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**BEFORE THE  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
ENVIRONMENTAL QUALITY COUNCIL  
STATE OF WYOMING**

8 IN THE MATTER OF CHAPTER 1, )  
9 QUALITY STANDARDS FOR )  
10 WYOMING SURFACE WATERS, )  
11 WATER QUALITY RULES AND )  
12 REGULATIONS )

DRAFT

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17

**STATEMENT OF PRINCIPAL REASONS**

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19

**Background**

20 The Department of Environmental Quality (DEQ), Water Quality Division, pursuant to the  
21 authority vested in it by the Act, Wyoming Statutes 35-11-101 to 1507 *et seq.*, proposed to the  
22 Council to amend and revise Chapter 1 of the Wyoming Water Quality Rules and Regulations.  
23 Chapter 1 contains the quality standards for surface waters in the state including water  
24 classifications and designation of protected uses.

25  
26 The department began a (*Triennial Review*) of the Chapter 1, Surface Water Quality Standards in  
27 July, 2002 with the publication of an Outreach document disclosing the agency's intent to revise  
28 the regulations. Public comment was solicited during this informal stage in the process and draft  
29 revisions were proposed in November, 2004 after consideration of the comments received. The  
30 proposed rules and associated policies underwent an extensive review by the Water and Waste  
31 Advisory Board which included 5 public meetings and 4 solicitations of public comment over a  
32 2-year period. On October 18, 2006, the Advisory Board made a recommendation to propose the  
33 revised rules to the Environmental Quality Council for formal adoption.

34  
35 This rule making is a substantial revision of the current rules and all aspects of the surface water  
36 standards have been considered. The major revisions adopted during this rulemaking include:

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44
1. A change in the primary bacterial indicator organism for recreational use protection from fecal coliform to E.coli and the establishment of subcategories of recreational uses;
  2. Updates of the numeric criteria for toxic pollutants to the most recent federal recommendations;

- 1           3.       The establishment of 2 new water classifications (2D and 3D) for effluent  
2           dependent waters and a procedure for calculating ambient-based criteria on those  
3           waters;
- 4
- 5           4.       Modifications of the numeric criteria for chloride and aluminum to better  
6           represent actual conditions found in surface waters in Wyoming and the adoption  
7           of site-specific aquatic life criteria for chloride on Salt Creek, Meadow Creek and  
8           the main stem of the Powder River below Salt Creek in the Powder River Basin  
9           and Poison Spider Creek in the North Platte Basin. Site-specific criteria have also  
10          been developed for chloride and selenium on Cottonwood Creek in the Big Horn  
11          River Basin.
- 12
- 13          5.       The correction of a number of errors and oversights that have been identified in  
14          the rules since they were last revised in July, 2001.
- 15

16 In addition to the revised rules, the implementation procedures for antidegradation and use  
17 attainability analysis have been amended as necessary to accommodate the new stream  
18 classification categories. These policies provide needed detail on the procedures that will be  
19 used to implement the "Antidegradation" rule (*Section 8*); and "Use Attainability Analysis"  
20 (UAA) provisions (*Sections 33, 34 and 36*). The policy regarding UAA procedures has been  
21 substantially modified to include a new procedure for designating recreation uses and another for  
22 establishing site specific, ambient based criteria on effluent dependant waters. A new policy  
23 addressing the interpretation and implementation of the narrative agricultural use protection  
24 criteria (*Section 20*) has also been developed.

25

26 The policies are not in themselves "regulations", but are referenced in the associated sections of  
27 the Chapter 1 rules and have been developed to provide detailed guidance for the interpretation  
28 and implementation of the rules. The Antidegradation and Mixing Zone Policies are also  
29 necessary to obtain EPA approval of the revised standards for federal Clean Water Act purposes.  
30 Adoption of these policies is not part of this rule making, and they are referenced here, as in the  
31 rule, for informational purposes.

