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5. References

1. INTRODUCTION

The Idaho Department of Environmental Quality (IDEQ or State) submitted docket 58-0102-0101, containing revised water quality standards and supporting documents, to the U.S. Environmental Protection Agency, Region 10 (EPA) for review on March 18, 2002. The State also provided certification that the revised water quality standards had been adopted into Idaho regulations according to Idaho law.

EPA has previously acted on some of these revised water quality standards. However, EPA has not previously acted on the revisions pertaining to the State's changes in designated aquatic and recreational uses for water bodies in the lower Boise Subbasin (HUC 17050114). This document sets forth EPA's decisions on those outstanding water quality standards revisions. These water bodies are tributaries to the Boise River, which in itself is a tributary to the Snake River; one of these water bodies is directly a tributary to the Snake River.

Section 2 of this document sets forth the verbatim text of the section of the revised water quality standards submitted to EPA on March 18, 2002 specifically pertaining to changes in designated uses for water bodies in the lower Boise Subbasin.

Section 3 of this document describes regulations and guidance that describe under what conditions a State may remove or change a designated use.

Section 4 of this document provides a line-by-line explanation of the revisions in the State's standards, EPA's action on the revision, EPA's basis for its action, and, in some cases, recommendations to the State. For water body lengths provided in Section 4, EPA has used lengths provided in CH2MHill (2001) (for Indian Creek, Mason Creek, and Sand Hollow Creek) and IDEQ (2001, "Lower Boise River Nutrient & Tributary Subbasin Assessments") (for Fivemile, Tenmile, and Fifteenmile Creeks).

Section 5 of this document provides a list of references cited.

2. TEXT OF REVISED IDAHO WATER QUALITY STANDARDS REVIEWED BY EPA

[EPA Note: The following is a transcription of portions of the final regulatory text submitted to EPA as part of docket 58-0102-0101 on March 18, 2002, by the State of Idaho. These portions include changes in use designations in the lower Boise River Subbasin (HUC 17050114).]

100. SURFACE WATER USE DESIGNATIONS.

Waterbodies are designated in Idaho to protect water quality for existing or designated uses. The designated use of a waterbody does not imply any rights to access or ability to conduct any activity related to the use designation, nor does it imply that an activity is safe. For example, a designation of primary or secondary contact recreation may occur in areas where it is unsafe to enter the water due to water flows, depth or other hazardous conditions. Another example is that aquatic life uses may be designated in areas that are closed to fishing or access is not allowed by property owners. Wherever attainable, the designated beneficial uses for which the surface waters of the state are to be protected include: (4-5-00)-(11-9-01)T

[EPA Note: no changes until section 140]

140. SOUTHWEST IDAHO BASIN.

Surface waters found within the Southwest basin total nineteen (19) subbasins and are designated as follows:

12. Lower Boise Subbasin. The Lower Boise Subbasin, HUC 17050114, is comprised of seventeen (17) water body units.

Unit	Waters	Aquatic Life	Recreation	Other
SW-1	Boise River-Indian Creek to Mouth	COLD	PCR	
SW-2	Indian Creek - Sugar Ave. (T03N, R02W, Sec 15) to mouth	COLD	SCR	
SW-3a	Split between New York Canal and historic creek bed to Sugar Ave. (T03N, R02W, Sec. 15)	COLD SS	SCR	
SW-3b	Indian Creek Reservoir to split between New York Canal and historic creek bed	MOD	SCR	
SW-3c	Indian Creek Reservoir	WARM	PCR	
SW-3d	Indian Creek - source to Sugar Ave. (T03N, R02W, Sec 15) Indian Creek Reservoir	COLD SS SC	PCR SCR	

Unit	Waters	Aquatic Life	Recreation	Other
SW-4	Lake Lowell	WARM	PCR	SRW
SW-5	Boise River - river mile 50 (T04N, R02W, Sec. 32) to Indian Creek	COLD SS	PCR	
SW-6	Mason Creek - source <u>New York Canal</u> to mouth	<u>MOD</u>	<u>SCR</u>	
SW-7	Fifteenmile Creek - Miller Canal to mouth	<u>MOD</u>	<u>SCR</u>	
SW-8	Tenmile Creek - Blacks Creek Reservoir Dam to Miller Canal	COLD <u>MOD</u>	<u>SCR</u>	
SW-9	Blacks Creek - source to and including Blacks Creek Reservoir			
SW-10	Fivemile Creek - source to Miller Canal	COLD <u>MOD</u>	<u>SCR</u>	
SW-11a	Boise River - Diversion Dam to river mile 50 (T04N, R02W, Sec. 32)	COLD SS	PCR	DWS SRW
SW-11b	Boise River - Lucky Peak Dam to Diversion Dam	COLD	PCR	DWS SRW
SW-12	Stewart Gulch, Cottonwood and Crane Creeks -source to mouth			
SW-13	Dry Creek - source to mouth			
SW-14	Big/Little Gulch Creek complex			
SW-15	Willow Creek - source to mouth			
SW-16	Langley/Graveyard Gulch complex			
SW-17	Sand Hollow Creek - source to mouth	<u>MOD</u>	<u>SCR</u>	

