discharge permits issued by the WYPDES Program as they are renewed.

### Section 12. Modifications to Designated Uses.

- Section 12 incorporates portions of Section 33, "Reclassifications and Site-Specific Criteria;" Section 34, "Use Attainability Analysis;" Section 4, "Surface Water Classes and Uses," and Appendix A, "Wyoming Surface Water Classifications," that discussed the requirements and process for modifying designated uses from the previous version of Chapter 1. The title was updated to reflect the fact that all the provisions are related to modifying designated uses.
- 2. Provisions in Section 33 and 34 of the previous version of Chapter 1 describing that any person at any time may petition the department or the council to modify uses were revised and the process for the Administrator to modify designated uses and submit the revisions

to EPA were removed. Instead, Section 12 describes that Department may modify designated uses through revision of Chapter 1, either at its discretion or in response to a petition submitted in accordance with the Department's Rules of Practice and Procedure, Chapter 3. The Rules of Practice and Procedure, Chapter 3, describes the process any interested person may use to petition the Council or the Department to promulgate, amend, or repeal any rule. W.S. § 35-11-302(a)(i) authorizes the Administrator to recommend to the Director "rules, regulations, standards and permit systems" that prescribe "water quality standards." W.S. § 35-11-109(a)(i) authorizes the Director to promulgate rules, and W.S. § 35-11-112(a)(i) authorizes the Environmental Quality Council to "promulgate rules after recommendation from the director of the department, the administrators of the various divisions and their respective advisory boards." Since water quality standards include designated uses, water quality criteria, antidegradation provisions, and implementation procedures, as outlined at 40 § CFR 131<sup>8</sup>, modifications to designated uses are considered part of the standards and must be recommended from the Administrator to the Director, after consultation with the Water and Waste Advisory Board, then promulgated via the Environmental Quality Council. With this change to the process, all future modifications to designated uses will be made through revision of Chapter 1. This change will also allow the Wyoming Surface Water Designations<sup>2</sup> to be incorporated by reference, with any changes to designated uses updated when an updated version of the document is incorporated by reference upon adoption of Chapter 1.

- 3. A reference to the requirements in Section 11 regarding the need to designate the highest attainable use and existing uses as well as protect downstream uses was added to ensure these requirements from 40 CFR § 131<sup>8</sup> are considered during modifications to designated uses.
- 4. A reference to the credible data requirements in Section 5 was added to ensure these requirements are considered during modifications to designated uses.
- 5. Requirements associated with modifying designated uses were made consistent with federal regulations at 131.10<sup>8</sup>. This resulted in the following changes:
  - a. A use attainability analysis will only be required when modification of a Clean Water Act Section 101(a)(2), 33 U.S.C. § 1251(a)(2)<sup>6</sup>, designated uses (i.e., aquatic life, human consumption of fish, recreation, and terrestrial wildlife) on waters subject to the jurisdiction of the Clean Water Act, 33 U.S.C § 1251 et seq.<sup>6</sup>, when the modification will result in the application of a less stringent water quality criteria to a waterbody. With these changes, UAAs will not be required when upgrading designated uses, when modifying designated uses that are not specified in Clean Water Act Section 101(a)(2), 33 U.S.C. § 1251(a)(2)<sup>6</sup> (i.e., drinking water, industry, irrigation, livestock, and scenic value uses), or on waters that are not subject to the jurisdiction of the Clean Water Act; and

- b. Modifications to designated uses that are not specified in Clean Water Act Section 101(a)(2), 33 U.S.C. § 1251(a)(2)<sup>6</sup>, that result in less stringent water quality criteria are supported by documentation justifying how the designated uses are protective of the uses and values associated with the Surface Water of the State.
- 6. Modifications to designated uses for Surface Waters of the State that are not subject to the jurisdiction of the Clean Water Act, 33 U.S.C § 1251 et seq.<sup>6</sup>, will also require documentation justifying how the uses are protective of the uses and values associated with the Surface Water of the State. Using the same requirements for waters not subject to the Clean Water Act, 33 U.S.C § 1251 et seq.<sup>6</sup>, as the requirements for waters subject to the Clean Water Act is intended to ensure consistency and ensure that all modifications to designated uses are supported by documentation and justification. Because the requirement is to demonstrate how the designated uses are protective of the uses and values, the documentation necessary to support the use change should be relatively straightforward. Such documentation may include, for example, landowner testimony; surveys from water uses; water quality data; and other information regarding the waterbody.
- 7. The phrase "technology-based effluent limitations" was added to Section 12(c)(vi) to the clarify that the referenced Sections 301(b) and 306 of the Clean Water Act refer to technology-based effluent limits.
- 8. With these changes, all changes to designated uses will be made through revision of Chapter 1. Since the rule revision process satisfies federal requirements regarding public participation, the updated process will ensure compliance with the Clean Water Act and implementing regulations at 40 CFR § 131<sup>8</sup>. In addition, the Department anticipates developing a document that provides details on how to go about modifying designated uses, including through a use attainability analysis and through a use and value demonstration. The guidance document will incorporate relevant aspects of the *Use Attainability Analysis Implementation Policy*<sup>3</sup> as well as new provisions related specifically to the use and value demonstration.

#### Section 13. Antidegradation.

- 1. Section 13 incorporates antidegradation provisions from the following:
  - a. Portions of Section 4, "Surface Water Classes and Uses" specific to Class 1 waters;
  - b. All of Section 7, Class 1 Waters;"
  - c. All of Section 8, "Antidegradation;"
  - d. The title "Outstanding Resource Water" for waters previously referred to as "Class 1" from the 2013 Antidegradation Implementation Policy.<sup>3</sup>
- 2. Three tiers of antidegradation provisions were outlined, consistent with the previous version of Chapter 1, the 2013 Antidegradation Implementation Policy<sup>3</sup>, and 40 CFR §

131.12<sup>8</sup>. Each tier was given a title that describes the protections as well as the applicable Surface Waters of the State.

- 3. Existing use protections were revised as follows:
  - a. Clarified that the existing use provisions are applicable to all Surface Waters of the State. The previous version of Chapter 1 simply stated "water uses in existence on or after November 28, 1975, and level of water quality necessary to protect those uses shall be maintained and protected," but did not specifically describe that this requirement was applicable to all Surface Waters of the State. The Antidegradation Implementation Policy<sup>3</sup> described both "use protected waters," applicable to Classes 2D, 3, and 4, and "existing use protection" applicable to "all Wyoming surface waters."
  - b. The defined term "existing uses" was used rather than "water uses in existence on or after November 28, 1975."
- 4. High quality water protections were revised as follows:
  - a. Protections were made applicable to Surface Waters of the State subject to the jurisdiction of the Clean Water Act. The previous rule did not limit the applicability of the protections to particular Surface Waters of the State. This change was intended to ensure the high-quality water protections were not applied more broadly than is federally required.
  - b. Clarified that the determination of whether the lowered water quality is necessary to accommodate important economic or social development in the area where the water is located must be based on an "analysis of practicable alternatives that would prevent or lessen the degradation associated with the activity," consistent with 40 CFR § 131.12(a)(2)(ii)<sup>8</sup> and the Antidegradation Implementation Policy<sup>3</sup>. The previous rule included the requirement that the "lowered water quality" must be necessary "to accommodate important economic or social development in the area in which the waters are located," and separately described that the Administrator may require an applicant to submit additional information, including an analysis of alternatives. The Antidegradation Implementation Policy<sup>3</sup> described the requirement that an examination of alternatives was necessary and the analysis must demonstrate that there are no other water quality control alternatives that would result in no degradation or less degradation of state waters, are economically, environmentally, and technologically feasible, and the alternatives must be based upon a reasonable level of analysis by project proponent.
- 5. Existing quality protections were revised as follows:
  - a. Changed "point source discharges" to "regulated activities" where appropriate to ensure regulated activities that are not associated with a point sources such as stormwater discharges and dredge and fill activities are included.

- b. Provisions describing that the Department will not authorize existing regulated activities other than dams to "increase the quantity of pollution discharged" was changed to "increase the load or concentration of pollution discharged," to ensure that both the load and concentration of pollution are considered when regulating potential discharges to Outstanding Resource Waters.
- c. Provisions describing that "temporary increases in turbidity that...do not negatively affect existing uses can be permitted," were removed because temporary increases in turbidity are either not required to be permitted, as provide in proposed Chapter 2, Section 2(b)(viii) or are associated with regulated activities the Department is allowed to authorize in proposed Section 13(iii)(D), including stormwater discharges and construction-related discharges.
- d. A provision was added to allow short-term discharges of up to one-year that have been determined by Director to be necessary to address emergency environmental, economic, or public health concerns, provided existing water quality is maintained and protected. The provision is intended to help the Department address emergency situations where allowing a new discharge to an Outstanding Resource Water may be in the best interest of the public and the environment. As an example, during the June 2022 flood in Yellowstone National Park, infrastructure that transported wastewater from Mammoth, Wyoming to Gardiner, Montana for treatment was damaged beyond repair. Since the previous version of Chapter 1 did not allow the Department to authorize new discharges, other than stormwater, construction-related discharges, and temporary increases in turbidity to Outstanding Resource Waters, including all waters in National Parks, the National Park Service was limited, without a change to Chapter 1, in the options available for treating and disposing of wastewater at Mammoth during the period of time the infrastructure was being repaired and rebuilt. In that circumstance, allowing new "short-term discharges" could have provided flexibility to potentially address the emergency situation where a new short-term discharge may have been a more practicable alternative than other available options (e.g., trucking the wastewater, storing the wastewater onsite, constructing new infrastructure that discharged to groundwater rather than surface water).
- e. Clarified that the Department shall limit, to the extent practicable, degradation from new or existing dams constructed on Outstanding Resource Waters or tributaries to Outstanding Resource Waters. Because the previous provisions only described that new or existing dams were allowed to discharge, the applicable degradation requirements regarding pollution from new or existing dams were unclear. The provision clarifies the expectation that the Department will limit degradation from dams to the extent practicable such that expectations can be tailored to the specific circumstances associated with each dam.

- f. Clarified that the Department shall identify nonpoint sources of pollution and best management practices to address nonpoint sources of pollution, consistent with the nonpoint source provisions in Section 3 of Chapter 1. The previous version of Chapter 1 described that "nonpoint sources of pollution to Class 1 waters or tributaries to Class 1 waters shall be controlled by the application of best management practices, adopted in accordance with the Wyoming Continuing Planning Process." As such, the previous provisions did not describe who would identify the nonpoint sources that should be addressed and limited the best management practices that could be used to those adopted in accordance with the Continuing Planning Process. Although states are required to develop CPPs, as described in Section 303(e)(3) of the Clean Water Act, 33 U.S.C. 1313(e)(3)<sup>6</sup>, and 40 CFR § 130.5<sup>7</sup>, states are not required to reference the CPP in water quality standards, nor limit BMPs to address nonpoint sources of pollution to Outstanding Resource Waters to those approved using the process outlined in the CPP.
- 6. The reference to the Antidegradation Implementation Policy was replaced with the following requirements, consistent with 40 CFR § 131.12(b)<sup>8</sup>: the Department must develop, and revise as necessary, antidegradation implementation methods; the Department must provide a minimum of 30 days for public review and comment; and the Department must make such methods and any revisions, available to the public. 40 CFR § 131.12(b)<sup>8</sup> outlines that the State shall develop methods for implementing the antidegradation policy included in the water quality standards; that the State shall provide an opportunity for public involved during development of the methods; and make the methods available to the public. The previous version of the rule referenced the Antidegradation Implementation  $Policy^3$  and did not reference the Interim Policy on Establishing Effluent Limits for Permitted Point Source Discharges to Class 1 Water *Tributaries*<sup>4</sup>. However, the rule did not specify the public process required to revise the policy, did not describe that the policy must be made available to the public, and was unclear as to whether the previous reference was not a formal incorporation by reference. The Department chose not to include the implementation methods as part of the rule because:
  - a. It will reduce the length of the rule;
  - b. It will allow more flexibility in the format of the implementation methods;
  - c. The methods are not required to be in the rule per 40 CFR §  $131^8$ ;
  - d. It will provide additional flexibility in development and implementation of the methods.
- The Department anticipates minor changes to Clean Water Act implementation as a result of the changes to the antidegradation provisions. For Outstanding Resource Waters, the Department (1) has clarity regarding "regulated activities" versus "point source discharges;"
   (2) has clarity that existing regulated activities should not be allowed to increase the load or concentration of pollution discharged; (3) will be able to authorize new short-term

discharges of up to one-year to Outstanding Resource Waters, provided existing quality of the Outstanding Resource Water is maintained; (4) will be able to limit degradation from dams on Outstanding Resource Waters and tributaries to Outstanding Resource Waters to the extent practicable; and (5) has clarity on how to address nonpoint sources of pollution that may degrade Outstanding Resource Waters. Finally, provisions included in the Antidegradation Implementation Policy<sup>3</sup> and the Interim Policy on Establishing Effluent *Limits for Permitted Point Source Discharges to Class 1 Water Tributaries*<sup>4</sup> will be included in a revised Antidegradation Implementation Method, which will be developed considering public comment. As such, Wyoming's Antidegradation Implementation Methods will be consistent with federal regulations at 40 CFR § 131.12(b)<sup>8</sup>. Existing use protections and high-quality water protections are essentially unchanged. Existing use protections are equivalent to the provisions included in the previous version of Chapter 1. For high quality waters, the Antidegradation Implementation Policy<sup>3</sup> required that the selected alternative be based on an "Examination of Alternatives." Thus, requiring an analysis of practicable alternatives that would prevent or lessen the degradation associated with the activity demonstrate that the lowered water quality is necessary is also equivalent to the provisions included in the previous version of Chapter 1 and policy.

### Section 14. Outstanding Resource Waters.

- 1. Section 14 incorporates provisions from:
  - a. Portions of Section 4, "Surface Water Classes and Uses" that describe the factors that will be considered when designating a Class 1 water;
  - b. Portions of Appendix A, "Wyoming Surface Water Classification;" that identify Class 1 waters;
  - c. Portions of the Antidegradation Implementation Policy<sup>3</sup> that describe the process for designating a Surface Water of the State as a Class 1 water (now an Outstanding Resource Water).
- 2. Clarified the process for the public to petition the Department, in accordance with the Department's Rules of Practice and Procedure, Chapter 3, to designate a Surface Water of the State as an Outstanding Resource Water through revision of Chapter 1. The Rules of Practice and Procedure, Chapter 3, describes the process any interested person may use to petition the Council or the Department to promulgate, amend, or repeal any rule. The process is consistent with W.S. § 35-11-302(a)(i), W.S. § 35-11-109(a)(i); W.S. § 35-11-112(a)(i), which authorize the Administrator to recommend to the Director "rules, regulations, standards and permit systems" that prescribe "water quality standards;" authorizes the Director to promulgate rules; and authorizes the Environmental Quality Council to "promulgate rules after recommendation from the director of the department, the administrators of the various divisions and their respective advisory boards." Section 4 (a) of the previous rule described that "In designating Class 1 waters, the Environmental
Quality Council (council) shall consider" a number of factors. However, W.S. § 35-11-112(a)(i) specifies that the Environmental Quality Council "shall promulgate rules after recommendation from the director of the department, the administrators of the various divisions and their respective advisory boards." Thus, the Department must consider nominations of a Surface Water of the State as an Outstanding Resource Water and the Director must propose such designations to the Environmental Quality Council.

- 3. The phrase "and the environment" was added to "other values of present and future benefit to the people" to clarify that the factors the Department shall consider in designating a Surface Water of the State as an Outstanding Resource Water include those are a beneficial to both people and the environment.
- 4. A designation date for each Outstanding Resource Water was included. The date was derived from the rule adoption date when the waterbody was first designated Class 1.
- 5. The Department does not anticipate changes to Clean Water Act implementation by clarifying the process for designating a water as an Outstanding Resource Water or adding the designation date for Outstanding Resource Waters.

### Section 15. Water Quality Criteria Applicable to All Surface Waters of the State.

- Section 15 includes narrative and numeric water quality criteria applicable to all Surface Waters of the State, including all or portions of the following Sections from the previous version of Chapter 1:
  - a. Section 13, Toxic Materials.
  - b. Section 14, Dead Animals and Solid Waste.
  - c. Section 15, Settleable Solids.
  - d. Section 16, Floating and Suspended Solids.
  - e. Section 17, Taste, Odor and Color.
  - f. Section 22, Radioactive Material.
  - g. Section 26, pH.
  - h. Section 28, Undesirable Aquatic Life.
  - i. Section 29, Oil and Grease.

The title is intended to be consistent with other water quality criteria sections.

2. An opening statement was added to clarify that the Department will implement the water quality criteria to ensure Surface Waters of the State, including assigned designated uses, are protected from pollution. Inclusion of provisions ensuring that designated uses are protected is consistent with 40 CFR § 131.11(b)<sup>8</sup>, which describes that "states must adopt those water quality criteria that protect the designated use," that can include "narrative criteria." EPA's Water Quality Standards Handbook<sup>18</sup> provides examples of narrative water quality criteria that include statements to protect designated uses (e.g., "All waters shall be free from toxic, radioactive, conventional, non-conventional, deleterious or other polluting

substances in amounts that will prevent attainment of the designated uses specified.") The previous version of Chapter 1 did not consistently link narrative criteria to designated uses. The term "pollution" was used because the term is defined at W.S. § 35-11-103(c)(i).