### 32

### 33 **Purpose and Intent of this Proposed Revision**

### 34

35 Section 303(c) of the Federal Clean Water Act provides states, tribes and territories with the  
36 primary authority and responsibility to establish water quality standards for Waters of the United  
37 States within their respective jurisdictions. The Clean Water Act also requires states to review  
38 their water quality standards at least once every three years and to make revisions where  
39 appropriate. This three-year revision cycle is commonly referred to as the "triennial review."

40

41 Chapter 1 of the Wyoming Water Quality Rules and Regulations contains the state surface water  
42 quality standards. These revised rules, once adopted, not only will become state requirements  
43 but will be submitted to the United States Environmental Protection Agency (EPA), Region VIII

1 for approval under the Federal Clean Water Act as the applicable federal requirements in the  
2 State of Wyoming.

3  
4 In this rule making, the Department of Environmental Quality proposes to update the Wyoming  
5 surface water quality standards to meet the most current national recommendations. The  
6 proposed revisions are intended to protect and maintain the designated uses of waters of the state  
7 and to achieve the goals of the federal Clean Water Act. These goals will be accomplished by  
8 designating protected uses on all waters, setting appropriate water quality criteria for all  
9 pollutants according to the use designations, and by establishing and implementing an  
10 antidegradation policy for the maintenance of existing water quality on waters whose  
11 background quality is better than the numeric criteria.

12  
13 These rules are also intended to implement various provisions of the Wyoming Environmental  
14 Quality Act (WS 35-11-101 through 35-11-1507 et. seq.) including 1999 amendments addressing  
15 the level of data necessary to make various water quality program decisions.

16  
17 Specifically, these rules are being revised to:

- 18  
19 1. Meet the triennial review requirements of the federal Clean Water Act;
- 20  
21 2. Provide an improved procedure for the classification of surface waters and the  
22 designation of protected uses;
- 23  
24 3. Update and revise the numeric and narrative criteria for all pollutants and water body  
25 conditions to meet the current national recommendations;
- 26  
27 4. Address federal regulations requiring the implementation of an antidegradation policy;
- 28  
29 5. Implement the applicable provisions of the Wyoming Environmental Quality Act; and
- 30  
31 6. Maintain Wyoming's primacy for delegated programs of the federal Clean Water Act.

32  
33  
34 **Compliance with Federal Regulations (WS 16-3-103(a)(i)(F)**

35  
36 These rule revisions are proposed to comply with the federal regulations regarding the adoption  
37 of state water quality standards, specifically those contained in 40 CFR Part 131, which require  
38 the designation of water uses, the establishment of numeric and narrative water quality criteria  
39 sufficient to protect the water's designated uses and the implementation of antidegradation  
40 procedures. These rule changes are designed to meet the minimum requirements of the federal  
41 law and regulations.

1  
2 **Proposed Revisions to Chapter 1 of the Wyoming Water Quality Rules and Regulations**  
3

4  
5 **Section 2(b) – Definitions**  
6

7 New definitions have been added for “ambient-based criteria”, “E.coli”, “effluent  
8 dependant water”, “effluent dominated water”, “net environmental benefit” and “primary  
9 contact recreation” to help provide clarity to the new rules regarding use designations and  
10 criteria on effluent dependant waters. We have also transposed the previous meanings of  
11 the terms “effluent dependant” and “effluent dominated”. In the previous regulation,  
12 “effluent dominated” referred to waters that are 100% effluent and “effluent dependant”  
13 to those that are mostly effluent. We have changed our usage of the terms to be  
14 consistent with how they are used nationally.  
15

16 **Section 4(b) - Class 2 waters**  
17

18 A new Section 4(b)(v) has been added which establishes a new category of fish bearing  
19 waters - Class 2D, effluent dependant fisheries. These are waters that support resident  
20 fish populations but where support of the fishery is totally dependant upon permitted  
21 effluent discharges. These waters differ from those in Class 4C in that 2D waters are  
22 protected for fish and aquatic life uses where 4C waters are not. The numeric aquatic life  
23 criteria that are adopted for all other Class 2 waters, however, do not necessarily apply to  
24 Class 2D waters and a new procedure (*Section 36*) has been created to describe the  
25 process for establishing ambient-based criteria on these waters.  
26