~~(4-5-00)~~(11-9-01)T

[EPA Note: No change until section 278 as follows]

278. LOWER BOISE RIVER SUBBASIN, HUC 17050114 SUBSECTION 150.12 –SW-1 AND SW-5 SALMONID SPAWNING AND DISSOLVED OXYGEN.

01. Boise River, SW-1 and SW-5 - Salmonid Spawning and Dissolved Oxygen.

The waters of the Boise River from Veterans State Park to its mouth will have dissolved oxygen concentrations of six (6) mg/l or seventy-five percent (75%) of saturation, whichever is greater, during the spawning period of salmonid fishes inhabiting those waters. ~~(7-1-93)~~(11-9-01)T

02. Indian Creek, SW-3b, Mason Creek, SW-6, And Sand Hollow Creek, SW-17

- Modified Aquatic Life Use. All numeric criteria applicable to the seasonal cold water aquatic life use apply with the exception of dissolved oxygen. Dissolved oxygen concentrations are to exceed four (4) mg/l at all times. (11-9-01)T

03. Fifteenmile Creek, SW-7; Tenmile Creek, SW-8, and Five Mile Creek, SW-10
- Modified Aquatic Life Use. All numeric criteria *applicable to the* seasonal cold water aquatic life use apply. (11-9-01)T

3. EPA'S BASIS FOR APPROVAL OR DISAPPROVAL OF REVISED IDAHO WATER QUALITY STANDARDS

EPA is taking action on the changes to Idaho's water quality standards listed in Section 2 of this document which relate to changes in designated aquatic life and recreational uses for specific water bodies in the lower Boise River subbasin. EPA is not taking action on the language at section 100 in Section 2 because that language is not a water quality standard under Section 303(c) of the Clean Water Act.

EPA regulations set forth specific requirements that govern the circumstances under which changes in designated uses may be made. Designated uses may be removed only under certain circumstances defined in 40 CFR 131. For example, a State may not remove a designated use if it is an existing use (unless the State is adding a use with more stringent criteria) or if the use would be attained by implementing CWA §§ 301(b) and 306 effluent limits and cost-effective and reasonable best management practices (BMPs) for nonpoint source control (40 CFR 131.10(h)). In addition, a State may remove a designated use that is not an existing use if the State can demonstrate that attaining the designated use is not feasible because of one of six factors identified at 40 CFR 131.10(g)t. This section (Section 3) includes a more detailed explanation of these requirements.

3.0 Existing uses

States may not remove designated uses (defined as "those uses specified in water quality standards for each water body or segment whether or not they are being attained," 40 CFR 131.3(f)) if they are existing uses (defined as "those uses actually attained in the water body on or after November 28, 1975, whether or not they are included in the water quality standards," 40 CFR 131.3(e)) (40 CFR 131.10(h)(1)).

In order to determine whether or not a use is an existing use, site-specific water quality and other limiting factors such as physical habitat, should be considered ("Water Quality Standards Regulation, Advance notice of proposed rulemaking" or ANPRM; 63 FR 36752, July 7, 1998). Limited guidance exists on specific technical data and evaluations that should be used to support an existing use determination; however, the types of data and evaluations expected in a use attainability analysis (UAA; see Section 3.1) should address what uses are currently being achieved in the water body (p. 2-9, EPA Water Quality Standards Handbook, 1994).

Characterizing the existing use in a water body is important for several reasons. An existing use determination is an important element of conducting a use attainability analysis (see section 3.1). A use attainability analysis includes an examination of the physical, chemical, and biological characteristics of the water body to identify and define the existing uses of that water body ("Water Quality Standards Regulation, Preamble," 48 FR 51401, November 8, 1983). In addition, the uses that are presently being

attained in a water body is an important consideration in determining the appropriate designated use in a water body. For example, federal requirements state that when “designated uses [are] less than those which are presently being attained, the State shall revise its standards to reflect the uses actually being attained” (40 CFR 131.10(i)).

3.1 Demonstrating that attaining the use is infeasible; use attainability analyses (UAAs)

3.1 (a) Use removal factors

If the designated use is not an existing use, then a State may remove the use, or establish a sub-category of the use, if the State can “demonstrate that attaining the designated use is not feasible because:

- (1) Naturally occurring pollutant concentrations prevent the attainment of the use; or
- (2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or
- (3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or
- (4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or
- (5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or
- (6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.” (40 CFR 131.10(g))

In other words, once a use is designated, it is presumed to be attainable and may not be removed unless the State can demonstrate that attaining the designated use is not feasible based on one of these six factors. These six factors are the regulatory bases for removing a use that is not an existing use.