- 3. Where appropriate, each of the criteria were modified as follows:
  - a. The criteria specify that the material or substance shall not be present in amounts, concentrations, combinations, etc., that constitute "pollution," defined at § 35-11-103(c)(i).
  - b. The criteria describe that the material or substance shall not be present in amounts that "would impair designated uses." The previous version of Chapter 1 did not use consistent terminology or specify the applicability of the criteria to all designated uses. Some of the criteria included reference to different uses, but not all criteria referenced designated uses. Application of the criteria to designated uses is consistent with 40 CFR § 131.11(b)<sup>8</sup> and EPA guidance<sup>18</sup>.
  - c. Where appropriate, the phrase "attributable to or influenced by the activities of man" was removed because the phrase is not necessary when using the term "pollution," defined at W.S. § 35-11-103(c)(i), because the definition clarifies that "pollution" is "contamination or alteration," which implicates some type of human intervention.
- 4. Provisions from Section 13, Toxic Materials, of the previous version of Chapter 1 were also revised such that the phrase "except for those substances in Section 21(e) and (f) of these regulations" was changed to "except when authorized" because:
  - a. The provisions in Section 21(e) for aquatic pesticides and Section 21(f) for fish toxicants in the previous version of Chapter 1 were moved to Water Quality Rules, Chapter 2; and
  - b. There may be other circumstances where the introduction of toxic materials may be authorized (e.g., initial zone of dilution).
- 5. Provisions from Section 14, "Dead Animals and Solid Waste," of the previous version of Chapter 1 were revised as follows:
  - a. "Dead Animals" and "Solid Waste" were separated because the provisions are different enough to warrant their own subsections.
  - b. "Solid waste" was changed to "waste," a defined term at W.S. § 35-11-103(c)(ii). In the previous version of Chapter 1, "solid waste" was not specifically defined which created ambiguity in interpretation about what constituted "solid waste."
  - c. The provisions for "wastes" were also revised to change the phrase "except as authorized through a 404 permit" to "except when authorized," to encompass other circumstances where material may be added to a Surface Water of the State. For example, the Department may authorize the addition of materials to Surface Waters of the State that are not under the jurisdiction of the Clean Water Act for stabilization purposes.

- 6. Provisions from Section 15, "Settleable Solids," of the previous version of Chapter 1 were also revised to include "excess sediment" to clarify that settleable solids include excess sediment.
- 7. Section 16, "Floating and Suspended Solids," of the previous version of Chapter 1 were revised as follows:
  - a. "Floating and Suspended Solids" was changed to "Floating, Suspended, and Dissolved Materials" because materials in on the water surface, including turbidity and foams, can include more than just "solids." Turbidity, for example, can also include dissolved materials that can scatter light.
  - b. Turbidity was added to the narrative to clarify that the provisions are intended to include turbidity. As described in Part 2, Section 16, of this document, the numeric turbidity increase criteria protective of drinking water and fisheries were removed. WDEQ-WQD did not propose including turbidity within Section 16, Protection of Aquatic Life, because Section 16(b) already includes a number of narrative criteria that can be used to protect aquatic communities from turbidity. Section 16(b) also does not identify any specific contaminants.
- 8. Section 17, "Taste, Odor and Color," of the previous version of Chapter 1 was changed to "Odor and Color" because the "taste" narrative criteria were moved to the drinking water and human consumption of fish criteria in Section 16 and Section 17, respectively. The odor and color criteria were also revised as follows:
  - a. "Produce detectable odor" was changed to "result in unacceptable adverse alterations to the odor" because an odor may be detectable, but not at a level that would constitute "pollution" or that would impair designated uses.
  - b. "Visibly alter the natural color of the water or impart color to skin, clothing, vessels, or structures" was changed to "result in unacceptable adverse alterations" to the "color of the water, skin, clothing, vessels, or structures" because a substance may cause a visible alteration to the color or impart color, but not at a level that would constitute "pollution" or impair designated uses.
- 9. Provisions from Section 22, "Radioactive Material" of the previous version of Chapter 1 include only the water quality criteria from Section 22 not derived from the National Primary Drinking Water Regulations<sup>10</sup>. The criteria from the National Primary Drinking Water Regulations<sup>10</sup> are included in Section 17, Water Quality Criteria for Protection of Drinking Water Use.
- 10. Provisions from Section 26, "pH," from the previous version of Chapter 1 include only the numeric and general narrative criteria. Provisions specific to aquatic life designated use protection are included in Section 16, Water Quality Criteria for Protection of Aquatic Life Uses.

- 11. No additional changes were made to the provisions included from Section 18, "Undesirable Aquatic Life," from the previous version of Chapter 1.
- 12. No additional changes were made to the provisions from Section 29, "Oil and Grease" from the previous version of Chapter 1.
- 13. The Department does not anticipate significant changes to Clean Water Act implementation in Wyoming as a result of the consolidation of, and minor updates to, criteria applicable to all Surface Waters of the State. Wyoming implements narrative criteria for purposes of evaluating attainment under Sections 305(b) and 303(d) of the Clean Water Act, development of restoration plans such as total maximum daily loads under Section 303(d), development of water quality-based effluent limits under Section 402, and water quality certifications under Section 401. Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup> will need to be updated to reflect the reorganization and consolidation of the criteria, however, the methods are sufficiently general that the updates to the criteria will not modify the process the Department uses when determining attainment of water quality criteria.

## Section 16. Water Quality Criteria for Protection of Aquatic Life Uses.

- 1. Section 16 includes narrative and numeric water quality criteria specific to aquatic life designated uses. The criteria include the following from the previous version of Chapter 1:
  - a. Section 21, Protection of Aquatic Life
  - b. Section 23, Turbidity
  - c. Section 24, Dissolved Oxygen
  - d. Section 25, Temperature
  - e. Section 26, pH
  - f. Section 30, Total Dissolved Gases
  - g. Section 32, Biological Criteria
  - h. Appendix B, Water Quality Criteria
  - i. Appendix C, Total Ammonia Nitrogen Criteria
  - j. Appendix D. Dissolved Oxygen Criteria
  - k. Appendix E. References to Develop Site-Specific Criteria and Bioassays
  - I. Appendix F, Conversion Factors to Change Total Recoverable Metal Values to Dissolved Values and Equations for Hardness Dependent Metals
  - m. Appendix G, Equations for pH Dependent Parameters

Part 4 of this document provides a crosswalk table between aquatic life criteria applicable to designated uses in Chapter 1 and the equivalent classifications from the previous version of Chapter 1.

2. An opening statement was added to clarify that the Department will implement the numeric and narrative water quality criteria to ensure Surface Waters of the State designated for aquatic life are protected from pollution. The term "pollution" was used

because it is defined at W.S. § 35-11-103(c)(i). The Department does not anticipate impacts to Clean Water Act implementation as a result of this change because the previous version of Chapter 1 described the purpose as developing effluent limitations for discharges requiring control via permits in the case of points sources and best management practices in the case of nonpoint sources.

- 3. Narrative Criteria. Narrative criteria were included and reworded as necessary for consistency with other narrative water quality criteria applicable to designated uses. Inclusion of narrative criteria is consistent with 40 CFR § 131.11(b)<sup>8</sup>, which describes "states must adopt those water quality criteria that protect the designated use," which can include "narrative criteria." EPA guidance<sup>18</sup> describes that "narrative criteria can serve as the basis for establishing pollutant or chemical-specific water quality based effluent limits (WQBELs) for wastewater or stormwater discharges where the state or authorized Tribe has not adopted chemical-specific criteria for a specific pollutant." The narrative provisions describe:
  - a. Pollution shall not impair aquatic life uses. This general narrative is intended to address pollutants or conditions associated with pollution that may impair aquatic life designated uses. In the previous version of Chapter 1, some aquatic life criteria (e.g., dissolved oxygen, pH) included narrative criteria applicable to waters where numeric criteria did not apply. Inclusion of the general narrative will help to clarify the applicability of the narrative to all aquatic life uses and pollutants.
  - b. Pollution shall not result in adverse acute or chronic effects to aquatic communities. Similar provisions were included in multiple sections of the previous version of Chapter 1 that were specific to a particular pollutant, including Section 21(a)(i), "Protection of Aquatic Life" for ammonia; Section 24, "Dissolved Oxygen;" Section 25, "Temperature;" and Section 26, "pH." This narrative is intended to prevent specific conditions that will impair aquatic life uses and can be used to guide derivation of numeric thresholds for deriving effluent limitations, determining attainment of water quality criteria, and establishing restoration goals.
  - c. Pollution shall not result in adverse alterations to the structure and function of aquatic communities, derived from Section 32, "Biological Criteria" of the previous version of Chapter 1. The following modifications were also made:
    - i. The phrase "must be free from substances, whether attributable to human-induced point source discharges or nonpoint source activities" was replaced with "pollution shall not result in," because "pollution" is defined at W.S. § 35-11-103(c)(i).
    - The phrase "indigenous or intentionally introduced aquatic communities" was replaced with the "aquatic community," because "aquatic community" is defined in Section 2 of Chapter 1.

- d. The Department does not anticipate changes to Clean Water Act implementation as a result of consolidation and minor updates to narrative aquatic life criteria. Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup> will need to be updated to reflect the reorganization and consolidation of the criteria; however, the methods are sufficiently general that the updates to the criteria will not modify the process the Department uses when determining attainment of water quality criteria.
- 4. A new section was added to clarify that for effluent-dependent aquatic life, the relevant water quality criteria in this section shall be applicable unless specifically modified through the process in Section 25(b) of Chapter 1. This statement was added to inform readers that water quality criteria for waters designated for effluent-dependent aquatic life may be modified through the process-based approach for effluent-dependent waters described in Section 25 of Chapter 1. The process-based approach allows changes to the water quality criteria applicable to effluent-dependent aquatic life and human consumption of effluent-dependent fish to be made without modifications to Chapter 1. All other modifications to water quality are made through revision of Chapter 1. The Department does not anticipate changes to Clean Water Act Implementation as a result of clarification regarding modifications to aquatic life criteria for waters designated as effluent-dependent aquatic life.
- 5. Provisions from Section 21(c) of the previous version of Chapter 1 that described the requirement for deriving maximum allowable concentrations for pollutants not listed in Appendix B or C using the references in Appendix E were incorporated into Section 16(b). The following modifications were made:
  - a. "Maximum allowable concentrations" was changed to "effluent limitations for permitted discharges of pollution," to clarify that the provisions apply to derivation of effluent limitations, not determining attainment of designated uses.
  - b. "Class 1, 2, and 3 waters" was changed to "protective of aquatic life" to reflect the removal of the classification system.
  - c. "Bioassay procedures" was changed to the more general "biomonitoring procedures," the term used in Section 303(c)(2)(B) of the Clean Water Act and EPA's implementation guidance<sup>38,39</sup> regarding compliance with Section 303(c)(2)(B).
  - d. Updated references from Appendix E of the previous version of Chapter 1 that were applicable to biomonitoring for determining maximum concentrations were included. The references include:

 <sup>&</sup>lt;sup>38</sup> United States Environmental Protection Agency. Office of Water. EPA 823/4-88-100. Guidance for State Implementation of Water Quality Standards for CWA Section 303(C)(2)(B). December, 1988. Accessed from: <u>https://www.epa.gov/sites/default/files/2018-10/documents/guidance-state-implement-wqs-cwa-sect303c.pdf</u>.
<sup>39</sup> United States Environmental Protection Agency. Region 8. Letter from Max H. Dodson. Compliance with Toxics Requirements of Section 303(c)(2)(B) of the Clean Water Act and the Water Quality Standards Regulation (40 CFR 131.11). January 17, 1990.

- United States Environmental Protection Agency. Technical Support Document for Water Quality-based Toxics Control. EPA 440/4-85032. March, 1991<sup>24</sup>. This is an updated version of U.S. Environmental Protection Agency: Technical Support Document for Water Quality Based Toxics Control. U.S. EPA, 1985<sup>40</sup>.
- United States Environmental Protection Agency. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October, 2002<sup>41</sup>. This is an updated version of U.S. Environmental Protection Agency: Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms. EPA-600/4-85/013. U.S. EPA, 1985<sup>42</sup>.
- iii. United States Environmental Protection Agency. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition, October 2002<sup>43</sup>. This is an updated version of U.S. Environmental Protection Agency: Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Second Edition. EPA-600/4-89/001. U.S. EPA, 1989<sup>44</sup>.
- iv. United States Environmental Protection Agency. National Pollutant Discharge Elimination System Whole Effluent Toxicity Permit Writers' Manual. EPA-833-B-24\_001. July 2024<sup>45</sup>.
- e. As described in additional detail below, the remaining references from Appendix E were removed from Chapter 1.
- f. The Department does not anticipate changes to Clean Water Act implementation in Wyoming from these minor updates to the provisions specifying the use of biomonitoring methods for deriving effluent limitations for instances where numeric criteria are not available.

 <sup>&</sup>lt;sup>40</sup>United States Environmental Protection Agency. Technical Support Document for Water Quality-Based Toxics Control. EPA-440/4-85-032. Office of Water. September 1985. Accessed from: <u>https://www.epa.gov/nscep</u>.
<sup>41</sup>United States Environmental Protection Agency. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October, 2002. Accessed from: <u>https://www.epa.gov/sites/default/files/2015-08/documents/acute-freshwater-and-marine-wetmanual\_2002.pdf</u>.

 <sup>&</sup>lt;sup>42</sup>United States Environmental Protection Agency. Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms. EPA-600/4-85/013. March 1985. Accessed from: <u>https://www.epa.gov/nscep</u>.
<sup>43</sup>United States Environmental Protection Agency. Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms. Fourth Edition, October 2002. Accessed from: <u>https://www.epa.gov/sites/default/files/2015-08/documents/short-term-chronic-freshwater-wet-manual\_2002.pdf</u>.

<sup>&</sup>lt;sup>44</sup>United States Environmental Protection Agency. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Second Edition. EPA-600/4-89/001. March 1989. Accessed from: <u>https://www.epa.gov/nscep</u>.

<sup>&</sup>lt;sup>45</sup>United States Environmental Protection Agency. National Pollutant Discharge Elimination System Whole Effluent Toxicity Permit Writers' Manual. EPA-833-B-24\_001. July 2024. Accessed from: https://www.epa.gov/system/files/documents/2024-06/npdes-wet-permit-writers-manual.pdf.

- 6. Total Dissolved Gases. Numeric criteria from Section 30, "Total Dissolved Gases" of the previous version of Chapter 1 were incorporated. Consistent with the previous version of Chapter 1, numeric criteria are applicable to aquatic life uses, excluding effluent-dependent aquatic life, where fish are part of the aquatic community (i.e., coldwater aquatic life, warmwater aquatic life). In the previous version of Chapter 1, the numeric criteria were assigned to 2AB, 2B, and 2C waters. Narrative, but not numeric criteria, for total dissolved gases criteria are applicable to the new modified aquatic life designated use because waters designated for "modified aquatic life" may be designated as "modified aquatic life" due to the influence of dams, diversions, or other types of hydrologic modifications, as described in EPA's total dissolved gases criteria<sup>46</sup> such that total dissolved gases to Clean Water Act implementation in Wyoming from consolidation of the total dissolved gases criteria.
- 7. Turbidity. Provisions from Section 23, "Turbidity," of the previous version of Chapter 1 were revised.
  - a. The 10 NTU and 15 NTU increase criteria applicable to waters designated for cold water fisheries (previously 2AB and 2B) and warm water fisheries (previously Class 2AB ww, 2B ww, and Class 2C) were removed so that narrative criteria for "floating, suspended, and dissolved materials" in Section 15 and other narrative criteria applicable to aquatic life in Section 15 and Section 16 can be used to protect aquatic life from such materials, of which turbidity is one method of measurement, based on site-specific conditions and requirements. The change was made because:
    - i. The 10 NTU and 15 NTU criteria were not scientifically derived to specifically protect cold and warm water fisheries. The criteria were first adopted into Wyoming's Surface Water Quality Standards in 1979 and appear to be loosely based on historical EPA Suspended Solids and Turbidity Criteria, which describe that for protection of freshwater fish and other aquatic life, "settleable and suspended solids should not reduce the depth of the compensation point for photosynthetic activity by more than 10 percent from the seasonably established norm for aquatic life"<sup>46,47</sup>.
    - ii. The criteria did not reflect site-specific conditions and requirements for aquatic life, or seasonally established norms, as described in EPA's recommended criteria for suspended solids and turbidity<sup>46</sup>. Turbidity values in Wyoming are known to vary considerably within and across waterbodies, even among waterbodies with little

<sup>&</sup>lt;sup>46</sup> United States Environmental Protection Agency. Office of Water. EPA 440/5-86-001. Quality Criteria for Water 1986. May 1, 1986. Accessed from: <u>https://www.epa.gov/sites/default/files/2018-10/documents/quality-criteria-</u> <u>water-1986.pdf</u>

<sup>&</sup>lt;sup>47</sup> United States Environmental Protection Agency. EPA 440-9-76-023. Quality Criteria for Water. July 26, 1976. Accessed from: <u>https://www.epa.gov/sites/default/files/2018-10/documents/quality-criteria-water-1976.pdf</u>.

anthropogenic influences and that support robust populations of cold water game fish and warm water game fish.