27 **Section 4(c) - Class 3 waters**  
28

29 A new Section 4(c)(iv) has been added which establishes a new category of non- fish  
30 bearing waters - Class 3D. These are waters where support of an existing aquatic  
31 community is totally dependant upon permitted effluent discharges. These waters differ  
32 from those effluent dependant waters in Class 4C in that 3D waters are protected for  
33 aquatic life uses other than fish where 4C waters are not. The numeric aquatic life  
34 criteria that are adopted for all other Class 3 waters, however, do not necessarily apply to  
35 Class 3D waters and a new procedure (*Section 36*) has been created to describe the  
36 process for establishing ambient-based criteria on these waters.  
37

38 The purpose for the creation of these two new classifications is to find a solution to a  
39 lingering and important issue between the State and U.S. Environmental Protection  
40 Agency (EPA) on the implementation of water quality standards on effluent dependant  
41 waters. In 2001, the 4C classification was created for these waters. It was done in  
42 recognition of the many economic and environmental benefits associated with effluent

1 dependant flows. It was also recognized that many of these waters would disappear and  
2 all benefits would be lost if the discharges were required to comply with aquatic life  
3 criteria that were developed to protect natural aquatic systems. Therefore, the 4C  
4 classification does not contain an aquatic life designation nor a requirement to comply  
5 with aquatic life criteria. This approach was adopted as a practical way of maintaining  
6 the status quo for dischargers and users of the produced water where there is no  
7 overriding hazard. EPA, however, believes that this approach does not comply with  
8 provisions in the federal regulations regarding the protection of existing uses and has not  
9 approved any 4C designations in Wyoming.

10  
11 The new classes, 2D and 3D, will replace class 4C for all effluent dependant waters that  
12 are not isolated waters. We will continue to classify isolated, effluent dependant waters  
13 as 4C. The difference is that aquatic life will be a designated and protected use on 2D  
14 and 3D, thereby removing EPA’s basic objection. EPA has no objection on isolated  
15 waters because they are not considered to be “waters of the U.S.” Aquatic life criteria  
16 will be established on class 2D and 3D waters, but will not necessarily be the same  
17 criteria that apply on natural waters. A new Section 36 has also been proposed that  
18 provides a procedure for establishing ambient-based criteria on effluent dependant  
19 waters. The new classifications in concert with the procedures for ambient criteria will  
20 achieve essentially the same result as the current regulations by maintaining the status  
21 quo of the discharges that have created waters exhibiting “net environmental benefits”  
22 but will do so in a manner that will be approved by EPA.

23  
24  
25 Section 4(d)(ii):

26  
27 The first sentence of Section 4(d)(ii) makes a reference to Section 33(b). This reference  
28 has been changed to **33(b)(ii)**. Class 4B streams are those without sufficient flow to  
29 support an aquatic life use. Section 33(b)(ii) describes the use removal factor specific to  
30 this circumstance.

31  
32 Section 4(d)(iii)

33  
34 This section has been changed to read: “*Class 4C waters are **isolated** waters that have*  
35 *been determined to lack the potential to normally support and sustain aquatic life*  
36 *pursuant to the provisions of Section 33(b)(i), (iii), (iv), (v), **or** (vi) of these regulations”*  
37 *(emphasis added)*. The extent of what could be classified 4C has been changed to apply  
38 only to isolated waters. Effluent dependant tributary stream channels are now captured in  
39 the new 2D and 3D classes. Upon adoption of the new effluent dependent classifications,  
40 tributary waters previously designated as 4C will be reclassified to either 2D or 3D and  
41 be subject to the establishment of site-specific criteria as provided in the new section 36.  
42 Also, the previous use of the word “and” is incorrect. The referenced Section 33(b)

1 subsections are factors that can be used to remove an aquatic life use designation. Any  
2 one of the referenced factors can be used to reclassify a water as 4C. Thus, use of the  
3 word “or” is more appropriate.  
4

5 Section 5.  
6

7 The language in this section has been modified to provide a reference to the new  
8 Agricultural Use Protection Policy for implementing the narrative Section 20 standard.  
9