EPA regulations state that at a minimum, uses are deemed attainable if they can be achieved by the

imposition of effluent limits required under sections 301(b) and 306 of the Act and cost-effective and reasonable best management practices (BMPs) for nonpoint source control (40 CFR 131.10(d)). See also 40 CFR 131.10(h)(2).

It is important to understand that removal of a designated use, or subcategorizing a designated use into a subcategory with less stringent criteria, requires a demonstration that the designated or presumed uses of a water body are not attainable. As explained by the Agency in its ANPRM (63 FR 36748, July 7, 1998),

“[b]ecause water quality standards perform the dual function of establishing water quality goals and ultimately serving as the regulatory basis for water quality-based treatment controls and strategies...a State or Tribe often weighs the environmental, social and economic consequences of its decisions in designating uses...Appropriate application of this process involves a balancing of environmental, scientific, technical, and economic and social considerations as well as public opinion and is therefore one of the most challenging areas of the current regulation.

To direct this decision making process, the regulation establishes requirements that must be followed when designating uses or concluding that attaining a use is infeasible. When performing this attainability analysis, a State or Tribe considers physical, chemical, biological and economic factors that may limit the potential for achieving the goal use.

EPA’s current water quality regulation effectively establishes a “rebuttable presumption” that “fishable/swimmable” uses are attainable and therefore should apply to a water body unless it is affirmatively demonstrated that such uses are not attainable. EPA believes that the rebuttable presumption policy reflected in these regulations is an essential foundation for effective implementation of the Clean Water Act as a whole. The “use” of a water body is the most fundamental articulation of its role in the aquatic and human environments, and all of the water quality protections established by the CWA follow from the water’s designated use...The rebuttable presumption approach does not restrict the discretion that States and Tribes have to determine that “fishable/swimmable” uses are not, in fact, attainable in a particular case. Rather...the regulations simply require that such a determination be based upon a credible, “structured scientific assessment” of use attainability.

Because there is a presumption that the uses specified in sections 101(a)(2) and 303(c) of the Clean Water Act are attainable...the criteria for overcoming that presumption are carefully circumscribed. The economic use removal test, for example, requires a showing that the cost of compliance with the use(s) would result in “substantial and widespread economic and social impact.” This is a high threshold to ensure that the interim goals of section 101(a)(2) and the section 303(c) uses are not abandoned without appropriate cause.

3.1 (b) Use attainability analyses (UAAs)

A State must conduct a “use attainability analysis” (UAA) whenever the State designates or has designated uses that do not include the uses specified in section 101(a)(2) of the CWA; wishes to remove a designated use that is specified in section 101(a)(2) of the Act; or wishes to adopt subcategories of uses

specified in section 101(a)(2) of the Act which require less stringent criteria than the current designated use. A UAA is “a structured scientific assessment of the factors affecting the attainment of the use which may include physical, chemical, biological, and economic factors as described in §131.10(g)” (40 CFR 131.3(g)). UAAs should include sufficient detail on physical, chemical, and biological factors to answer questions including what aquatic uses are currently being achieved in the water body, what is causing impairment of the aquatic uses, and what aquatic uses could be attained based on the physical, chemical, and biological characteristics of the water body (p. 2-9, Water Quality Standards Handbook). Other UAA guidance, protocols, and examples also exist or are in development. These include EPA (1983), (2003); and Washington Department of Ecology (2004) and are useful as general background as to important elements a UAA may contain, including:

- Identification of specific anthropogenic and natural factors preventing attainment of the use
- Explanation as to why these factors prevent the attainment of the use
- Identification of potential measures to address these factors that could restore the area to its biological or recreational potential (e.g., BMPs, direct habitat restoration, alternative flow or maintenance procedures, etc.)
- Assessment of the impacts of applying some combination of these measures, and of the levels of beneficial uses that could be supported if these measures were implemented.
- If irreversible factors (e.g., irreversible channelization, high/low flow regimes permitted by water rights, etc.) are causing non-attainment of beneficial uses, economic and social impacts of mitigating these factors may be explained.

3.2 Summary of basis for EPA action

Idaho is seeking changes in recreational use designations in six water bodies (Indian Creek (three segments), Mason Creek, Fifteenmile Creek, and Sand Hollow Creek), and changes in aquatic life use designations in eight water bodies (Indian Creek (three segments), Mason Creek, Fifteenmile Creek, Tenmile Creek, Fivemile Creek, and Sand Hollow Creek). EPA has reviewed the documents submitted by the State in support of the State’s use designation changes. Specifically, the State submitted the following document in support of the designated use changes for Indian Creek, Sand Hollow Creek, and Mason Creek:

- CH2MHill, 2001. Beneficial use evaluation for selected tributaries in the Lower Boise River. Dated May 15, 2001. 29 pp. plus figures and appendices.