- iii. The criteria did not include a duration of time over which the elevated turbidity values would be deleterious to aquatic life, nor include a frequency or number of times the criteria can be exceeded and still protect aquatic life. Water quality criteria, including criteria protective of aquatic life, typically include magnitude, duration, and frequency elements<sup>18</sup>.
- iv. Turbidity is not always an effective way to measure potential impacts of suspended material to aquatic life. Scientific literature evaluating the impacts of suspended sediment on aquatic life often use suspended sediment concentration (SSC)<sup>48</sup> rather than turbidity because turbidity only measures light penetration and may underrepresent impacts when suspended sediment is comprised of larger particles sizes. In addition, "different turbidimeters, even those employing the same instrumentation, often report different measurements even on the same sample<sup>49</sup>."
- v. EPA guidance on sediment criteria reference suspended and bedded sediments (SABS), which includes "clean sediment, suspended sediment, total suspended solids, bedload, turbidity, or eroded materials<sup>18</sup>" as well as derivation of "equilibrium partitioning sediment benchmarks (ESBs)." EPA's guidance on sediment also describes the need to account for variability, including "varying biological availability of chemicals in different sediments<sup>18</sup>." Biological impacts of SABS on aquatic life<sup>50</sup> led to a SABS framework for developing criteria<sup>51</sup>.
- vi. Consistent with 40 CFR § 131.11(b)(2)<sup>8</sup>, states may use narrative criteria where numerical criteria cannot be established.
- b. A specific turbidity narrative protective of aquatic life was not included in Section 16 because:
  - i. Turbidity was included within the narrative criteria for floating, suspended, and dissolved materials included in Section 15 and would be duplicative;

 <sup>&</sup>lt;sup>48</sup> Newcombe, C.P. and Jensen, J.O. Channel Suspended Sediment and Fisheries: A Synthesis for Quantitative Assessment of Risk and Impact. North American Journal of Fisheries Management. November 1996.
<sup>49</sup> State of Oregon Department of Environmental Quality. Water Quality Standards. Turbidity Technical Review.

Summary of Sources, Effects, and Issues Related to Revising the Statewide Water Quality Standard for Turbidity. April 24, 2014. Accessed from: https://www.oregon.gov/deg/FilterDocs/TurbidityTechRev.pdf

<sup>&</sup>lt;sup>50</sup> Berry, W.; Rubinstein, N.; Melzian, B.; and Hill, B. The Biological Effects of Suspended and Bedded Sediment (SABS) in Aquatic Systems: A Review. United States Environmental Protection Agency. Office of Research and Development. Internal Report. August 20, 2003. Accessed from:

https://archive.epa.gov/epa/sites/production/files/2015-10/documents/sediment-appendix1.pdf

<sup>&</sup>lt;sup>51</sup> United States Environmental Protection Agency. Office of Water. Office of Research and Development. EPA-822-R-06-001. Framework for Developing Suspended and Bedded Sediments (SABS) Water Quality Criteria. May 2006. Accessed from: <u>https://cfpub.epa.gov/ncea/risk/recordisplay.cfm?deid=164423</u>.

- ii. No other specific contaminants are identified with the narrative criteria in Section 16; and
- iii. Inclusion of turbidity, but not other water quality metrics representative of suspended sediment, would suggest turbidity is the preferred water quality metric for protection of aquatic life from suspended solids when it is not.
- c. Exceptions to the turbidity criteria for the Guernsey "silt run," "short-term increases in turbidity that have been determined by the Administrator to have only a minimal effect on water uses" and references to the *Turbidity Implementation Policy*<sup>3</sup> were removed because the process to allow short-term sediment disturbances, including turbidity, were moved to Water Quality Rules, Chapter 2, Permit Regulations for Discharges to Wyoming Surface Waters. A new subsection was added to Chapter 2, Section 2(b), Exclusions. The provisions describe the duration and types of work activities allowed to have short-term sediment disturbances. Similar to the provisions in the previous version of Chapter 1 and the *Turbidity Implementation Policy*<sup>3</sup>, as well as the turbidity waiver process, the revised process requires notification to the Department and confirmation from the Department to secure the exemption. The process is similar to a No-Exposure stormwater certification. Upon adoption of Chapter 1, the *Turbidity Implementation Policy*<sup>3</sup> will be dissolved.

The Department anticipates minor changes to Clean Water Act implementation in Wyoming as a result of the removal of numeric turbidity criteria. The Department will need to make updates to Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup> to reflect the consolidation of the criteria in Chapter 1. However, WDEQ anticipates implementing the proposed narrative provisions, including those for floating, suspended, or dissolved materials in Section 15 and aquatic life protections in Section 16, in a similar manner to that described in *Wyoming's Methods for Determining* Surface Water Quality Condition<sup>23</sup> (Assessment Methodology). As described in the Assessment Methodology, WDEQ-WQD uses credible data and a multiple-lines-ofevidence approach to make designated use support determinations using turbidity data. For aquatic life, evaluation of turbidity data requires consideration of biological and physical data rather than just consideration of turbidity data. Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup> also describes the process for using biological communities to determine attainment of narrative criteria for pollutants such as organic and inorganic substances, which will continue to be used once the numeric turbidity increase criteria have been removed.

WDEQ utilized this multiple-lines-of-evidence approach in the December 2023 Badwater Creek Project Water Quality Criteria Evaluation Report<sup>52</sup> that resulted in the inclusion of a 17.1-mile segment of Badwater Creek on Wyoming's 2024 303(d) of Impaired Waters for not meeting its aquatic life uses due to a number of causes, including turbidity. In the evaluation of narrative provisions in Section 16, Floating and Suspended Solids, and Section 32, Biological Criteria, of the 2018 version of Chapter 1, which are similar to the proposed narrative provisions in Section 15 and Section 16 of Chapter 1, WDEQ-WQD: (1) documented degraded biological conditions of both the macroinvertebrate and fish communities by comparing communities upstream and downstream of the source of elevated turbidity; (2) summarized median and mean turbidity data collected over 15 sampling events; (3) provided photographs of typical elevated turbidity conditions; (4) noted the increase in turbidity upstream and downstream of the source; (5) described that the elevated turbidity occurred during all hydrologic conditions, including baseflow and runoff, suggesting that the turbidity increase was not due to precipitation events, runoff events, or geology; (6) compared turbidity increases observed in similar tributary/confluence scenarios; and (7) outlined how suspended and bedded sediments can impact and degrade aquatic communities.

WDEQ-WQD routinely uses a similar multiple lines evidence approach to determine attainment of narrative criteria and assess designated use support. As another example, 3 segments of Crow Creek in the South Platte Basin totaling 7.8-miles were identified as not meeting their aquatic life uses due to sedimentation/siltation. In this assessment<sup>53</sup>, macroinvertebrates and physical data (bed material size; bankfull stream power; ratio of run and riffle slopes to reachwide channel slope; bankfull channel width; depositional feature; bankfull pool depth; reachwide slope; channel scour) were used to determine attainment of narrative criteria. WDEQ also translated the applicable narrative criteria into a restoration plan in the Crow Creek Watershed Sediment Total Maximum Daily Loads<sup>54</sup>. In this plan, WDEQ-WQD used three categories of targets to meet narrative water quality standards. One was a direct measure of the health of the aquatic community; one represented stream-bottom sediment deposition that consisted of

https://gis.deq.wyo.gov/MAPS/WQD\_ACTIVE\_PROJECTS/IR/AR/WYBH\_BadwaterCreekAlkaliCreek\_2020.pdf

<sup>&</sup>lt;sup>52</sup> Wyoming Department of Environmental Quality. Water Quality Division. Badwater Creek Project Water Quality Criteria Evaluation Report. December 2023. Accessed from:

<sup>&</sup>lt;sup>53</sup> Wyoming Department of Environmental Quality. Water Quality Division. Water Quality Condition and Designated Use Determination for Crow Creek, South Platte Basin, 2007-2008. June 2009. Accessed from: https://gis.deq.wyo.gov/MAPS/WQD\_ACTIVE\_PROJECTS/IR/AR/WYSP\_CrowCreek\_2009.pdf

<sup>&</sup>lt;sup>54</sup>Wyoming Department of Environmental Quality. Water Quality Division. Technical Support Provided by Tetra Tech, Inc. Crow Creek Watershed Sediment Total Maximum Daily Loads. September 19, 2022. Accessed from: <u>https://drive.google.com/file/d/1eScOkx4K5QUrLhAABaqRX4mAYOXitUbD/view?pli=1</u>

four indicators; and one represented water column sediment concentration that was the TMDL target.

WDEQ also may, as resources allow, develop more detailed Assessment Methods for determining attainment of narrative criteria protecting designated uses from excess turbidity.

Clean Water Act Section 401 certifications are unlikely to be impacted, as the certifications typically include conditions that rely on narrative criteria to limit discharges of organic and inorganic substances that may be released. WYPDES permits, including stormwater permits, also generally do not include effluent limits based on the 10 or 15 NTU increase criteria due to potential inconsistencies in how turbidity is measured. Instead, WYPDES permits often include effluent limits based on total suspended solids. The turbidity waiver process will be discontinued and the WYPDES Program will oversee the new process for obtaining coverage under the exclusion process in Water Quality Rules, Chapter 2, Permit Regulations for Discharges to Wyoming Surface Waters.

8. pH. Numeric pH criteria from Section 26, "pH," and Appendix B, "Water Quality Criteria," from the previous version of Chapter 1 were incorporated. Section 26, "pH" of the previous version of Chapter 1 outlined that the pH criteria were applicable to all Surface Waters of the State and as such, have also been included Section 15 of Chapter 1. The pH criteria specific to aquatic life were identified as chronic aquatic life in Appendix B of the previous version of Chapter 1 and are based on EPA recommended criteria for aquatic life<sup>47</sup> (see Part 4 of this document for aquatic life criteria crosswalk). Narrative criteria included in Section 26 of the previous version of Chapter 1 are included in the narrative criteria protective of aquatic life uses at the beginning of Section 16; however, pH was not specifically listed as a potential contaminant because no specific contaminants are included in the narrative criteria.

The "more than once every three years" exceedance frequency applicable to pH was also clarified. In the previous version of Chapter 1, the one-in-three-year-exceedance frequency was included in Section 21, "Protection of Aquatic Life," which described "Specific numeric standards for a number of toxicants are listed in the 'Aquatic Life Acute Value' and 'Aquatic Life Chronic Value' columns in Appendix B of these regulations. These standards apply to all Class 1, 2 and 3 waters. For these pollutants, the chronic value (four (4) day average concentration) and the acute value (one (1) hour average concentration) shall not be exceeded more than once every three (3) years." pH was included as a "Chronic Value" in Appendix B. The one-in-three-year exceedance frequency is consistent with EPA guidance

regarding the three elements of water quality criteria<sup>18</sup> and the ability of aquatic communities to tolerate exceedances once every three years on average<sup>15</sup>.

Continued application of the one-in-three-year exceedance frequency for pH is appropriate because it (1) recognizes that aquatic ecosystems can, and do, tolerate periodic excursions above the pH requirements protective of aquatic life included in Wyoming's surface water quality standards; (2) is consistent with the one-in-three-year exceedance frequency applicable to other aquatic life criteria in Wyoming's surface water quality standards, helping to facilitate consistent implementation of aquatic life criteria; (3) is consistent with EPA aquatic life criteria guidance<sup>15,24,40</sup> that recommends a one-in-three-year exceedance frequence frequency for toxics criteria based on the ability of aquatic ecosystems to recover from disturbance, including disturbances unrelated to toxic pollutants.

The Department does not anticipate changes to Clean Water Act implementation in Wyoming as a result of clarifying the one in three-year exceedance frequency for pH as the criteria is currently implemented with the one-in-three-year exceedance frequency.

- 9. Temperature. Provisions from Section 25, "Temperature," from the previous version of Chapter 1 were incorporated. Numeric criteria from the previous version of Chapter 1 were incorporated into a table to improve readability. Consistent with the previous version of Chapter 1, numeric temperature criteria applicable to cold water fisheries (i.e., 2AB, and 2B waters) are applicable to the coldwater aquatic life use, and numeric temperature criteria applicable to warm water fisheries from the previous version of Chapter 1 (i.e., 2AB ww, 2B ww, and 2C waters) are applicable to the warmwater aquatic life use (see Part 4 of this document for aquatic life criteria crosswalk). Also consistent with the previous version of Chapter 1, narrative, but not numeric temperature criteria, are applicable to other aquatic life uses. Narrative criteria are applicable to the new modified aquatic life use because waters designated for modified aquatic life may have cold water fish, warm water fish, or no fish. As such, numeric temperature criteria that are specific to cold water or warm water fish are not appropriate. Narrative criteria that can be applied to temperature are included in the narrative criteria protective of aquatic life uses at the beginning of Section 16. In addition, the following modifications were made to the criteria:
  - a. A "more than once every three years" exceedance frequency was added to (1) be consistent with EPA guidance regarding inclusion of magnitude, duration, and frequency elements to water quality criteria<sup>18</sup>; (2) recognize that aquatic ecosystems can, and do, tolerate periodic excursions above the temperature requirements protective of coldwater aquatic life and warmwater aquatic life included in Wyoming's surface water quality standards; (3) be consistent with the one-in-three-year exceedance frequency applicable to other aquatic life criteria in Wyoming's surface water quality standards, helping to facilitate consistent implementation of aquatic life

criteria; (4) be consistent with EPA aquatic life criteria guidance<sup>15,24,40</sup> that recommends a one-in-three-year exceedance frequency for both acute and chronic toxics criteria and provides additional considerations regarding exceedance frequencies based on the ability of aquatic ecosystems to recover from disturbance. The one-in-three-year exceedance frequency is also consistent with other states' exceedance frequencies. For example, Colorado's temperature criteria<sup>11</sup> provide that the mean weekly average temperature and daily maxima criteria not be exceeded more than once every three years.

EPA's 1985 Guidelines<sup>15</sup>, which provides guidance on deriving acute and chronic aquatic life criteria for toxic pollutants, describes "Most aquatic ecosystems can probably recover from most exceedances in about three years." Many states, including Wyoming, have used this as the basis for applying a one-in-three-year exceedance frequency to aquatic life criteria. EPA's 1985 Guidelines<sup>15</sup> do not provide a rationale for applying the same one-in-three-year exceedance frequency to chronic versus acute criteria. The 1985 Guidelines<sup>15</sup> include general information applicable to derivation of an exceedance frequency, describing that the exceedance frequency should be "based on the ability of aquatic ecosystems to recover from the exceedances, which will depend in part on the magnitude and durations of the exceedances," and "the abilities of ecosystems to recover differ greatly, and depend on the pollutant, the magnitude and duration of the exceedance, and the physical and biological features of the ecosystem. Documented studies of recoveries are few, but some systems recover from small stresses in six weeks whereas other systems take more than ten years to recover from severe stress." This discussion references EPA's 1985 Technical Support Document For Water Quality-Based Toxics Control<sup>40</sup>.

EPA's 1985 Technical Support Document For Water Quality-Based Toxics Control<sup>40</sup>24 notes the challenges of predicting the number of events that may exceed criteria to inform an appropriate exceedance frequency, but ultimately concludes that "most biological communities would not be sufficiently affected if on the average there was one event every three years." EPA's 1985 Technical Support Document<sup>40</sup> also describes that in recovery studies where there was no toxicant residual present, which would be the case for temperature, "most fish species could repopulate in as few as three weeks if conditions were advantageous." In addition, the document describes "It is possible in very select situations that a frequency of once every one or two years on average might be acceptable" and "for such cases, it would have to be demonstrated that the affected area was small and the potential for biological recovery was high."

The 1991 updated version EPA's Technical Support Document for Water Quality-Toxics Control<sup>24</sup> also describes "EPA recommends a once in 3-years average frequency of excursions of both acute and chronic criteria" and outlines that the allowable frequency depends on site-specific factors, including whether the system is exposed to high degree of natural disturbances such as floods and droughts such that the resident species are predisposed to recover more rapidly because species that are able to recolonize and reproduce quickly, or to avoid disturbances, can persist there. The 1991 document outlines that "although the average frequency of one criterion every 3 years should usually be protective of lotic communities, more frequent excursions might be acceptable in certain situations." Such situations include lotic systems with refugia such as well-developed riparian zones, connected flood plains and meanders, snags, etc. Such systems can recover more rapidly from disturbances than segments without refugia because organisms are better able to avoid disturbances and return or repopulate. Another situation includes lower-order (i.e., headwater) streams where, because of their natural high variability, communities are comprised of species that have short life cycles and/or high dispersal ability and can recover from major disturbances in a year or even less. Thus, many lower-order streams, particularly those where refugia are available, may be able to tolerate somewhat higher excursion frequencies. For example, discharges to lower order streams, particularly those for which refugia are available, may be able to tolerate somewhat higher excursion frequencies, unless other considerations are important."

Given that most of Wyoming waters are (1) likely adapted to natural excursions of the temperature criteria due low flows or elevated ambient air temperatures; (2) likely to be adapted to natural disturbances such as droughts and floods; (3) lower order/headwaters streams or reservoirs with relatively short residence times where aquatic communities typically have shorter life cycles and/or high dispersal abilities; (4) likely to have refugia since significant alterations of Wyoming's waters are limited due to the low population and development in the state, the proposed one-in-three year exceedance frequency should allow more than sufficient time for systems to recover from excursions of the acute and chronic temperature criteria elements.