10 Section 11 (a)(i).  
11

12 The language in this section has been modified to indicate that the 7Q10 method of  
13 determining low flow conditions may be used in any circumstance, not just for acute  
14 exposures as was previously expressed in the regulation.  
15

16 Section 20.  
17

18 Because of the potential for coal bed methane development to adversely affect  
19 agricultural uses of surface water, the adequacy of the Section 20 narrative criteria for  
20 agricultural protection has been carefully examined and the existing narrative standard  
21 has been reaffirmed. However, in order to ensure a consistent interpretation and  
22 application of the standard, a detailed implementation policy has been developed. This  
23 policy describes the decision making process that will be used to translate the narrative  
24 goal of “no measurable decrease” in crop or livestock production into numeric,  
25 enforceable effluent limits on produced water discharges. The language in section 20 has  
26 been modified to provide a reference to the new Agricultural Use Protection Policy for  
27 implementing the narrative standard.  
28

29 Section 21(a)(i) and (iii) Ammonia.  
30

31 The language in these sections was modified to show explicitly which waters are subject  
32 to the numeric ammonia criteria in Appendix C.  
33

34 Section 21(d)  
35

36 This section has been amended to indicate that there are provisions for modifying the  
37 Appendix B criteria in Sections 33 and 36 in addition to the references listed in Appendix  
38 E.  
39

1 Section 21(f)(ii)

2  
3 Section 21(e)(ii) refers to a person *licensed* by the Wyoming Dept. of Agriculture and  
4 Section 21(f)(ii) refers to a person *certified and licensed* by the Wyoming Dept. of  
5 Agriculture. Section 21(f)(ii) has been changed to read the same as 21(e)(ii).  
6  
7

8 Section 21(f)(viii)

9  
10 This section refers to the preceding paragraphs in Section 21(f). It has been changed to  
11 read “...(i) through (viii) above...” to correct an error in the previous language that  
12 referred to only “(i) through (vi)”.  
13

14 Section 22(b)

15  
16 This section has been modified to include Class 2B and the new class 2D in the list of  
17 classifications where the 60 pC/L value for radium applies. There are two numeric  
18 values for radium expressed in Section 22; 5 pC/L and 60 pC/L. The 60 pC/L value is  
19 intended to apply on waters that are not designated as drinking water supplies. Class 2B  
20 waters are not designated for drinking water protection and were unintentionally omitted  
21 from the list in Section 22(b) in the previous regulation. The new classes 2D and 3D are  
22 not intended to be designated as drinking water supplies.  
23

24  
25 Section 24:

26  
27 Classes 2A and 2D have been added to the list of waters included in the first paragraph  
28 describing a narrative criterion for dissolved oxygen. This narrative was developed to  
29 provide protection for aquatic life other than fish (*numeric values in Appendix D apply on*  
30 *fisheries*). Aquatic life other than fish is a designated use on Class 2A waters and should  
31 receive protection under this narrative. Class 2A was unintentionally omitted from the  
32 first paragraph in Section 24 in the previous regulation. The new Class 2D category has  
33 also been included in this narrative because unlike natural fisheries, narrative criteria are  
34 better suited for the regulation of effluent-dependant waters.  
35

36  
37 Section 27 E.coli Bacteria

38  
39 The standard for bacterial contamination in surface water has been changed from fecal  
40 coliform to E.coli and primary and secondary subcategories of recreational use  
41 designations have been established. The details of the new standard have been  
42 constructed to comply with the federal requirements in “Ambient Water Quality Criteria”

1 for Bacteria -1986”, United States Environmental Protection Agency, Office of Water,  
2 January, 1986. In summary, the modifications to the pathogen criteria in Section 27  
3 contain the following provisions:  
4