- b. The 20 Celsius maxima criteria applicable to coldwater aquatic life was revised to a twohour average rather than a not-to-exceed maximum. This revision was made:
  - i. To begin the process of updating the temperature criteria to include acute and chronic components consistent with EPA recommended temperature criteria protective of aquatic life<sup>46</sup> as well as other aquatic life criteria that protect against both acute and chronic effects<sup>18</sup>. As summarized in *Development of Thermal Tiers*

and Regulatory Criteria for Wyoming Stream Fishes<sup>55</sup>, temperature criteria protective of aquatic life are often expressed as acute daily maxima (DM), derived by calculating the median of literature-derived lethal value and subtracting a margin of safety, and chronic maximum weekly average temperatures (MWAT), derived with consideration of the literature-derived optimum, upper optimum, preferred average, and avoided high temperatures. DM values can range from a 24-hour period to an instantaneous measurement. The State of Colorado, which has relatively similar fisheries and thermal regimes as Wyoming, applies the DM as a 2hour duration<sup>11</sup>.

**ii.** To begin the process of updating Wyoming's temperature criteria to reflect the latest scientific knowledge regarding the thermal tolerances of Wyoming fish. As identified in *Development of Thermal Tiers and Regulatory Criteria for Wyoming Stream Fishes*<sup>55</sup>, the literature-derived DM for cold water game fish were all above the 20 °C criteria (Table 2). The same is also true for all nongame fish that may be associated with cold water game fish and the coldwater aquatic life use (Table 3). Thus, applying the 20 °C criteria as a 2-hour duration is sufficiently protective of both cold water game fish and any associated nongame fish. A 2-hour duration could not be applied to the 30 °C criteria for warmwater aquatic life because White Crappie and Yellow Perch have DM values below the 30 °C criteria (Table 4).

Common Name	Scientific Name	DM (°C)
Cutthroat Trout	Oncorhynchus clarkii	22.31
Brook Trout	Salvelinus fontinalis	21.68
Brown Trout	Salmo trutta	24.92
Rainbow Trout	Oncorhynchus mykiss	23.77
Burbot	Lota lota	25.42
Lake Trout	Salvelinus namaycush	22.58
Kokanee	Oncorhynchus nerka	22.93
Arctic Grayling	Thymallus arcticus	21.00
Golden Trout	Oncorhynchus aguabonita	25.50

Table 2. Literature-derived<sup>55</sup> daily maximum (DM) values for cold water game fish in Wyoming.

<sup>&</sup>lt;sup>55</sup> Peterson, C.M. Masters Thesis, University of Wyoming. Development of Thermal Tiers and Regulatory Criteria for Wyoming Stream Fishes. May 2017.

Common Name	Scientific Name	DM (°C)
Longnose Sucker	Catostomus	24.80
Northern Leatherside Chub	Lepidomeda copei	27.76
Mottled Sculpin	Cottus bairdi	27.85
Longnose Dace	Rhinichthys cataractae	28.60
Brook Stickleback	Culaea inconstans	28.60
Creek Chub	Semotilus atromaculatus	28.60
White Sucker	Catostomus commersoni	28.82
Common Shiner	Luxilus cornutus	28.97
Mountain Sucker	Catostomus platyrhynchus	29.00
Johnny Darter	Etheostoma nigrum	29.04
Orangethroat Darter	Etheostoma spectabile	29.98
Finescale Dace	Phoxinus neogaeus	30.00
Emerald Shiner	Notropis atherinoides	30.15
Sand Shiner	Notropis stramineus	30.20
Gizzard Shad	Dorosoma cepedianum	30.72
Flannelmouth Sucker	Catostomus latipinnis	31.15
Golden Shiner	Notemigonus crysoleucas	31.56
Kendall Warm Springs Dace	Rhinichthys osculus thermalis	31.75
Speckled Dace	Rhinichthys osculus	31.82
Shorthead Redhorse	Moxostoma macrolepidotum	31.84
Utah Chub	Gila atraria	31.86
Fathead Minnow	Pimephales promelas	31.88
Spottail Shiner	Notropis hudsonius	31.94
Hornyhead Chub	Nocomis biguttatus	32.80
Quillback	Carpiodes cyprinus	33.54
Bigmouth Shiner	Notropis dorsalis	33.80
Common Carp	Cyprinus carpio	33.88
Plains Topminnow	Fundulus sciadicus	34.20
Roundtail Chub	Gila robusta	34.50
Western Mosquitofish	Gambusia affinis	34.80
Red Shiner	Cyprinella lutrensis	35.00
Grass Carp	Ctenopharyngodon idella	35.95
Plains Minnow	Hybognathus placitus	37.12
Plains Killifish	Fundulus zebrinus	38.45

Table 3. Literature-derived<sup>55</sup> daily maximum values (DM) values for nongame fish in Wyoming.

Common Name	Scientific Name	<b>DM</b> (°C)
Yellow Perch	Perca flavescens	28.23
White Crappie	Pomoxis annularis	29.48
Northern Pike	Esox lucius	30.00
Walleye	Sander vitreus	31.68
Freshwater Drum	Aplodinotus grunniens	32.02
Black Crappie	Pomoxis nigromaculatus	32.10
Pumpkinseed Sunfish	Lepomis gibbosus	32.74
Bluegill	Lepomis macrochirus	33.14
Smallmouth Bass	Micropterus dolomieu	33.74
Largemouth Bass	Micropterus salmoides	34.06
Rock Bass	Ambloplites rupestris	34.28
Green Sunfish	Lepomis cyanellus	35.12
Black Bullhead	Ameiurus melas	35.30
Channel Catfish	Ictalurus punctatus	35.76

Table 4. Literature-derived<sup>55</sup> daily maximum values (DM) values for warm water game fish in Wyoming.

- c. The statement describing that the criteria apply at all times and at all depths of the receiving water except for low flows (Section 9), mixing zones (Section 11), and natural conditions was removed because:
  - i. The exceptions are addressed in other Sections of Chapter 1 (e.g., Section 8 and Section 10);
  - ii. Waterbodies naturally have localized areas, including the upper portions of lakes and reservoirs, where temperatures exceed numeric criteria where there is still sufficient habitat with suitable temperatures to support aquatic life; and
  - iii. Such requirements are not included in EPA recommended temperature criteria protective of aquatic life<sup>46</sup>.
- d. The Department does not anticipate that the changes to the temperature criteria will significantly impact Clean Water Act implementation in Wyoming. Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup>, which describes how the Department will determine attainment of water quality standards for purposes of developing Wyoming's Integrated Clean Water Act Section 305(b) and 303(d) Report, describes that the Department "uses a weight of evidence approach" to determine whether temperature is "causing an impairment to fisheries or aquatic life other than fish uses and whether the source(s) are anthropogenic or natural. This process includes an evaluation of representative credible data and information." In other words, evaluation of temperature data also requires consideration of biological and physical data rather than just consideration of temperature will now consider the one-

in-three-year exceedance frequency and the two-hour duration for waters designated for coldwater aquatic life. Clean Water Act Section 401 certifications typically include narrative provisions that rely on narrative criteria to limit discharges that may result in elevated temperatures. WYPDES permits that include temperature effluent limits will be evaluated to determine whether changing to a 2-hour average may impact water quality-based effluent limits for temperature.

10. Dissolved Oxygen. Provisions from Section 21, "Protection of Aquatic Life," Section 24, "Dissolved Oxygen," and Appendix D, "Minimum Dissolved Oxygen Criteria\* (mg/L)" of the previous version of Chapter 1 were incorporated. Consistent with the previous version of Chapter 1, numeric dissolved oxygen criteria applicable to cold water fisheries from the previous version of Chapter 1 (i.e., 2AB, and 2B waters) are applicable to the coldwater aquatic life use, and numeric dissolved oxygen criteria applicable to warm water fisheries from the previous version of Chapter 1 (i.e., 2AB, and 2B waters) are applicable to the coldwater aquatic life use, and numeric dissolved oxygen criteria applicable to warm water fisheries from the previous version of Chapter 1 (i.e., 2AB ww, 2B ww, and 2C waters) are applicable to the warmwater aquatic life use (see Part 4 of this document for aquatic life criteria crosswalk). Also consistent with the previous version of Chapter 1, narrative, but not numeric dissolved oxygen criteria, are applicable to other aquatic life uses. Narrative dissolved oxygen criteria are applicable to the new modified aquatic life use because waters designated for modified aquatic life may have cold water fish, warm water fish, or no fish. As such, application of numeric dissolved oxygen criteria is not appropriate. Narrative criteria that can be applied to dissolved oxygen are included in the narrative criteria protective of aquatic life uses at the beginning of Section 16.

A "more than once every three years" exceedance frequency was also clarified. In the previous version of Chapter 1, the one-in-three-year-exceedance frequency was included in Section 21, "Protection of Aquatic Life," which described "Specific numeric standards for a number of toxicants are listed in the 'Aquatic Life Acute Value' and 'Aquatic Life Chronic Value' columns in Appendix B of these regulations. These standards apply to all Class 1, 2 and 3 waters. For these pollutants, the chronic value (four (4) day average concentration) and the acute value (one (1) hour average concentration) shall not be exceeded more than once every three (3) years." Dissolved oxygen was listed as an "Chronic Value" in Appendix B. The one-in-three-year exceedance frequency is consistent with EPA guidance regarding the three elements of water quality criteria<sup>17</sup> and the ability of aquatic communities to tolerate exceedances once every three years on average<sup>15</sup>.

Application of the one-in-three-year exceedance frequency for dissolved oxygen is appropriate because it (1) recognizes that aquatic ecosystems can, and do, tolerate periodic excursions above the pH requirements protective of aquatic life included in Wyoming's surface water quality standards; (2) is consistent with the one-in-three-year exceedance

frequency applicable to other aquatic life criteria in Wyoming's surface water quality standards, helping to facilitate consistent implementation of aquatic life criteria; (3) is consistent with EPA aquatic life criteria guidance<sup>15,24,40</sup> that recommends a one-in-three-year exceedance frequency for toxics criteria based on the ability of aquatic ecosystems to recover from disturbance, including disturbances unrelated to toxic pollutants.

The following modifications were made to the criteria:

- a. The reference to EPA 440/5-86-003, 1986, Ambient Water Quality Criteria was removed for consistency with other water quality criteria because references associated with other water quality criteria are not included in Chapter 1.
- b. A new footnote (a) was added that allows dissolved oxygen concentrations in the lower portion of a lake or reservoir to be less than the dissolved oxygen criteria if, when those excursions occur, there is adequate habitat for aquatic life where both the applicable biologically based temperature and dissolved oxygen criteria are met. The provision was added to:
  - i. Recognize that low dissolved oxygen levels occur naturally in the lower portion of stratified lakes and reservoirs because the middle layer acts as a barrier between the upper and lower portion of the waterbody. With the barrier, the lower portion of the waterbody is cut-off from oxygen exchange with the atmosphere and cannot supply its own oxygen because it is often too dark for plants and algae to grow and produce oxygen by photosynthesis<sup>56,57</sup>.
  - ii. Align Wyoming's water quality standards with other states' water quality standards that recognize naturally occurring low dissolved oxygen levels in the lower portion of lakes and reservoirs. For example,
    - Colorado has a footnote to their dissolved oxygen criteria<sup>11</sup> that describes "In the lower portion of a lake or reservoir, dissolved oxygen may be less than the applicable standard as long as there is adequate refuge. Adequate refuge means that there is concurrent attainment of the applicable Table I temperature and dissolved oxygen criteria<sup>11</sup>."
    - 2. Idaho has exclusions that their dissolved oxygen criteria do not apply in "those waters of the hypolimnion in stratified lakes and reservoirs<sup>12</sup>."

<sup>&</sup>lt;sup>56</sup> Lake Stratification and Mixing. Lake Notes. Illinois Environmental Protection Agency. Northeastern Illinois Planning Commission. DWPC-Lake and Watershed Unit. November 1997. Accessed from: <u>https://epa.illinois.gov/content/dam/soi/en/web/epa/documents/water/conservation/lake-notes/lake-stratification.pdf</u>.

<sup>&</sup>lt;sup>57</sup> Rabaey, J.; Domine, L.; Zimmer, K.; Cotner, J. Winter Oxygen Regimes in Clear and Turbid Shallow Lakes. JGR Biogeosciences. 2021. Accessed from: <u>https://agupubs.onlinelibrary.wiley.com/doi/epdf/10.1029/2020JG006065</u>

The Department does not anticipate that removing a reference and adding a provision to allow the lower portion of a lake or reservoir to exceed the criteria provided there is adequate habitat for the dissolved oxygen criteria will significantly impact Clean Water Act implementation in Wyoming. Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup>, which describes how the Department will determine attainment of water quality standards for purposes of developing Wyoming's Integrated Clean Water Act Section 305(b) and 303(d) Report, describes that the Department "uses a weight of evidence approach" to determine whether dissolved oxygen is "causing an impairment to fisheries or aquatic life other than fish uses and whether the source(s) are anthropogenic or natural. This process includes an evaluation of representative credible data and information." In other words, evaluation of dissolved oxygen data also requires consideration of biological and physical data rather than just consideration of dissolved oxygen data. The Department is in the process of developing a more detailed dissolved oxygen implementation method that will be incorporated into Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup> to provide guidance on how to evaluate attainment of the criteria with the new provision. The method will describe how to collect sufficient temperature and dissolved oxygen vertical profile data; how to evaluate the dissolved oxygen data to determine whether evaluation of adequate habitat is necessary; provide guidance on how to derive biologically-based temperature requirements for fish from literature-derived thresholds<sup>55</sup>; and how to determine whether adequate habitat to protect aquatic life exists<sup>58</sup>. As such, when considering dissolved oxygen data, the Department will also now consider the temperatures within the vertical profile and the temperature needs of the fish present. Clean Water Act Section 401 certifications typically include narrative provisions that rely on narrative criteria to limit discharges that may result in elevated dissolved oxygen. Very few WYPDES permitted facilities discharge directly to a lake or reservoir and generally do not include water quality-based effluent limits derived from the dissolved oxygen criteria. If such an effluent limit is included in a permit, the water quality-based effluent limits will be evaluated to determine whether low dissolved oxygen in the lower portion of lakes or reservoirs needs to be considered.

11. Ammonia. Provisions from Section 21 (a) associated with ammonia of the previous version of Chapter 1 were incorporated. Consistent with the previous version of Chapter 1, numeric ammonia criteria applicable to cold water fisheries from the previous version of Chapter 1 (i.e., 2AB, and 2B waters) are applicable to the coldwater aquatic life use, and numeric ammonia criteria applicable to warm water fisheries from the previous version of Chapter 1 (i.e., 2AB ww, 2B ww, and 2C waters) are applicable to the warmwater aquatic life use

<sup>&</sup>lt;sup>58</sup> Lyons, J.; Parks, T; Minahan, K; Ruesch, A. Evaluation of oxythermal metrics and benchmarks for the protection of cisco (*Coregonus artedi*) habitat quality and quantity in Wisconsin lakes. Canadian Journal of Fisheries and Aquatic Sciences. 2018. Volume 75: 600-608.

(see Part 4 of this document for aquatic life criteria crosswalk). Also consistent with the previous version of Chapter 1, narrative, but not numeric ammonia criteria, are applicable to other aquatic life uses. Narrative ammonia criteria are applicable to the new modified aquatic life use because waters designated for modified aquatic life may have cold water fish, warm water fish, or no fish. Thus, neither the cold water nor the warm water criteria are appropriate. Narrative criteria that can be applied to ammonia are included in the narrative criteria protective of aquatic life uses at the beginning of Section 16. The criteria tables with calculated values were removed for consistency with other equation-based criteria. Tables with values are not included for other equation-based water quality criteria. The Department does not anticipate changes to Clean Water Act implementation in Wyoming as a result of consolidation of the numeric ammonia criteria.

- 12. Hardness-Dependent Metals. Provisions from Section 21, "Protection of Aquatic Life" and Appendix F, "Conversion Factors to Change Total Recoverable Metal Values to Dissolved Values and Equations for Hardness Dependent Metals" related to hardness-dependent metals were incorporated. Consistent with the previous version of Chapter 1, numeric criteria are applicable to all waters designated for aquatic life. Numeric metals criteria are applicable to the new modified aquatic life use because the criteria protect aquatic life from metals pollution. The criteria were modified as follows:
  - a. Example values at a hardness of 100 milligrams per liter (mg/L) calcium carbonate (CaCO<sub>3</sub>) that were in Appendix B of the previous version of Chapter 1 were removed to avoid confusion that these values should be used as criteria.
  - b. Formulas to derive conversion factors were combined with the formulas to derive criteria to streamline and simplify the criteria.
  - c. Priority hardness-dependent metals are marked in **bold italics** rather than presented in a separate table, as in the previous version of Chapter 1 in Appendix B.

The Department does not anticipate changes to Clean Water Act implementation in Wyoming as a result of consolidation of the hardness-dependent metals criteria.

- 13. Aquatic Life Criteria Table. Provisions from Section 21, "Protection of Aquatic Life" and from Appendix B, "Water Quality Criteria" were incorporated. Consistent with the previous version of Chapter 1, numeric criteria, with the exception of chloride, are applicable to all waters designated for aquatic life. Numeric criteria are applicable to the new modified aquatic life use because the criteria protect aquatic life from pollution. The criteria table was modified as follows:
  - a. Priority and non-priority pollutants were combined into one table with priority pollutants shown in **bold italics**.

- b. Criteria were alphabetized, organized, and chemical abstract service numbers included per EPA Nationally Recommended Criteria Tables<sup>59</sup>.
- c. "Total" and "Dissolved" were added to the pollutant title for metals rather than including the fraction as a footnote.
- d. Criteria that are included elsewhere in the section were removed from the table (e.g., dissolved oxygen, ammonia, dissolved gases, pH) to avoid duplication and confusion.
- e. Site-specific criteria, included in an Appendix B subsection of its own in the previous version of Chapter 1, were integrated into footnotes for each pollutant.
- f. Removed the footnote in Appendix B of the previous version of Chapter 1 applicable to the selenium criteria that provided a method for converting total selenium to dissolved selenium. The footnote was removed because dissolved selenium concentrations cannot be scientifically derived from total selenium concentrations due significant sitespecific variability.
- g. A statement clarifying that blank cells indicate there is no value for criteria element was added.

The Department does anticipate significant changes to Clean Water Act implementation in Wyoming from consolidation and clarification of the aquatic life criteria. Some updates may need to be made for any effluent limitations that were derived in consideration of the total to dissolved selenium criteria conversion.

- 14. Provisions in Section 21(d) of the previous version of Chapter 1 that describe criteria "may not be appropriate due to unique physical or chemical conditions" and derivation of acute and chronic values "using the site-specific procedures outlined in the references in Appendix E or other scientifically defensible methods" was removed because the statement created ambiguity as to whether criteria could be modified outside of Chapter 1. Provisions describing the process and requirements for modifying water quality criteria are included in Section 25 of Chapter 1. In addition, given that any scientifically defensible methods can be used to derive criteria, the references in Appendix E that were specific to development of site-specific criteria were removed. The Department does not anticipate any changes to Clean Water Act implementation in Wyoming from consolidating requirements for modifying water quality criteria in Appendix E of the previous version of Chapter 1 because any defensible method can be used to derive criteria in Appendix E of the previous version of Chapter 1 because any defensible method can be used to derive criteria.
- 15. Provisions related to the application of aquatic pesticides and fish toxicants in Section 21(e) and 21(f), respectively, of the previous version of Chapter 1 were moved to Water Quality Rules, Chapter 2, Discharges Permit Regulations for Discharges to Wyoming Surface Waters,

<sup>&</sup>lt;sup>59</sup> United States Environmental Protection Agency. National Recommended Water Quality Criteria – Aquatic Life Criteria Table. January 2024. Accessed from: <u>https://www.epa.gov/wqc/national-recommended-water-quality-criteria-aquatic-life-criteria-table</u>.

because all provisions related to permitting discharges of pollution to Surface Waters of the State are included in Chapter 2. Chapter 2 was revised concurrently with Chapter 1. The provisions included in Section 21(f) associated with fish toxicants has been added to Chapter 2, Section 2(b), Exclusions. The process will continue to require notification to the Department and confirmation from the Department to secure the exemption. The provisions included in Section 21(e) associated with aquatic pesticides has been added to Chapter 2, Section 4, General Permits, since the Department already has a general permit for aquatic pesticide applications. Chapter 2 will now include the information the Department collects as part of the general permit. The Department has a general permit for aquatic pesticides. The Department does not anticipate that moving provisions regarding aquatic pesticides and fish toxicants from Chapter 1 to Chapter 2 will change Clean Water Act implementation in Wyoming because the processes will remain the same.

### Section 17. Water Quality Criteria for Protection of Drinking Water Use.

- Section 17 includes narrative and numeric water quality criteria specific to the drinking water designated use. The title is intended to be consistent with other water quality criteria sections. The drinking water criteria include provisions from the following sections of the previous version of Chapter 1:
  - a. Section 17, Taste, Odor and Color
  - b. Section 18, Human Health
  - c. Section 22, Radioactive Material
  - d. Section 23, Turbidity
  - e. Appendix B, Water Quality Criteria, specific to "Human Health Consumption of Fish and Drinking Water and Fish Consumption"
  - f. Appendix E, References to Develop Site-Specific Criteria and Bioassays

Consistent with the previous version of Chapter 1, numeric criteria are applicable to waters designated for drinking water. In the previous version of Chapter 1, the numeric criteria were assigned to Class 1, 2AB, and 2A waters. Section 17 also includes numeric criteria specific to the human consumption of fish designated use to avoid duplication of a table with the same parameters within Section 18 of Chapter 1. Human consumption of fish and drinking water criteria are typically combined, as outlined in EPA guidance on derivation of Clean Water Act Section 304(a) criteria<sup>14</sup> because: (1) all waters must be designated for human consumption of fish uses unless a use attainability analysis has been conducted to demonstrate that human consumption of fish is not attainable; (2) if a waterbody is designated for drinking water, it likely supports consumable aquatic life.

2. An opening statement was added to clarify that the Department will implement the numeric and narrative water quality criteria to ensure Surface Waters of the State are protected from pollution. The term "pollution" was used because it is defined at W.S. § 35-

11-103(c)(i). The Department does not anticipate impacts to Clean Water Act implementation as a result of this change because the previous version of Chapter 1 described that the water quality standards would be used to develop effluent limitations for discharges requiring control via permits and best management practices in the case of nonpoint sources.

- 3. Narrative Criteria. Narrative criteria were included and reworded as necessary for consistency with other narrative water quality criteria applicable to designated uses. Inclusion of narrative criteria is consistent with 40 CFR § 131.11(b)<sup>8</sup>, which describes "states must adopt those water quality criteria that protect the designated use," which can include "narrative criteria." EPA guidance<sup>18</sup> describes that "narrative criteria can serve as the basis for establishing pollutant or chemical-specific water quality based effluent limits (WQBELs) for wastewater or stormwater discharges where the state or authorized Tribe has not adopted chemical-specific criteria for a specific pollutant." The narrative provisions describe:
  - a. Pollution shall not impair drinking water uses. This general narrative is intended to address pollutants or conditions associated with pollution that may result in not-support of the drinking water designated use.
  - b. Pollution shall not result in an unacceptably high risk for acute, chronic, or carcinogenic effects in humans who consume water after treatment. This narrative is intended to identify specific conditions that do not support drinking water uses to provide additional guidance for deriving endpoints necessary to implement the narrative criteria. Acute and chronic effects were included to ensure consistency with other criteria to protect drinking water uses, which are derived, per EPA guidance<sup>18</sup> and EPA's methodology for deriving water quality criteria protective of human consumption of water and aquatic organisms<sup>14</sup>, to minimize the risk of adverse effects occurring to humans from acute (i.e., short-term) and chronic (i.e., lifetime) exposure to pollutants through the ingestion of drinking water and consumption of aquatic organisms. Carcinogenic effects were included to clarify this as an endpoint and ensure consistency with numeric criteria which are derived considering both carcinogenic and non-carcinogenic effects<sup>14</sup>. The phrase "after treatment" was included to clarify that water must be treated before consumption, consistent with the description of the drinking water designated use included in Section 11 of Chapter 1.
  - c. Pollution shall not result in turbidity that cannot be readily removed during conventional drinking water treatment processes or that causes upsets to water treatment processes or unacceptably high treatment costs. These narrative provisions are intended to replace the provisions included in Section 23, "Turbidity" of the previous version of Chapter 1 that limited turbidity increases to 10 NTU in waters designated for drinking water. In the previous version of Chapter 1, the numeric criteria in Section 23(a)

were assigned to Class 1, Class 2AB, and 2A, and 2B waters. The narrative criteria supplement narrative criteria for suspended solids in Section 15 of Chapter 1 and other narrative criteria in Section 17 of Chapter 1 that can also be used to protect drinking water based on site-specific conditions and requirements. Part 2, Section 16 of this document provides additional details regarding removal of the provisions from Section 23, "Turbidity," related to short-term increases in turbidity and the inclusion of those provisions within Water Quality Rules, Chapter 2, Permit Regulations for Discharges to Wyoming Surface Waters. The changes to the 10 NTU increase criteria were made because:

- i. The 10 NTU criteria were not scientifically derived to specifically protect drinking water uses. EPA recommended criteria for turbidity for protection of drinking water uses<sup>46</sup> describes "the ability of common water treatment processes (i.e., coagulation, sedimentation, filtration, and chlorination) to remove suspended matter to achieve acceptable final turbidities is a function of the composition of the material as well as its concentration. Because of the variability of such removal efficiency, it is not possible to delineate a general raw water criterion for these values."
- ii. The criteria did not reflect site-specific conditions and requirements for drinking water, nor removal capabilities, as described in EPA's recommended criteria for suspended solids and turbidity<sup>46</sup>. Turbidity values in Wyoming are known to vary considerably within and across waterbodies, even among waterbodies with little anthropogenic influences and in waterbodies that are used as drinking water supplies.
- iii. The criteria did not include a duration of time over which the elevated turbidity values would be deleterious to drinking water, nor include a frequency or number of times the criteria can be exceeded and still protect drinking water. Water quality criteria, including criteria protective of drinking water, generally include magnitude, duration, and frequency elements<sup>18</sup>.

The narrative turbidity criteria are intended to:

- i. Be consistent with 40 CFR § 131.11(b)(2)<sup>8</sup>, which describes that states may use narrative criteria where numerical criteria cannot be established.
- ii. Be consistent with EPA recommended criteria for turbidity for protection of drinking water uses that describes:
  - a. The need to ensure effective disinfection and treatment for microorganisms<sup>46</sup>; and
  - b. The variability in surface water supplies and treatment capabilities.

- iii. Be consistent with EPA guidance<sup>60</sup> regarding development of drinking water criteria that describes protection of the drinking water use as serving to "protect the quality of that raw water supply by controlling discharges to water supply sources." "Protection of the raw water supply to the maximum extent possible would limit, to some degree, the treatment burden placed on the water supply utility." In the context of drinking water, the intent would be to ensure public water supplies can meet the National Primary Drinking Water Regulations, 40 CFR § 141.13<sup>10</sup> (and summary table<sup>61</sup>), treatment technology limits for turbidity without excessive treatment costs. The limits, one NTU in systems that use conventional or direct filtration, and at no time exceeding 5 NTU in systems that use filtration other than conventional or direct filtration, require that turbidity be limited to prevent unacceptable adverse impacts to public water supplies.
- d. Undesirable tastes and odors in a public water supply, either directly or indirectly through interactions with chemicals used in existing treatment processes. These provisions were derived directly from Section 17(d) "Taste, Odor and Color" of the previous version of Chapter 1.
- e. The Department anticipates minor changes to Clean Water Act implementation in Wyoming based on the changes to narrative criteria protective of drinking water designated uses. Wyoming implements narrative criteria for purposes of evaluating attainment under Sections 305(b) and 303(d) of the Clean Water Act, development of restoration plans such as total maximum daily loads under Section 303(d), development of water quality-based effluent limits under Section 402, and water quality certifications under Section 401. The Department will need to make minor updates to Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup> to reflect the reorganization of the criteria and additional narrative provisions. However, the process used to determine attainment of drinking water uses will not change because the provisions are sufficiently general, describing that "Due to the variably nature of turbidity data, WDEQ requires that credible data and a weight of evidence approach be used to make designated use support determinations with turbidity data" and that "representative data" show drinking water criteria are either exceeded or met.

<sup>&</sup>lt;sup>60</sup> United States Environmental Protection Agency Region 8. EPA Action on Revisions to Wyoming Water Quality Standards – Wyoming Environmental Quality Council Revisions Dated August 24, 1998 and March 7, 2000. Letter from Jack W. McGraw, Acting Regional Administrator to Acting Chairperson, Wyoming Environmental Quality Council. May 11, 2000.

<sup>&</sup>lt;sup>61</sup> United States Environmental Protection Agency. National Primary Drinking Water Regulations. EPA-816-F-09-004. May 2009. Access from: <u>https://www.epa.gov/sites/default/files/2016-</u> 06/documents/npwdr\_complete\_table.pdf.

As such, evaluation of turbidity data also requires consideration of biological and physical data, as relevant, rather than just consideration of turbidity data. Using a multiple-lines-of-evidence approach for determining attainment of narrative turbidity criteria protective of drinking water uses could involve coupling turbidity data from surface waters with turbidity data from public water supplies and their efforts to address excess turbidity. Turbidity data from surface waters could involve sampling near the raw water intake and sampling at a location that lacks anthropogenic sources of turbidity (e.g., sites on the same waterbody upstream of sources of turbidity or sites from a comparable waterbody without anthropogenic sources of turbidity). Information from public water supplies could include exceedances of Safe Drinking Water Act turbidity requirements; changes to operations that have been implemented or that would need to be implemented to address excess turbidity (e.g., turning off raw water intakes for periods of time); additional treatment or infrastructure necessary to address excess turbidity (e.g., additional flocculant and coagulant; alternative filtration systems; water storage to rely upon during periods of time when turbidity exceeds requirements, etc.); costs associated with any necessary changes to treatment; and potential impacts of treatment costs on rate payers. References and resources may include EPA's Guidance Manual for Compliance with the Surface Water Treatment Rules: Turbidity Provisions<sup>62</sup>; EPA's Clean Water Act Financial Capabilities Assessment Guidance<sup>63</sup>; and Oregon's Turbidity Technical Review<sup>49</sup>. WDEQ also may, as resources allow, develop more detailed Assessment Methods for determining attainment of narrative criteria protecting designated uses from excess turbidity.

Clean Water Act Section 401 certifications typically include narrative provisions that rely on narrative criteria to limit discharges of organic and inorganic substances that may be released. WYPDES permits, including stormwater permits, generally do not include effluent limits based on the 10 or 15 NTU increase criteria due to potential inconsistencies in how turbidity is measured. Instead, WYPDES permits often include effluent limits based on total suspended solids. The WYPDES Program will oversee the new process for obtaining coverage under the exclusion process in Water Quality Rules, Chapter 2, Permit Regulations for Discharges to Wyoming Surface Waters, rather than the existing turbidity waiver process.

Wyoming Surface Water Quality Standards Triennial Review Supplementary Guidance to Statement of Principal Reasons

<sup>&</sup>lt;sup>62</sup> United States Environmental Protection Agency. Office of Water. Guidance Manual for Compliance with the Surface Water Treatment Rules: Turbidity Provisions. EPA 815-R-20\_004. June 2020. Accessed from: https://www.epa.gov/sites/default/files/2020-06/documents/swtr\_turbidity\_gm\_final\_508.pdf

<sup>&</sup>lt;sup>63</sup> United States Environmental Protection Agency. Office of Water. Clean Water Act Financial Capability Assessment Guidance. 800B24001. March 2024. Accessed from: <u>https://www.epa.gov/system/files/documents/2023-01/cwa-financial-capability-assessment-guidance.pdf</u>

- 5. Radioactive Materials.
  - a. Numeric criteria from Section 22(a), "Radioactive Materials" of the previous version of Chapter 1 were included in a table. Consistent with the previous version of Chapter 1, the numeric criteria are applicable to waters designated for drinking water because the criteria are maximum contaminant levels (MCLs) derived from the National Primary Drinking Water Regulations, 40 CFR § 141.66<sup>10Error! Bookmark not defined.</sup> (and summary t able<sup>61</sup>). In the previous version of Chapter 1, the numeric criteria in Section 22(a) were assigned to Class 1, Class 2AB, and 2A waters. Narrative criteria that can be applied to radioactive materials are included in the narrative criteria protective of drinking water designated uses at the beginning of Section 17.
  - b. The criteria were modified to include a 30-day average duration. The previous version of Chapter 1 described that the criteria "shall not be exceeded." This change was made because:
    - The criteria did not include a duration of time over which the elevated concentrations could occur and still support the drinking water designated use. Water quality criteria, including criteria protective of drinking water, generally include magnitude, duration, and frequency elements<sup>18</sup>.
    - ii. Criteria protective of drinking water designated uses are intended to maintain conditions that would support the drinking water after treatment. Thus, periodic exceedances of the criteria in a surface water can occur and still maintain sufficient quality in the finished drinking water. This is consistent with EPA guidance on drinking water criteria<sup>18</sup>, which describe that the Safe Drinking Water Act "controls the presence of contaminants in finished ('at-the-tap') drinking water." EPA also outlines that in circumstances where EPA "has not develop human health 304(a) criteria recommendations, states and Tribes have looked to maximum contaminant level (MCL) and maximum containment level goals (MCLG) under the Safe Drinking Water Act to protect public water supply designated uses," which are applicable to finished drinking water. EPA has also stated<sup>60</sup> that protection of the drinking water use should serve to "protect the quality of that raw water supply by controlling discharges to water supply sources" and that "in the water quality standards context, application of health-based criteria as the values [and presumably the use of the MCL instead of the health-based criteria] reflect the desired long-term quality of the water resource." "Protection of the raw water supply to the maximum extent possible would limit, to some degree, the treatment burden placed on the water utility." Given this guidance, drinking water designated use protection involves maintaining the long-term quality of the water supply whereby periodic exceedances of the criteria are acceptable provided the "long-term quality" is maintained such that after treatment requirements can be met.