- 5 1. A numeric criterion for primary contact recreation (full body contact) of 126  
6 organisms/100 ml. This number represents a geometric mean of at least 5  
7 samples taken within a 30-day period.  
8
- 9 2. Primary contact recreation is a seasonal designation which would only apply on  
10 Wyoming waters between May 1 and September 30. At other times of the year,  
11 waters would be designated for secondary contact.  
12
- 13 3. A numeric criterion for secondary contact recreation of 630 organisms/100 ml.  
14 This number represents a geometric mean of at least 5 samples taken within a 30-  
15 day period. The secondary contact criterion (630) is simply 5 times the primary  
16 number (126) and is not based on an empirical risk assessment. It is consistent  
17 with the 1986 EPA guidance for bacteria.  
18
- 19 4. Single sample maximum allowable concentrations calculated according to the  
20 type of recreation/human contact that would normally be expected to occur on a  
21 specific water. The purpose for single-sample maxima is to provide a basis for  
22 deriving single-sample maximum effluent limitations on NPDES permits or  
23 posting recreational use advisories on public waters. They shall not be used as a  
24 cause for TMDL development.  
25
- 26 5. A provision has also been included to allow variances from the numeric criteria in  
27 circumstances where the source of contamination is from wildlife or is otherwise  
28 unavoidable or is in the public interest.  
29
- 30 6. Section 27 (a) designates all waters currently listed on Table A of the “Wyoming  
31 Surface Water Classification List as primary contact recreation waters by default  
32 and all waters not listed on Table A as secondary contact waters by default. The  
33 basis for these default classifications is that the streams on Table A are the larger  
34 stream systems in the larger watersheds across the state. Stream channels not  
35 listed on table A are smaller headwater streams. The physical size of a waterbody  
36 and the amount of flow are very important factors relating to whether there is a  
37 reasonable potential to support primary contact activities such as swimming,  
38 rafting, kayaking, etc.  
39

40 It is recognized that there will be exceptions to the default classifications and that  
41 some streams currently listed in Table A are intermittent or ephemeral in nature  
42 and do not have the physical characteristics to support primary contact activities.



1 Likewise, there are waters not listed on Table A that may be presently supporting  
2 primary uses. There is a built-in margin of safety with the default classifications  
3 in that the first circumstance is far more likely than the second. Essentially all  
4 Class 3 and 4 streams listed in Table A are non-perennial low flow waters and are  
5 potential candidates for a secondary use designation. Of the waters not listed on  
6 Table A, a much smaller percentage would be actual candidates for a primary  
7 contact designation.  
8

9 In order to manage those circumstances where the default classifications are  
10 inappropriate for the actual uses on any particular waterbody, a simple and  
11 straightforward use attainability analysis procedure (*UAA implementation policy*)  
12 has been developed in conjunction with the new recreation designations. This  
13 UAA procedure provides an efficient means for the department to redesignate  
14 recreation use categories where site specific information indicates that the default  
15 category is inappropriate and allows resources to be focused on those waters that  
16 are most important from a public health standpoint.  
17

#### 18 Section 33(b)

19  
20 This section has been amended to provide authority for the administrator of the Water  
21 Quality Division to establish site specific criteria on effluent dependant waters without  
22 formal rule making procedures. A new Section 36 has been created along with a new  
23 UAA policy that describes the limits and details of how ambient-based criteria may be  
24 established on effluent dependant waters.  
25

#### 26 Section 33(c)

27  
28 This section provides that the administrator may make a recommendation to the Council  
29 "...to establish subcategories of a use...". The phrase "*or site-specific criteria*" has been  
30 added to this sentence. Section 33 is intended to address use designations,  
31 reclassifications and the establishment of site specific criteria.  
32

#### 33 Section 36 Effluent Dependand Criteria

34  
35 This new section provides the necessary detail for how ambient-based criteria will be  
36 calculated on effluent dependant waters. A new Use Attainability Analysis procedure  
37 has been created that describes very specifically the data requirements and decision  
38 making process that will be employed to implement Section 36. This procedure is  
39 entitled "UAA Procedures for Effluent Dependand Waters (Classes 2D & 3D)" and can  
40 be found in Section VI of the Use Attainability Analysis Implementation Policy  
41 document.  
42

1 Appendix B, Priority Pollutants

2  
3 The list of water quality numeric criteria for priority pollutants has been updated to  
4 conform to the most recent federal recommendations. The two basic sources for the  
5 criteria are the Clean Water Act, Section 304(a) recommended criteria (2004 revision) or  
6 the Safe Drinking Water Act (SDWA) primary and secondary standards. In general,  
7 where section 304(a) and SDWA publish different values for the same pollutant, the  
8 more stringent value was included in Appendix B. Exceptions for arsenic and barium are  
9 noted below

10  
11 Arsenic The human health values for arsenic have been changed from 7 µg/L to  
12 10 µg/L. This value is intended to be the same as the maximum  
13 contaminant level (MCL) established under the federal Safe Drinking  
14 Water Act. The 7 µg/L value was adopted in March, 2000 while the Safe  
15 Drinking Water Act MCL was under revision. The Wyoming value was  
16 adopted as an approximation of what the final MCL would be with the  
17 understanding that the Agency would make any necessary adjustment  
18 when a new MCL became final. The EPA adopted a final MCL of 10  
19 µg/L which became effective on February 22, 2002. The section 304(a)  
20 value for arsenic is 0.018 µ/L.

21  
22 Also, the footnote (3) has been modified in reference to arsenic. Though  
23 arsenic needs to be identified as a carcinogen, the 10 µg/L Human Health  
24 values are not based on an additional 1 in a million cancer risk.

25  
26 Barium The human health value for barium (2000 µg/L) is taken from the  
27 SDWA instead of the section 304(a) recommended value of 1000 µg/L.  
28 This decision was made in a previous Chapter 1 rulemaking dealing  
29 specifically with the barium criteria.

30  
31  
32 Appendix B, Non-Priority Pollutants

33  
34 As with the priority pollutants, the list of water quality numeric criteria for non-  
35 priority pollutants has been also updated to conform to the most recent federal  
36 recommendations with an important exception for aluminum. Additionally, the  
37 chloride criteria have been changed to only apply on fish-bearing waters.

38  
39 Aluminum The footnote relating to the aquatic life values for aluminum has been  
40 changed to indicate that the numeric values for aluminum refer to the  
41 dissolved metal fraction rather than the total recoverable fraction. The  
42 nationally recommended criteria developed by EPA refer to total

1 recoverable metal. However, many Wyoming waters carry in suspension  
2 naturally occurring clays with concentrations of aluminum silicate several  
3 orders of magnitude higher than the nationally recommended criteria.  
4 Aluminum silicate is not toxic to aquatic life but is detectable when the  
5 water is analyzed for total recoverable metal. This results in the total  
6 recoverable criteria being only marginally effective for aquatic life  
7 protection purposes. Analyzing for dissolved metal involves filtering out  
8 the particulate aluminum prior to analysis thus giving a better indication  
9 of the aluminum fraction that is actually bio-available.

10  
11 Chloride A footnote has been added indicating that the aquatic life values for  
12 chloride shall apply on Class 1, 2AB, 2B and 2C waters only. The  
13 application of the numeric chloride criteria is problematic on many waters  
14 in the west and in fact, Wyoming is the only state in the Rocky Mountain  
15 Region that has adopted aquatic life chloride values for application on any  
16 water. Prior to the most recent rule revision in 2001 the chloride aquatic  
17 life values were applicable only on game and non-game fisheries. In  
18 2001, they became generally applicable on all waters designated for any  
19 kind of aquatic life protection. This correction will result in the  
20 application of the chloride criteria only on Class 1 & 2 fisheries and not on  
21 Class 3 waters which are designated for general aquatic life support.

22  
23 Ether, Bis Chloromethyl

24  
25 The criteria for this pollutant has been deleted. Appendix B contains a  
26 listing for “Bis (chloromethyl) Ether” which is the same substance.

27  
28  
29 Appendix B. Site Specific Criteria.