- iii. After treatment requirements for radiological materials associated with the Safe Drinking Water Act allows averages of data to be used. The National Primary Drinking Water Regulations, 40 CFR § 141.2<sup>10</sup>, describe that MCLs are the "maximum permissible level of a contaminant in water which is delivered to any user of a public water system," with, as described in 40 CFR § 141.25(d)<sup>10</sup>, "averages of data" used to determine compliance for radiological materials.
- A 30-day duration rather than a longer duration allows all drinking water and human iv. consumption of fish criteria to have the same duration to simplify implementation of the criteria. A 30-day duration is consistent with EPA's guidance on derivation of human health criteria published under Section 304(a) of the Clean Water<sup>14</sup>, which describes that the criteria should be considered "chronic criteria derived to reflect long-term consumption of food and water," but are also intended to "be protective against adverse effects that may reasonably be expected to occur as a result of elevated acute or short-term exposures." "If EPA determined that pregnant women/fetuses or young children were the target population...then the 304(a) criteria would be developed using exposure parameters for that subgroup." The reference dose for uranium, for example, is based on a 30-day study and the reference dose for nitrate is based on studies that were less than 3-months in duration. In addition, a 30-day average should ensure that Wyoming's public water supplies can meet Safe Drinking Water Act MCLs that require more consistent compliance to protect against short-term health effects. 40 CFR § 141.23(d), (e), (f), and (i)<sup>10</sup> require surface water systems to monitor quarterly to determine compliance with the nitrate and nitrite MCLs. In circumstances where there is an exceedance of the nitrate or nitrite MCL, confirmation samples must be collected immediately, with compliance determined based on "the average of the initial and confirmation samples."
- v. Other states have applied 30-day or longer durations to radiological criteria. For example:
  - A. Colorado's Surface Water Quality Standards<sup>11</sup> describe that criteria for radium 226 and 228 are 30-day average values and describe uranium as a chronic criteria, with attainment of the chronic or 30-day criteria considered in attainment "so long as the existing ambient quality does not exceed" the value.
  - B. North Dakota's Surface Water Quality Standards<sup>30</sup> apply combined radium 226 and radium 228, gross alpha particle activity as a "30-day arithmetic average."
- c. The Department anticipates minor changes to Clean Water Act implementation in Wyoming by revising the duration to a 30-day average for numeric radiological drinking water criteria. Wyoming generally uses multiple lines of evidence for purposes of evaluating attainment under Sections 305(b) and 303(d) of the Clean Water Act.

Therefore, exceedances of radiological drinking water criteria are unlikely to change due to the duration change. In addition, the Department has not developed any total maximum daily loads under Section 303(d) for any drinking water radiological criteria. The Department will need to make minor updates to Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup>, which describes how the Department will determine attainment of water quality standards for purposes of developing Wyoming's Integrated Clean Water Act Section 305(b) and 303(d) Report, to reflect the change to a 30-day average. The document describes "Representative data show no exceedance of any drinking water criteria within at least 2 separate years of any 3-year period." Modifications to the methods will incorporate the 30-day average duration. 401 certifications typically include narrative conditions to ensure drinking water criteria are met and are not anticipated to change as a result. WYPDES permits that include water-quality based effluent limits for drinking water criteria generally include daily maximum limits based on the drinking water criteria, which will be updated to monthly limits.

- 6. Drinking Water and Human Consumption of Fish Criteria Table. Provisions from Section 18, "Human Health Criteria" and from Appendix B, "Water Quality Criteria" were incorporated. Consistent with the previous version of Chapter 1, numeric criteria are applicable to all waters designated for drinking water and human consumption of fish. In the previous version of Chapter 1, the numeric criteria were referenced in Section 18(a) and listed in Appendix B(a) and (b) and were assigned to Class 1, Class 2AB, and 2A waters. The criteria and presentation of the criteria were modified as follows:
  - a. The criteria are to be applied as a 30-day average. The previous version of Chapter 1 described that the criteria "shall not be exceeded." As described in part under "Radiological Material" above, this change was made because:
    - i. The criteria did not include a duration of time over which the elevated concentrations could occur and still support the drinking water designated use. Water quality criteria, including criteria protective of drinking water and human consumption of fish, generally include magnitude, duration, and frequency elements<sup>18</sup>.
    - ii. The criteria are intended to protect the drinking water and human consumption of fish, where protection of drinking water involves human consumption of the water after treatment. Thus, periodic exceedances of the criteria in a surface water can occur and still maintain sufficient quality in the finished drinking water. The criteria are based, with some exceptions, on whichever of the following are the most stringent: EPA Clean Water Act Section 304(a) National Recommended Water

Quality Criteria - Human Health<sup>64</sup>; EPA Clean Water Act Section 304(a) National Recommended Water Quality Criteria - Organoleptic Effects<sup>65</sup>; the National Primary Drinking Water Regulations<sup>10,61</sup>; or the National Secondary Drinking Water Regulations<sup>66</sup>. EPA has stated<sup>60</sup> that protection of the drinking water use should serve to "protect the quality of that raw water supply by controlling discharges to water supply sources" and that "in the water quality standards context, application of health-based criteria as the values [and presumably the use of the MCL instead of the health-based criteria or organoleptic effects] reflect the desired long-term quality of the water resource." As such, drinking water designated use protection involves maintaining the long-term quality of the water supply. In such cases, periodic exceedances of the criteria are acceptable provided the "long-term quality" is maintained so that after treatment requirements are met.

- iii. Application of the criteria as a 30-day average is consistent with EPA's derivation of Clean Water Act Section 304(a) criteria protective of drinking water and human consumption of fish<sup>14</sup>, which describes that the criteria should be considered "chronic criteria derived to reflect long-term consumption of food and water," but are also intended to be "protective against adverse effects that may reasonably be expected to occur as a result of elevated acute or short-term exposures." EPA describes, for example, that the reference dose for uranium is based on a 30-day study and the reference dose for nitrate is based on studies that were less than 3months in duration.
- iv. Application of the criteria as a 30-day average should also ensure that Wyoming's public water supplies can meet Safe Drinking Water Act MCLs that require more consistent compliance to protect against short-term health effects. 40 CFR § 141.23(d), (e), (f), and (i)<sup>10</sup> require surface water systems to monitor quarterly to determine compliance with the nitrate and nitrite MCLs. In circumstances where there is an exceedance of the nitrate or nitrite MCL, confirmation samples must be collected immediately, with compliance determined based on "the average of the initial and confirmation samples."

<sup>&</sup>lt;sup>64</sup> United States Environmental Protection Agency. National Recommended Water Quality Criteria – Human Health Criteria Table. February 2024. Accessed from: <u>https://www.epa.gov/wqc/national-recommended-water-quality-criteria-human-health-criteria-table</u>.

<sup>&</sup>lt;sup>65</sup> United States Environmental Protection Agency. National Recommended Water Quality Criteria – Organoleptic Effects. February 2024. Accessed from: <u>https://www.epa.gov/wqc/national-recommended-water-quality-criteria-organoleptic-effects</u>.

<sup>&</sup>lt;sup>66</sup> United States Environmental Protection Agency. National Secondary Drinking Water Regulations. February 2024. Accessed from: <u>https://www.epa.gov/sdwa/secondary-drinking-water-standards-guidance-nuisance-chemicals</u>

- v. Application of the criteria as a 30-day average should maintain desired organoleptic effects<sup>65,66</sup> in finished drinking water.
- vi. Other states have applied 30-day or longer durations to drinking water and human consumption of fish criteria. For example:
  - A. Colorado's Surface Water Quality Standards<sup>11</sup> describe drinking water and human consumption of fish criteria as "chronic or 30-day" criteria.
  - B. North Dakota's Surface Water Quality Standards<sup>30</sup> apply drinking water and human consumption of fish criteria as a "30-day arithmetic average."
  - C. Idaho's Surface Water Quality Standards<sup>12</sup> apply human health criteria as an "annual harmonic mean."
- b. Priority and non-priority pollutants were combined into one table with priority pollutants shown in *bold italics*.
- c. Criteria were alphabetized, organized, and chemical abstract service numbers included per EPA Nationally Recommended Criteria Tables<sup>64</sup>.
- d. "Dissolved" was added to the pollutant title for metals where appropriate rather than including the applicable fraction as a footnote.
- e. Site-specific criteria included in Appendix B (c) of the previous version of Chapter 1 were integrated into footnotes for each pollutant.
- f. A footnote that describes that the "secondary drinking water criteria only apply where drinking water is an actual use" was removed because water quality standards must, per 40 CFR § 131<sup>8</sup>, include the specific designated uses and water quality criteria applicable to such waterbodies.
- g. Statements that the criteria "may not be appropriate due to unique physical or chemical conditions" and derivation of human health values "using the site-specific procedures outlined in the references in Appendix E or other scientifically defensible methods" were removed because the modifications to water quality criteria are addressed in Section 25 of Chapter 1. In addition, this statement created ambiguity as to whether criteria could be modified outside of Chapter 1. However, federal regulations 40 CFR § 131<sup>8</sup> require water quality standards to include designated uses and water quality criteria applicable to such waterbodies. To this end, the references in Appendix E were removed because any scientifically defensible method can be used to derive criteria provided the criteria are adopted into Chapter 1.
- h. A footnote that reads "blank cells indicate there is no value for that criteria element," was added to clarify empty cells.

The Department anticipates minor changes to Clean Water Act implementation in Wyoming from the consolidation and clarification of the drinking water and human consumption of fish criteria and human consumption of fish only criteria and revising the

duration to a 30-day average. Wyoming generally uses multiple lines of evidence for purposes of evaluating attainment under Sections 305(b) and 303(d) of the Clean Water Act. Therefore, exceedances of drinking water and human consumption of fish criteria or human consumption of fish only criteria are unlikely to change due to the duration change. In addition, the Department has not developed any total maximum daily loads under Section 303(d) for any drinking water and human consumption of fish or human consumption of fish only criteria. The Department will need to make minor updates to Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup>, which describes how the Department will determine attainment of water quality standards for purposes of developing Wyoming's Integrated Clean Water Act Section 305(b) and 303(d) Report, to reflect the change to a 30-day average. The document describes "Representative data show" show either an exceedance or no exceedance of drinking water and human consumption of fish or human consumption of fish only criteria. 401 certifications typically include narrative conditions to ensure drinking water and human consumption of fish criteria are met and are not expected to change. WYPDES permits that include water-guality based effluent limits for drinking water and human consumption of fish or human consumption of fish only criteria generally apply the criteria as a daily maximum limit. With the change, the criteria would be implemented as a monthly average.

# Section 18. Water Quality Criteria for Protection of Human Consumption of Fish Uses.

- 1. Section 18 includes narrative and numeric water quality criteria specific to the human consumption of fish designated use. The title is intended to be consistent with other water quality criteria sections. The human consumption of fish criteria include provisions from the following sections of the previous version of Chapter 1:
  - a. Section 17, Taste, Odor and Color
  - b. Section 18, Human Health
  - c. Appendix B, Water Quality Criteria specific to "Human Health Consumption of Fish and Drinking Water" and "Human Health Consumption of Fish." These criteria are included in the table in Section 17 of Chapter 1 and referenced in Section 18.
- 2. An opening statement was added to clarify that the Department will implement the criteria to ensure Surface Waters of the State are protected from pollution. The term pollution was used because it is defined at W.S. § 35-11-103(c)(i). As described previously, the Department does not anticipate impacts to Clean Water Act implementation as a result of this change because the previous version of Chapter 1 described that the water quality standards would be used to develop effluent limitations for discharges requiring control via permits and best management practices in the case of nonpoint sources.

- 3. Narrative Criteria. Narrative criteria were included and reworded as necessary for consistency with other narrative water quality criteria applicable to designated uses. Inclusion of narrative criteria is consistent with 40 CFR § 131.11(b)<sup>8</sup>, which describes "states must adopt those water quality criteria that protect the designated use," which can include "narrative criteria." EPA guidance<sup>18</sup> describes that "narrative criteria can serve as the basis for establishing pollutant or chemical-specific water quality based effluent limits (WQBELs) for wastewater or stormwater discharges where the state or authorized Tribe has not adopted chemical-specific criteria for a specific pollutant." The narrative provisions describe:
  - a. Pollution shall not impair human consumption of fish uses. This general narrative is intended to address pollutants or conditions associated with pollution that may result in non-support of human consumption of fish uses.
  - b. Pollution shall not result in an unacceptably high risk of acute, chronic, or carcinogenic effects in humans who consume fish. This narrative is intended to identify specific conditions that do not support human consumption of fish uses to provide additional guidance for deriving endpoints necessary to implement the narrative criteria in derivation of effluent limitations, determining attainment of criteria, and establishing restoration goals. Acute and chronic effects were included to ensure consistency with other criteria to protect human consumption of fish uses, which are derived, per EPA guidance<sup>18</sup> and EPA's methodology for deriving water quality criteria protective of human consumption of water and aquatic organisms<sup>14</sup>, to minimize the risk of adverse effects occurring to humans from acute (i.e., short-term) and chronic (i.e., lifetime) exposure to pollutants through the ingestion of drinking water and consumption of aquatic organisms. Carcinogenic effects were included to clarify this as an endpoint and ensure consistency with numeric criteria which are derived considering both carcinogenic and non-carcinogenic effects<sup>14</sup>.
  - c. Pollution shall not result in either directly, or indirectly through interaction with other substances, unacceptable palatability or flavor in fish flesh. This narrative is derived from Section 17(a) of the previous version of Chapter 1. "Unacceptable" was added to clarify that a certain level of off-flavor and palatability in fish flesh must be identified.
- 4. Numeric Criteria. Provisions from Section 18, "Human Health Criteria" and Appendix B, "Water Quality Criteria" were incorporated by referencing the criteria table in Section 17(d) of Chapter 1. Consistent with the previous version of Chapter 1, numeric criteria for "Human Health Consumption of Fish and Drinking Water" are applicable to waters designated for drinking water and human consumption of fish (Class 1, 2AB, and 2A in the previous version of Chapter 1) and numeric criteria for "Human Health Consumption of Fish" are applicable to waters designated for drinking to waters designated for "Human Health Consumption of Fish" are applicable to waters designated for human consumption of fish or human fish" are applicable to waters designated for human consumption of fish or human

consumption of effluent-dependent fish but not drinking water (Class 2B, 2C, and 2D in the previous version of Chapter 1). The criteria were modified as follows:

- a. The phrase, "unless specifically modified through the process in Section 25(b) of this Chapter" was added to the human consumption of effluent-dependent fish criteria to clarify that water quality criteria may be modified through the process-based approach for effluent-dependent waters described in Section 25 of Chapter 1. The process-based approach allows changes to the water quality criteria applicable to effluent-dependent aquatic life and human consumption of effluent-dependent to be made without modifications to Chapter 1. All other modifications to water quality are made through revision of Chapter 1.
- b. Human consumption of fish and human consumption of effluent-dependent fish are applied as a 30-day average to maintain consistency with criteria derived to protect drinking water and human consumption of fish uses when they co-occur.
- c. See Part 2, Section 16 of this document for other changes that were made to the drinking water and human consumption of fish criteria table.
- 5. The Department does anticipate significant changes to Clean Water Act implementation in Wyoming from consolidation and clarification of the human consumption of fish and human consumption of effluent-dependent fish. As described in Part 2, Section 17 of this document, the Department will need to make some changes by adding a 30-day duration to numeric drinking water and human consumption of fish and human consumption of fish only criteria.

### Section 19. Water Quality Criteria for Protection of Industry Use.

- 1. Section 19 incorporates provisions from Section 19, "Industrial Water Supply" of the previous version of Chapter 1. The title was revised for consistency with other water quality criteria sections.
- 2. An opening statement was added, consistent with other water quality criteria, to clarify that the Department will implement the water quality criteria to ensure Surface Waters of the State designated for industry are protected from pollution. The term pollution was used because it is defined at W.S. § 35-11-103(c)(i).
- 3. Narrative criteria were reworded for consistency with other narrative water quality criteria applicable to designated uses. The narrative provisions describe:
  - i. Pollution shall not impair industry use. This general narrative is intended to address pollutants or conditions associated with pollution that may result in non-support of industry use.
  - ii. Unacceptable adverse impacts to raw water treatment costs. This narrative replaces "measurable increase in raw water treatment costs" from the previous version of
Chapter 1. "Unacceptable adverse impacts" is more appropriate because an increase in treatment costs may be measurable, but still support the designated use.

- 4. The statement regarding which waters are designated for industry was removed because assignment of designated uses to surface waters are addressed in Section 11 of Chapter 1.
- 5. The Department does not anticipate changes to Clean Water Act implementation in Wyoming as a result of the minor changes to the narrative criteria for the industrial water supply use, including determining attainment of water quality standards under Sections 305(b) and 303(d), development of total maximum daily loads under Section 303(d), 401 Certifications, or Clean Water Act Section 402 permitting through WYPDES. Minor updates to Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup> will need to be made to reflect the consolidation of the criteria and updated terminology in the criteria. However, the process for evaluating attainment of the industry designated use will not change because the document describes "Unless data and/or information suggest otherwise, WDEQ will generally use aquatic life other than fish designated use support as a surrogate measure of industrial designated use support."

## Section 20. Water Quality Criteria for Protection of Irrigation Use.

- Section 19 includes provisions specific to protection of irrigation that were part of Section 20, "Agricultural Water Supply," of the previous version of Chapter 1. The title is intended to be consistent with other water quality criteria sections.
- 2. An opening statement was added, consistent with other water quality criteria, to clarify that the Department will implement the water quality criteria to ensure Surface Waters of the State designated for irrigation are protected from pollution. The term pollution was used because it is defined at W.S. § 35-11-103(c)(i).
- 3. The provisions were reworded for consistency with other narrative water quality criteria applicable to specific designated uses. The narrative provisions describe:
  - a. Pollution shall not impair irrigation uses. This general narrative is intended to address pollutants or conditions associated with pollution that may result in non-support of the irrigation use.
  - b. Unacceptable adverse impacts to crop production. This narrative replaces "measurable decrease" in crop production from the previous version of Chapter 1. "Unacceptable adverse impacts" is more appropriate because a decrease in crop production may be measurable, but still support the designated use.
- 4. The statement regarding which waters are designated for agricultural uses was removed because assignment of designated uses to surface waters are addressed in Section 11 of Chapter 1.
- 5. The Department does not anticipate changes to Clean Water Act implementation in Wyoming as a result of the minor changes to the narrative criteria for the irrigation use,

including determining attainment of water quality standards under Sections 305(b) and 303(d), development of total maximum daily loads under Section 303(d), 401 Certifications, or Clean Water Act Section 402 permitting through WYPDES. Minor updates to *Wyoming's Methods for Determining Surface Water Quality Condition*<sup>23</sup> will need to be made to reflect the creation of the new designated use and updates to the criteria. However, the process for evaluating attainment of the irrigation designated use will not change because the document describes "Unless data and/or information suggest otherwise, WDEQ will generally use aquatic life other than fish designated use support as a surrogate measure of agricultural designated use support." Subsequent versions of Wyoming's Integrated Clean Water Act Sections 305(b) and 303(d) Report will need to reflect the new designated use.