30  
31 The language referencing Donkey Creek in the Belle Fourche Drainage and Antelope  
32 Creek in the Cheyenne River Drainage has been revised. This section of the rules was  
33 adopted in March 2000. At that time, Donkey and Antelope Creeks were Class 2 waters  
34 designated for drinking water protection. The purpose of this section was to remove the  
35 drinking water criteria for iron and manganese from selected Class 2 waters including  
36 Donkey and Antelope Creeks. In July 2001, these streams were re-designated to Class  
37 3B which does not include a drinking water designation. The iron and manganese human  
38 health criteria do not apply on any Class 3 waters and therefore, the site-specific  
39 designation is no longer necessary.

1  
2 Cottonwood Creek - Big Horn River Basin  
3

4 Site specific criteria for selenium (43 µg/L) and chloride (860 mg/L) are proposed for  
5 Cottonwood Creek, a tributary to the Big Horn River near Hamilton Dome. The  
6 justification for the modified criteria is contained in a Use Attainability Analysis (UAA)  
7 completed in February, 2003 by Merit Energy Company. Ambient conditions in  
8 Cottonwood Creek exceed the Appendix B criteria for selenium and chloride and the  
9 stream is currently listed on the state's 303(d) list of impaired waters. The source of the  
10 elevated selenium and chloride is in water discharged from the Hamilton Dome oil field  
11 operated by Merit Energy. The UAA successfully demonstrated that the aquatic  
12 community composition below the Hamilton Dome discharge is not significantly  
13 different from above the discharge despite the increased pollutant concentrations.  
14 Therefore, there would be no advantage to aquatic life by requiring compliance with the  
15 more stringent Appendix B criteria. The criteria are being modified to reflect the actual  
16 ambient concentrations and will be implemented as instantaneous maximum  
17 concentrations.  
18

19  
20 Poison Spider Creek – North Platte River Basin  
21

22 A site specific criterion for chloride (531 mg/L) is proposed for Poison Spider Creek, a  
23 tributary to the North Platte River near Casper. The new criterion represents an  
24 instantaneous maximum concentration, not to be exceeded at any time. The justification  
25 for the modified criterion is contained in a Use Attainability Analysis (UAA) completed  
26 in February, 2005 by Meritage Energy Partners, LLC. Ambient conditions in Poison  
27 Spider Creek exceed the Appendix B criteria for chloride originating in a currently  
28 permitted discharge from the South Casper Creek oil facility. A downstream reach of the  
29 creek is currently listed on the state's 303(d) list of impaired waters. The selenium  
30 impairment is not attributed to the oil field discharge and the increased flows from the  
31 discharge tend to mitigate downstream selenium concentrations to some extent. The  
32 UAA successfully demonstrated that the aquatic community composition below the  
33 Meritage discharge is not significantly different from above the discharge despite the  
34 increased chloride concentrations. Therefore, there would be no advantage to aquatic life  
35 by requiring compliance with the more stringent Appendix B criteria. This criterion is  
36 being modified to reflect the actual ambient concentrations.  
37

38  
39 Salt Creek, Meadow Creek and the Powder River  
40

41 As with Poison Spider Creek, Salt Creek, Meadow Creek and the main stem of the  
42 Powder River below Salt Creek have elevated levels of chloride attributable to discharges

1 of oil produced water from the Salt Creek oil fields. A use attainability analysis  
2 developed by Anadarko Petroleum Corporation in November, 2004 has successfully  
3 demonstrated that the aquatic life communities resident in the affected stream segments  
4 are not adversely affected by the elevated chloride concentrations. In addition, the  
5 increased flows have been shown to provide a number of benefits to wildlife and  
6 agriculture in the area. Based on that analysis, site-specific chloride criteria of 1600  
7 mg/L shall apply on Salt Creek and Meadow Creek and 984 mg/L shall apply on the  
8 main stem of the Powder River below Salt Creek. These values represent maximum  
9 recorded ambient concentrations in the affected streams and shall be implemented as  
10 instantaneous maximum concentrations.

11  
12 The main stem of the Powder River is listed as impaired for chloride for an undetermined  
13 length below the Salt Creek confluence. These chloride criteria may require an  
14 additional modification in the next standards review as a better understanding of the  
15 length and seasonality of the ambient chloride concentrations is developed.