## Section 21. Water Quality Criteria for Protection of Livestock Use.

- Section 21 includes provisions specific to protection of livestock that were part of Section 20, "Agricultural Water Supply," of the previous version of Chapter 1. The title is intended to be consistent with other water quality criteria sections.
- An opening statement was added, consistent with other water quality criteria, to clarify that the Department will implement the water quality criteria to ensure Surface Waters of the State designated for livestock are protected from pollution. The term pollution was used because it is defined at W.S. § 35-11-103(c)(i).
- 3. The provisions were reworded for consistency with other narrative water quality criteria applicable to specific designated uses. The narrative provisions describe:
  - a. Pollution shall not impair livestock uses. This general narrative is intended to address pollutants or conditions associated with pollution that may result in non-support of the livestock use.
  - b. Unacceptable adverse impacts to livestock production. This narrative replaces "measurable decrease" in livestock production from the previous version of Chapter 1. "Unacceptable adverse impacts" is more appropriate because a decrease in livestock production may be measurable, but still support the designated use.
- 4. The statement regarding which waters are designated for agricultural use was removed because assignment of designated uses to surface waters are addressed in Section 11 of Chapter 1.
- 5. The Department does not anticipate changes to Clean Water Act implementation in Wyoming as a result of the minor changes to the narrative criteria for the livestock use, including determining attainment of water quality standards under Sections 305(b) and 303(d), development of total maximum daily loads under Section 303(d), 401 Certifications, or Clean Water Act Section 402 permitting through the WYPDES Program. Minor updates to Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup> will need to be made to reflect the creation of the new designated use and updates to the criteria.

However, the process for evaluating attainment of the agriculture designated use will not change because the document describes "Unless data and/or information suggest otherwise, WDEQ will generally use aquatic life other than fish designated use support as a surrogate measure of agricultural designated use support." Subsequent versions of Wyoming's Integrated Clean Water Act Sections 305(b) and 303(d) Report will need to reflect the new designated use.

#### Section 22. Water Quality Criteria for Protection of Recreation Uses.

- 1. Section 22 incorporates provisions from Section 22, *"E. coli* Bacteria." The Section title was reworded to *"*Water Quality Criteria for Protection of Recreation Uses" for consistency with other water quality criteria for each designated use. The previous version of Chapter 1 did not include a specific section for recreation uses.
- An opening statement was added, consistent with other water quality criteria, to clarify that the Department will implement the water quality criteria to ensure Surface Waters of the State designated for recreation are protected from pollution. The term "pollution" was used because it is defined at W.S. § 35-11-103(c)(i).
- 3. Narrative criteria consistent with other narrative water quality criteria applicable to specific designated uses were added. The narrative provisions describe:
  - a. Pollution shall not impair recreation uses. This general narrative is intended to address pollutants or conditions associated with pollution that may result in non-support of the recreation uses.
  - b. An unacceptable high risk of acute or chronic health effects to humans that engage in recreational activities in or on Surface Waters of the State. This narrative is derived from the description of recreational use included in Section 3(e) of the previous version of Chapter 1. However, "safe for human contact" was replaced with "unacceptable high risk of acute or chronic health effects to humans" to provide more specific guidance for implementation of the criteria. "Acute" and "chronic" were used because they are defined terms in Chapter 1.
- 4. *Escherichia coli* (*E. coli*) criteria were included in a table to improve readability. As in the previous version of Chapter 1, numeric criteria for waters designated for primary contact recreation are applicable to waters designated for full body contact water recreation and criteria for waters designated for secondary contact recreation are applicable to waters designated for limited body contact water recreation.
- 5. References to the *Wyoming Surface Water Classification List*<sup>1</sup>, discussion of use attainability analyses, and descriptions of modifications were removed to avoid duplication. Provisions related to designated uses are included in Section 11 of Chapter 1 and provisions describing how to modify designated uses are included in Section 12 of Chapter 1.

- 6. Text describing that the four single-sample maxima *E. coli* concentrations from Section 27(c) of the previous version of Chapter 1 were to be used to post recreational use advisories was removed because (1) guidelines for posting recreational use advisories are not water quality standards and do not need to be included in the water quality standards; and (2) the Department has developed guidance<sup>67</sup> for circumstances where unsafe levels of waterborne pathogens are suspected or confirmed at publicly accessible recreation sites that uses the beach action value of 235 cfu/100 mL recommended by EPA in EPA's 2012 recreational water quality criteria<sup>34</sup>.
- 7. The Department anticipates minor changes to Clean Water Act implementation in Wyoming as a result of the addition of narrative criteria for recreation uses. Minor updates to Wyoming's Methods for Determining Surface Water Quality Condition<sup>23</sup> will need to be made to reflect the changes to the names of the designated uses and additional narrative criteria. The process for evaluating attainment of the recreation designated use will generally not change because the Department primarily uses the geometric mean values to determine attainment of recreational uses. Subsequent versions of Wyoming's Integrated Clean Water Act Sections 305(b) and 303(d) Report will need to reflect the new names of the designated uses. Clean Water Act Section 401 certifications include narrative conditions protective of designated uses and are not expected to change.

#### Section 23. Water Quality Criteria for Protection of Scenic Value Use.

- 1. Section 23 is a new section added for consistency with other water quality criteria for each designated use. The previous version of Chapter 1 did not include a specific section for scenic value.
- 2. An opening statement was included, consistent with other water quality criteria, to clarify that the Department will implement the water quality criteria to ensure Surface Waters of the State designated for scenic value are protected from pollution. The term pollution was used because it is defined at W.S. § 35-11-103(c)(i).
- 3. The narrative provisions describe:
  - a. Pollution shall not impair scenic value uses. This general narrative is intended to address pollutants or conditions associated with pollution that may result in non-support of the scenic value use.
  - b. Unacceptable adverse impacts to the aesthetics of Surface Waters of the State, including but not limited to, odors, colors, tastes, settleable solids, floating materials and suspended solids, and wastes. This narrative is derived from the description of the scenic value designated use included in Section 3(f) of the previous version of Chapter 1 as well as provisions in Section 15, "Settleable Solids," and Section 16, "Floating and

<sup>&</sup>lt;sup>67</sup> Wyoming Department of Environmental Quality. Water Quality Division. Waterborne Pathogen Public Notification Process for Publicly Accessible Water Recreation Sites. April 14, 2023.

Suspended Solids," of the previous version of Chapter 1 that discussed the scenic value use.

4. The Department does not anticipate that the addition of a new section of narrative criteria for scenic values uses will impact Clean Water Act implementation in Wyoming because the previous version of Chapter 1 included narrative criteria to protect scenic value uses. As such, determining attainment of water quality standards under Sections 305(b) and 303(d), development of total maximum daily loads under Section 303(d), 401 Certifications, or Clean Water Act Section 402 permitting through the WYPDES Program are not expected to change. Minor updates to *Wyoming's Methods for Determining Surface Water Quality Condition*<sup>23</sup> will need to be made to reflect updates to the criteria. However, the process for evaluating attainment of the scenic value designated use will not change because the document describes "Representative data show" no exceedance or an exceedance of one scenic value criterion.

# Section 24. Water Quality Criteria for Protection of Terrestrial Wildlife Use.

- Section 24 is a new section added for consistency with other water quality criteria for each designated use. The previous version of Chapter 1 did not include a specific section for wildlife.
- 2. An opening statement was included, consistent with other water quality criteria, to clarify that the Department will implement the water quality criteria to ensure Surface Waters of the State designated for terrestrial wildlife are protected from pollution. The term pollution was used because it is defined at W.S. § 35-11-103(c)(i).
- 3. The narrative provisions describe:
  - a. Pollution shall not impair terrestrial wildlife uses. This general narrative is intended to address pollutants or conditions associated with pollution that may result in non-support of the terrestrial wildlife use.
  - b. Adverse chronic or acute impacts to terrestrial wildlife. "Adverse chronic and acute impacts" replaced "safe for contact and consumption" included in the description of the wildlife designated use in Section 3(h) of the previous version of Chapter 1 because "acute" and "chronic" are defined terms in Chapter 1 that help provide more consistent endpoints for protection of terrestrial wildlife. Wildlife uses were also discussed in Section 15, "Settleable Solids," Section 16, "Floating and Suspended Solids," and Section 22, "Radioactive Material" in the previous version of Chapter 1.
- 4. The Department does not anticipate that the addition of a new section of narrative criteria for terrestrial wildlife will significantly impact Clean Water Act implementation in Wyoming because the previous version of Chapter 1 included narrative criteria to protect wildlife uses. As such, determining attainment of water quality standards under Sections 305(b) and 303(d), development of total maximum daily loads under Section 303(d), 401

Certifications, or Clean Water Act Section 402 permitting through the WYPDES Program are not expected to change. Minor updates to *Wyoming's Methods for Determining Surface Water Quality Condition*<sup>23</sup> will need to be made to reflect updates to Chapter 1. However, the process for evaluating attainment of the terrestrial wildlife designated use is not expected to change because the document describes that the Department will generally use aquatic life designated use support as a surrogate for wildlife designated use support and describes that "representative data" will be used to determine attainment of narrative criteria.

# Section 25. Modifications to Water Quality Criteria.

- 1. Section 25 incorporates provisions for modifying water quality criteria from the following sections in the previous version of Chapter 1:
  - a. Portions of Section 18, "Human Health;"
  - b. Portions of Section 21, "Protection of Aquatic Life;"
  - c. Portions of Section 33, "Reclassifications and Site-Specific Criteria;"
  - d. Portions of Section 34, "Use Attainability Analysis;" and
  - e. All of Section 36, "Effluent Dependent Criteria."
- 2. Provisions in Section 33 of the previous Chapter that described "any person at any time may petition the Department or the council" to "establish site-specific criteria" were replaced with a statement describing that the Department may modify water quality criteria through revision of Chapter 1, either at its discretion or upon receipt of a petition in accordance with the Department's Rules of Practice and Procedure, Chapter 3. This change was made to clarify that changes to water quality criteria, other than criteria applicable to effluentdependent aquatic life and human consumption of effluent-dependent fish uses, must be made through revision of Chapter 1. The Rules of Practice and Procedure, Chapter 3, describes the process any interested person may use to petition the Council or the Department to promulgate, amend, or repeal any rule. W.S. § 35-11-302(a)(i) authorizes the Administrator to recommend to the Director "rules, regulations, standards and permit systems" that prescribe "water quality standards." W.S. § 35-11-109(a)(i) authorizes the Director to promulgate rules, and W.S. § 35-11-112(a)(i) authorizes the Environmental Quality Council to "promulgate rules after recommendation from the director of the department, the administrators of the various divisions and their respective advisory boards."
- 3. Provisions in Section 34(b) of the previous version of Chapter 1 that described a delayed implementation date and EPA review under the Clean Water Act were replaced with a statement that water quality criteria may be modified through revision of Chapter 1. This change was made for consistency with 40 CFR § 131.21<sup>8</sup> that describes water quality standards are not effective for Clean Water Act purposes unless approved by EPA.

- Provisions describing the need to protect existing uses, designated uses, and the highest attainable use were included to ensure consistency with 40 CFR § 131.10<sup>8</sup> and 40 CFR § 131.11<sup>8</sup>.
- 5. Provisions in Section 33 of the previous version of Chapter 1 that required a use attainability analysis for all site-specific criteria were replaced with a statement that it may be necessary to complete a use attainability analysis. This change was made because a use attainability analysis would not be necessary in circumstances where the water quality criteria are not less stringent.
- 6. Provisions in Section 33(b)(vi) of the previous version of Chapter 1, now included in Section 12(c)(vi), describing "This subsection shall not apply to the derivation of site-specific criteria" were removed because there is no such exclusion at 40 CFR § 131.10<sup>8</sup> or 40 CFR § 131.11<sup>8</sup>.
- 7. Provisions outlining the process to modify water quality criteria for effluent-dependent waters included in Section 36 of the previous version of Chapter 1 were incorporated. The following revisions were made:
  - a. References to Class 2D and 3D waters were replaced with effluent-dependent aquatic life and human consumption of effluent-dependent fish.
  - b. Provisions that described "statewide numeric criteria" were changed to "aquatic life" or "human consumption of fish," because these are the only uses with numeric water quality criteria that may be modified through the process.
  - c. Provisions that describe modifications to designated uses and the *Use Attainability Analysis Implementation Policy*<sup>3</sup> were removed:
    - A. To avoid duplication with the information on modifications to designated uses in Section 12 of Chapter 1; and
    - B. Because the Use Attainability Analysis Implementation Policy<sup>3</sup> will be dissolved upon adoption of Chapter 1. In its place the Department plans to develop a guidance document to assist with modifications to designated uses.
- 8. The Department does not anticipate that the changes to the provisions for modifying water quality criteria will impact CWA implementation in Wyoming. Each site-specific criteria or designation of a water as effluent-dependent will still require review and approval by the United States Environmental Protection Agency.

# Section 26. Discharger Specific Variances.

- 1. Section 26 incorporates provisions from Section 37 of the previous version of Chapter 1.
- The provisions were reorganized and reworded for clarity. The minimum requirements needed for each discharger-specific variance, consistent with 40 CFR § 131.14<sup>8</sup> were clarified and consolidated.

- 3. Provisions that described the process for the Administrator to grant a variance outside of revision of Chapter 1 and submit them to EPA were replaced with provisions outlining that the Department may adopt a discharger specific variance, either at its discretion, or upon receipt of a petition in accordance with the Department's Rules of Practice and Procedure, Chapter 3, Section 3. The Rules of Practice and Procedure, Chapter 3, describes the process any interested person may use to petition the Council or the Department to promulgate, amend, or repeal any rule. This change was made to better align with Wyoming Statutes. W.S. § 35-11-302(a)(i) authorizes the Administrator to recommend to the Director "rules, regulations, standards and permit systems" that prescribe "water quality standards." W.S. §§ 35-11-112(a)(i) and 35-11-112(a)(ii) requires the Environmental Quality Council to "promulgate rules and regulations" and "approve all rules, regulations and standards" before they become final. 40 CFR § 131.14<sup>8</sup> outlines that variances to water quality standards are water quality standards subject to EPA review and approval or disapproval. As such, discharge-specific variances must be recommended from the Administrator to the Director, then promulgated via the Environmental Quality Council. With this change, all future discharger specific variances will be made through revision of Chapter 1.
- 4. Provisions that described each completed reevaluation as a final action of the Administrator appealable pursuant to the Department's Rules and Practice and Procedure, Chapter 1, Section 8, were removed because the highest attainable condition will be specified in the discharge permit, which is a final action of the Administrator that can be appealed pursuant to the Department's Rules of Practice and Procedure, Chapter 1.
- 5. Provisions that described that the Administrator may terminate a variance for good cause following opportunity for public comment were removed because each discharger specific variance will be included in Chapter 1 and therefore cannot be changed outside of the rule revision process.
- 6. Provisions that described that the discharger specific variance would expire if the permittee does not submit the required information to complete the reevaluation and the results of the reevaluation are not submitted to EPA within 30 days of completion were revised because a rule cannot be repealed outside of the rulemaking process. Instead, if the information necessary to complete the reevaluation is not submitted or if the results of the reevaluation are not submitted to EPA within 30 days of completion, the Department will modify the discharge permit such that the permittee will be required to meet the water quality-based effluent limit. A provision was also added that the Department shall repeal the discharger specific variance through revision of the Chapter.
- 7. Provisions that described the need for the permittee to submit information as part of the reevaluation that indicates "that the most cost-effective pollutant removal alternative capable of achieving the water-quality based effluent limit continues to create substantial

and widespread economic and social impacts" was removed because this is not a requirement of the reevaluation at 40 CFR §  $131.14(b)(v)^8$ .

8. The Department does not anticipate significant changes to Clean Water Act implementation as a result of the changes to the discharger specific variance provisions. The changes require all discharger specific variances to be adopted through revision of Chapter 1. Since the rule revision process satisfies federal requirements regarding public participation, the updated process will ensure compliance with the Clean Water Act. The updated provisions also better align with federal requirements regarding discharger specific variances.