16  
17 Appendix C - Ammonia tables for “Early Life Stages Present”, page C-2

18  
19 The ammonia criterion relative to a temperature of 20<sup>o</sup> and a pH of 6.7 has been  
20 changed to 4.52 mg N/L. The previous value of 5.52 was a typographic error.

21  
22 The chronic aquatic life values (CCC values) for ammonia are based upon whether or not  
23 early life stages of fish are present in the water or not. The footnote for these values has  
24 been modified to explain that the CCC values will be implemented on Class 2 waters  
25 with an assumption that early life stages of fish are present. This assumption can be  
26 rebutted, but only where a permittee, discharge permit applicant or affected party  
27 provides sufficient site-specific information to support a conclusion that the assumption  
28 is not appropriate for that waterbody.

29  
30 Appendix F - Hardness Equations

31  
32 The equation for calculating aquatic life values for cadmium has been updated to the  
33 current national recommendation, published by EPA in November 2002.

34  
35 The previous Appendix F included a footnote, indicating that, for hardness values less  
36 than 25 mg/L, the 25 mg/L value will be used. That footnote was consistent with EPA's  
37 former recommendation on this issue. EPA, however, now recommends that this low end  
38 hardness cap for metals be removed (the Agency continues to recommend the upper end  
39 cap of 400 mg/L). As explained in EPA's National Recommended Water Quality  
40 Criteria: 2002 (EPA-822-R-02-047, November 2002), the reason for the revised  
41 recommendation is that capping the hardness at 25 mg/L may result in criteria that  
42 provide less protection than that intended by EPA's criteria guidelines used in the

1 calculation of the national criteria. The footnote has been modified to reflect EPA's  
2 current recommendation.

3  
4 **Effect of the Rule Revision**

5  
6 The Council anticipates that the result of these proposed revisions will provide a level of surface  
7 water protection sufficient to address public health and environmental concerns. The revised  
8 standards update the Wyoming surface water protection program to meet the most current federal  
9 requirements provided in 40 CFR Part 131.

10  
11 **Public Participation**

12  
13 On July 15, 2002 a public notice announcing the department's intention to revise the Chapter 1  
14 surface water regulations was released for the purpose of soliciting comment relating to the  
15 proposal. A public meeting was held via the Wyoming Video Conference System on August 6,  
16 2002 during which the department accepted both oral and written comments. Comments  
17 received as a result of this public outreach were considered in the drafting of the proposed  
18 revisions.

19  
20 A first draft of proposed rules and policies was published in November, 2004 and public  
21 comment was solicited by the Water and Waste Advisory Board at a public meeting on March 2,  
22 2005. After consideration of public comments received, a second draft of the rules and policies  
23 was published for public review on August 8, 2005. Public comments on the 2<sup>nd</sup> draft were  
24 solicited and considered by the Advisory Board at a public meeting in September, 2005. A 3<sup>rd</sup>  
25 draft was developed and approved by the Advisory Board in January, 2006. Though the  
26 Advisory Board approved the proposed Chapter 1 rule revisions at the January, 2006 meeting,  
27 they did not approve the associated Section 20 Agricultural Use Protection Policy. A 4<sup>th</sup> draft of  
28 the Agricultural Use Policy was published in March 2006 and public comments were solicited.  
29 After consideration of the comments received, a 5<sup>th</sup> Draft of the policy was published in July,  
30 2006 and deliberated by the Advisory Board at a public meeting in August, 2006. Comments on  
31 the 5<sup>th</sup> Draft were solicited and after final Advisory Board revisions were made, the Agricultural  
32 Use Protection Policy was approved at a public meeting on October 18, 2006.

1 **Conclusion.** The Council has determined that the adoption of these rules is necessary to update  
2 the Wyoming surface water standards to comply with federal regulations and to carry out the  
3 responsibilities of the Department of Environmental Quality in regards to the protection of  
4 surface water quality in the state.  
5  
6  
7

8 EXECUTED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2001.  
9

10  
11 FOR THE ENVIRONMENTAL QUALITY COUNCIL  
12

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15

16 \_\_\_\_\_  
Chairperson