# Section 27. Mitigation Requirements for Wetlands That Are Not Subject to the Jurisdiction of the Clean Water Act.

- 1. Section 27 incorporates provisions from Section 15 of the previous version of Chapter 1.
- 2. The section title was revised to clarify that the provisions are specific to mitigation requirements for Surface Waters of the State that are wetlands not subject to the jurisdiction of the Clean Water Act. This clarification is necessary because the previous Section Title, "Protection of Wetlands," could be interpreted as inclusive of all provisions applicable to wetlands. This is not the case, however, because:
  - a. The previous version of Chapter 1 assigned designated uses (and applicable water quality criteria) to wetlands. Section 4, "Surface Water Classes and Uses," Appendix A, "Wyoming Surface Water Classifications," and the Wyoming Surface Water Classification List<sup>1</sup> which assigned adjacent wetlands the same classification as the surface water to which they were adjacent and assigned remaining waters, including non-adjacent wetlands, as Class 3 waters.
  - b. The previous provisions did not recognize that the United States Army Corps of Engineers regulates discharges and establishes mitigation requirements for wetlands that are subject to the jurisdiction of the Clean Water Act.
- 3. The phrase "unless authorized or exempted" was added to be consistent with the Isolated Wetlands Mitigation Requirements in Water Quality Rules, Chapter 2, Section 7 that only require mitigation for the "loss or destruction of greater than a cumulative one (1) acre of wetland habitat for the total project" and exempt "mining activities subject to a permit or authorization from the Wyoming Department of Environmental Quality, Land Quality Division," as provided in W.S. § 35-11-309 through 311.
- 4. The Department does not anticipate that the changes associated with requirements for wetland mitigation for wetlands not subject to the jurisdiction of the Clean Water Act will impact Clean Water Act implementation.

#### Section 28. Incorporation By Reference.

1. Section 28 is a new Section added for consistency with W.S. § 16-3-103(h).

2. The Department does not anticipate that the incorporation of documents by reference will impact Clean Water Act implementation in Wyoming.

# Part 3. Wyoming Surface Water Designations – Rationale for Changes

- As described in Section 11 of Chapter 1, the Wyoming Surface Water Designations<sup>2</sup> and Wyoming Recreation Designated Uses Web Map<sup>5</sup> include the designated uses assigned to Surface Waters of the State. As such, all provisions that described how designated uses are assigned to Surface Waters of the State from the previous version of Chapter 1 are included in the Recreation Designated Uses Web Map or incorporated into the March 16, 2021, version of the Wyoming Surface Water Classification List. This includes provisions from Section 4, "Surface Water Classes and Uses;" Section 27, "E. coli Bacteria;" and Appendix A, "Wyoming Surface Water Classifications."
- 2. The title of the document was changed from the *Wyoming Surface Water Classification List* to *Wyoming Surface Water Designations* because the classification system for assigning designated uses was removed from Chapter 1. See Part 2, Section 11 of this document for additional details regarding the removal of the classification system.
- 3. All provisions related to surface water classifications were replaced with designated uses. See Part 2, Section 11 of this document for additional details regarding changes to designated uses, including the consolidation of aquatic life uses; separation of the agricultural use into irrigation and livestock; addition of a modified aquatic life use; and change in the name of "wildlife" to "terrestrial wildlife." As described in *Wyoming Surface Water Designations*, for Table A and Table B, designated use codes (see Table 5) were used for designated uses that vary between waterbodies (i.e., aquatic life, drinking water, and human consumption of fish) and the remaining designated uses (i.e., industry, irrigation, terrestrial wildlife, and scenic value) were narratively described because they do not vary between waterbodies. Table 6 shows a crosswalk from the proposed codes to the previous classifications. Class 2D and 3D are not included because no waters were classified as 2D or 3D.

Designated Use Category	Designated Use	Abbreviation
	Coldwater	CW
	Warmwater	WW
	Limited	L
Aquatic Life Uses	Effluent-Dependent	ED
	Modified	М
	No Aquatic Life	N
	Drinking Water	DW
	Human Consumption of Fish	FC
Other Uses	Human Consumption of Effluent-	
	Dependent Fish	EDFC
	Industry	IN

Table	5. 9	Surface	water	designated	uses a	nd abb	reviations.
TUNIC		Juniace	vacci	acoignatea	43C3 4		

Designated Use Category	Designated Use	Abbreviation
	Irrigation	IR
	Livestock	LV
	Terrestrial Wildlife	TW
	Scenic Value	S

Table 6. Aquatic life uses crosswalk depicting proposed designated use codes and
corresponding classifications from the previous version of the rule.

Proposed Designations List	Previous Classification List
Designated Use Abbreviation	Classification
CW, DW, FC	2AB
WW, DW, FC	2ABww
DW, L	2A
CW, FC	2B
WW, FC	2Bww
WW, FC	2C
L	3A, 3B, 3C
Ν	4A, 4B, 4C

- 4. A brief discussion of how changes to designated uses are made through revision of Chapter 1 was included. The text describes that revisions are made when an updated version of the document is incorporated by reference upon adoption of Chapter 1. As discussed in Part 2, Section 11 and Section 12 of this document, 40 CFR 131.6<sup>8</sup> requires designated uses consistent with the provisions of Sections 101(a)(2) and 303(c)(2) of the Clean Water Act as part of the minimum requirements for water quality standards. As such, water quality standards must include the designated uses assigned to Surface Waters of the State.
- 5. The discussion of designated use changes based on use attainability analyses was replaced with text describing that changes to designated uses supported by a UAA are denoted with a (UAA). Recreation designated use changes noted with an "(s)" were removed, as all recreation designated uses are included in the Wyoming Recreation Uses Web Map. As with the previous version of the document, text describing that recreation designated uses can be accessed via the Surface Water Quality Standards webpage is included. See Part 2, Section 12 of this document for additional details regarding modifications to designated uses.
- 6. The Recreation Designated Uses Web Map, incorporated by reference into Chapter 1 and referenced in the *Wyoming Surface Water Designations*<sup>2</sup> was updated to reflect changes to the recreation designated uses. See Part 2, Section 11 of this document for additional details regarding changes to recreation designated uses. "Primary contact recreation" was changed to "full body contact water recreation" and "secondary contact recreation" was changed to "limited body contact water recreation." Waters previously depicted as Class 1

waters were assigned full body contact water recreation uses to ensure antidegradation requirements were separated from designated uses.

- 7. The list of Class 1 waters and references to Class 1 waters were removed, as all antidegradation provisions, including which waters are designated for Outstanding Resource Waters, are included in Section 13 of Chapter 1. See Part 2, Section 13 of this document for additional details regarding Antidegradation. Designated uses were assigned to waters previously identified as Class 1 in Table A and Table B using the methodology for unlisted waters described Chapter 1, Appendix A "Wyoming Surface Water Classifications" of the previous version of Chapter 1 and the March 16, 2021, version of the Wyoming Surface Water Classification List<sup>1</sup>. As described in the March 16, 2021, version of the Wyoming Surface Water Classification List<sup>1</sup>, "Class 1 waters are not protected for all uses in all circumstances. For example, all waters in the National Parks and Wilderness are Class 1, however, all do not support fisheries and other aquatic life uses (e.g. hot springs, ephemeral waters, wet meadows, etc.) For stormwater permitting, 401 Certification, and WQ assessment purposes, the actual uses on each particular water must be determined independently." Using the guidance described, waters with cold water game fish in the June 2000 Wyoming Game and Fish Database were designated for coldwater aquatic life, drinking water, human consumption of fish, industry, irrigation, livestock, terrestrial wildlife, and scenic value. Waters with warm water game fish but no cold water game fish in the June 2000 Wyoming Game and Fish Database were designated for warmwater aquatic life, human consumption of fish, drinking water, industry, irrigation, livestock, terrestrial wildlife, and scenic value. Waters with only nongame fish were designated for warmwater aquatic life, industry, irrigation, livestock, terrestrial wildlife, and scenic value. Waters that were not present in the June 2000 Wyoming Game and Fish Database or that lacked fish were designated for limited aquatic life, industry, irrigation, livestock, terrestrial wildlife, and scenic value.
- 8. Designated uses applicable to wetlands was described narratively. The use designations are consistent with Section 4, "Surface Water Classes and Uses" and Appendix A, "Wyoming Surface Water Classifications" of the previous version of Chapter 1. Adjacent wetlands are assigned the same designated uses as the Surface Waters of the State to which they are adjacent. Remaining waters, including non-adjacent wetlands, were Class 3 in the previous version of Chapter 1, and designated for limited aquatic life, industry, irrigation, livestock, terrestrial wildlife, and scenic value.
- 9. Changes to the designated uses assigned to specific surface waters include:
  - a. Waters listed as "Powder River Drainage Isolated Waters" and "Tongue River Drainage Isolated Waters" in Table A were removed because these lists were outdated. Some of these impoundments have been reclaimed and some no longer have water. A narrative description was added to capture these and similar types of waters: "Waters of the State that are not hydrologically connected to other Surface Waters of the State, are constructed in upland areas, and are not subject to the jurisdiction of the Clean Water Act, are designated for livestock, terrestrial wildlife, and industry."

- b. Other waters not designated for aquatic life (i.e., 4A, 4B, 4C) where the previous removal of the aquatic life use was not supported by a sufficient use attainability analysis were designated for limited aquatic life (i.e., L). See Table 7 for a complete list. These changes were made because:
  - i. In a number of circumstances, the waterbody supports aquatic life. Thus, removal of the aquatic life use would not be appropriate.
  - ii. The previous aquatic life use removal was not supported by a use attainability analysis with sufficient documentation demonstrating that aquatic life is not an existing or attainable use. As described in 40 CFR § 131.10<sup>8</sup>, a state may remove a use that is not an existing use provided they conduct a use attainability analysis whenever "The State wishes to remove a designated use that is specified in Section 101(a)(2) of the Act." Because aquatic life is a Clean Water Act Section 101(a)(2) use, a UAA is necessary to demonstrate that the use is not attainable.

Table 7. Changes to aquatic life designated uses from the March 16, 2021, version of the Wyoming Surface Water Classification List<sup>1</sup> where there is not sufficient justification that aquatic life is not an existing or attainable use.

Waterbody or Waterbodies	Watershed	Designated	Classification in March 16,	Page Number in March 16,		
	Watershed	Use Code	2021, Classification List	2021, Classification List		
Unnamed Tributary to	Belle Fourche	[1]	AC*(IIAA)	A-6		
Robinson Draw	Delle i ourelle	[5]	40 (OAA)	~~~		
Lower Robinson Draw	Belle Fourche	[L]	4C*(UAA)	A-6		
Unnamed Tributary to						
Unnamed Tributary to	North Platte	[L]	4C*(UAA)	A-42		
Sevenmile Creek						
Unnamed Tributary 1 to	Powder	ſu 1	4R*(IIAA)	۸-58		
Crazy Woman Creek	FOWGET	[L]	4B (OAA)	A-36		
Bass Draw	Powder	[L]	4B*(UAA)	A-58		
Unnamed Tributary 2 to	Powdor	ſ1 1	1 <b>R</b> *(IIAA)	۸_59		
Crazy Woman Creek	FOWGET	[L]	4B (OAA)	A-36		
Frederick Draw	Powder	[L] 4B*(UAA)		A-58		
McCray Draw	Powder	[L]	4B*(UAA	A-58		
Coal Gulch	Powder	[L]	4B*(UAA)	A-58		
All Tributaries to Coal Gulch	Powder	[L]	4B*(UAA)	A-58		
Flying E Creek	Powder	[L]	4B*(UAA)	A-58		
All Tributaries to Flying E	Powdor	[1]	<u>/R*(IIAA)</u>	۸-59		
Creek	FOWGET	[L]	4B (OAA)	A-39		
Indian Creek	Powder	[L]	4B*(UAA)	A-59		
All Tributaries to Indian	Dowdor	£1.1	4D*(IIAA)	A E0		
Creek	POwder	[L]	4B (UAA)	A-59		
Lower Van Houten Draw	Powder	[L]	4C*(UAA)	A-59		
Three Unnamed Tributaries	Powdor	[1]	4C*(110.0)	۸-59		
to Lower Van Houten Draw	FOWLEI	[L]	4C (UAA)	A-59		

Waterbody or Waterbodies	Watershed	Designated	Classification in March 16,	Page Number in March 16,		
		Use Code	2021, Classification List	2021, Classification List		
Other Tributaries to Van	Powder	[L]	4B*(UAA)	A-59		
Houten Draw			. ,			
Upper Van Houten Draw	Powder	[L]	4B*(UAA)	A-59		
Unnamed Tributaries to	Powder	ſ1	4 <b>R</b> *(1144)	Δ-59		
Upper Van Houten Draw	i owaci	[=]	40 (0/07)			
Unnamed tributaries to						
Power River near	Powder	[L]	4B*(UAA)	A-59		
Schoonover Road						
Fourmile Creek	Powder	[L]	4C*(UAA)	A-60		
Cat Creek	Powder	[L]	4C*(UAA)	A-60		
All Tributaries to Cat Creek	Powder	[L]	4B*(UAA)	A-60		
North Fork Fourmile Creek	Powder	[L]	4B*(UAA)	A-60		
All Tributaries to North Fork	Dowdor	£1.1	4D*/UAA)	A 60		
Fourmile Creek	Powder	[L]	4B (UAA)	A-00		
South Fork Fourmile Creek	Powder	[L]	4B*(UAA)	A-60		
Tributaries to South Fork						
Fourmile Creek Minus Goble	Powder	[L]	4B*(UAA)	A-60		
Draw						
Anderson Draw	Powder	[L]	4C*(UAA)	A-61		
Unnamed Tributary to	Powder	[L]	AC*(IIAA)	۸-61		
Anderson Draw	Fowder	[L]	40 (0AA)	A-01		
Unnamed Tributaries to	Dowdor	£1.1	4D*/IIAA)	A 61		
Anderson Draw	Powder	[L]	4B (UAA)	A-01		
Unnamed Tributaries to	Powdor	£1.1	4D*/IIAA)	A 62		
Wallace Creek	FUWUEI	[L]	4B (UAA)	A-02		
Foster Reservoir	Bighorn	[L]	4B* (UAA)	B-149		
Unnamed Drainage to Foster	Bighorn	[L]	4B* UAA	B-404		

Waterbody or Waterbodies	Watershed	Designated Use Code	Classification in March 16, 2021, Classification List	Page Number in March 16, 2021, Classification List
4A Waters (Specific Canals and Ditches)	Multiple	[L]	4A	Multiple

# Part 4. Aquatic Life Criteria Crosswalk

Changes to criteria are noted in *bold italics*.

			Cold Water Game Fish		Warm Water Game Fish or Nongame Fish		No Fish		Effluent-Dependent With and Without Fish		New
Criteria	Proposed	Previous	Proposed	Previous	Proposed	Previous	Proposed	Previous	Proposed	Previous	Proposed
	Section	Section	Coldwater	2AB, 2B	Warmwater	2ABww, 2Bww, 2C	Limited	2A, 3	Effluent- Dependent	2D, 3D	Modified Aquatic Life
Acute and Chronic Numeric Criteria	16(k)	21, Appendix B, Appendix G	Numeric	Numeric	Numeric	Numeric	Numeric	Numeric	Applicable, But Modifiable Using Process- Based Approach	Applicable, But Modifiable Using Process- Based Approach	Numeric
Hardness- Dependent Metals Criteria	16(j)	Appendix F	Numeric	Numeric	Numeric	Numeric	Numeric	Numeric	Numeric, But Modifiable Using Process- Based Approach	Numeric, But Modifiable Using Process- Based Approach	Numeric
Chloride	16(k)	21, Appendix B	Numeric	Numeric	Numeric	Numeric	Narrative	Narrative	Narrative	Narrative	Narrative
Ammonia	16(i)	21(a), Appendix C	Numeric	Numeric	Numeric	Numeric	Narrative	Narrative	Narrative	Narrative	Narrative
Turbidity	15(e), 16(b)	16, 23	Narrative	Narrative; 10 NTU Increase	Narrative	Narrative; 15 NTU Increase	Narrative	Narrative	Narrative	Narrative	Narrative
Dissolved Oxygen	16(h)	21, 24, Appendix B, Appendix D	Coldwater criteria with exclusion for lower portion of lakes and	Coldwater criteria; Narrative	Warmwater criteria with <i>exclusion</i> for lower portion of lakes and	Warmwater criteria; Narrative	Narrative	Narrative	Narrative	Narrative	Narrative

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			Cold Water Game Fish		Warm Wate or Nong	er Game Fish game Fish No F		Fish	Effluent-Dependent With and Without Fish		New
Criteria	Proposed	Previous	Proposed	Previous	Proposed	Previous	Proposed	Previous	Proposed	Previous	Proposed
	Section	Section	Coldwater	2AB, 2B	Warmwater	2ABww, 2Bww, 2C	Limited	2A, 3	Effluent- Dependent	2D, 3D	Modified Aquatic Life
			reservoirs;		reservoirs;						
			Narrative		Narrative						
Temperature	16(g)	25	20 °C Max, 2-hour duration and 3- year frequency; 1.1 °C Increase; Narrative	20 °C Max; 1.1 °C Increase; Narrative	30 °C Max and 3-year frequency; 1.1 °C Increase; Narrative	30 °C Max, 2.2 °C Increase; Narrative	Narrative	Narrative	Narrative	Narrative	Narrative
рН	15, 16(f)	26	6.5-9 and Narrative	6.5-9 and Narrative	6.5-9 and Narrative	6.5-9 and Narrative	6.5-9 and Narrative	6.5-9 and Narrative	6.5-9 and Narrative	6.5-9 and Narrative	6.5-9 and Narrative
Total Dissolved Gases	16(e)	30	Not to Exceed 110 % of Saturation	Not to Exceed 110 % of Saturation	Not to Exceed 110 % of Saturation	Not to Exceed 110 % of Saturation	None	None	None	None	Narrative