The State submitted the following document in support of the designated use changes for the Fivemile Creek, Tenmile Creek and Fifteenmile Creek:

- Ringert and Clark, 2001. UAAs for Fivemile, Tenmile and Fifteenmile Drains. Dated June

28, 2001. 20 pp. plus figures and appendices.

In addition, EPA made efforts to supplement information in the UAAs with information from other readily available sources with the goal of developing as complete an understanding of the existing and attainable uses in the water bodies as possible. These efforts included EPA technical staff touring the water bodies, and EPA technical staff obtaining and reviewing information relevant to these water bodies that was not included in the information submitted to EPA with the UAAs. EPA toured the tributaries on September 2, 2004 with staff from the Idaho Department of Environmental Quality (IDEQ) (see McGuire, 2004, "Notes from Boise field tour"). EPA considered other documents and data not included in IDEQ's formal submittal if they aided in understanding physical, chemical, and biological aspects of the tributaries. Other documents referenced or consulted by the team during the review of the UAAs cited above include:

- IDEQ, 1998. Lower Boise River TMDL – Subbasin Assessment, Total Maximum Daily Loads, and Technical Appendices.
- IDEQ, 2001. Lower Boise River Nutrient & Tributary Subbasin Assessments.
- Letter from Tracey Trent, Regional Supervisor, IDFG, to Steve West, Administrator, IDEQ, Boise Regional Office, dated February 18, 1997. Subject: "Re: Letter of December 31, 1996 Requesting Information on Status of Fish Populations in Boise River Drainage" (note that this document is included as a technical appendix to IDEQ, 1998, cited above)

A complete list of citations is included in Section 5 of this document.

In reviewing the UAAs and developing recommendations regarding approval of the designated use changes, EPA has focused on two initial questions: (1) what, according to the physical, chemical, and biological data submitted in the UAAs or otherwise obtained by EPA, is the existing use in the water body, and (2) whether it has been demonstrated that the designated use is not an attainable use. These two questions surrounding existing and attainable uses formed the core of EPA's review. In addition, EPA considered whether the revised use designations and criteria are consistent with other requirements of 40 CFR 131 including the provision under 40 CFR 131.10 that the proposed revised standards provide for the attainment and maintenance of the water quality standards of downstream waters and provisions under 40 CFR 131.11 pertaining to water quality criteria. Finally, EPA considered EPA's policy regarding designation of recreational uses when public safety is a concern.

4. LINE-BY-LINE EXPLANATION OF CHANGES IN STATE STANDARDS AND EPA’S ACTION

4.0 Addition of explanatory text to surface water use designation section

100. SURFACE WATER USE DESIGNATIONS.

Waterbodies are designated in Idaho to protect water quality for existing or designated uses. The designated use of a waterbody does not imply any rights to access or ability to conduct any activity related to the use designation, nor does it imply that an activity is safe. For example, a designation of primary or secondary contact recreation may occur in areas where it is unsafe to enter the water due to water flows, depth or other hazardous conditions. Another example is that aquatic life uses may be designated in areas that are closed to fishing or access is not allowed by property owners. Wherever attainable, the designated beneficial uses for which the surface waters of the state are to be protected include:

4.0 (a) Basis for EPA action

EPA views the underlined text above as introductory language that the State included to discuss the effect of designations under State law, and whether such designations confer rights. This language is not a water quality standard under section 303(c) of the Clean Water Act and EPA is not required to act on this language, either to approve or disapprove. The language does not establish or revise any designated use or criteria.

4.1 Change in recreational use designation for SW-3a

Unit	Waters	Aquatic Life	Recreation	Other
SW-3a	<u>Split between New York Canal and historic creek bed to Sugar Ave. (T03N, R02W, Sec. 15)</u>	<u>COLD</u> <u>SS</u>	<u>SCR</u>	

4.1 (a) Explanation of change in State’s standard:

With this change, the State divides water body unit SW-3 (Indian Creek from the source to Sugar Avenue, designated for COLD, SS, and PCR) into four water body units based on distinct hydrologic regimes in each of the four units. The revised units are SW-3a, SW-3b, SW-3c, and SW-3d.

With this change, the State also is removing the recreational use designation of primary contact recreation

(PCR) from SW-3a, which is 5.6 miles in length, and has replaced it with secondary contact recreation (SCR).

For reference, Idaho regulations define PCR as “water quality appropriate for prolonged and intimate contact by humans or for recreational activities when the ingestion of small quantities of water is likely to occur. Such activities include, but are not restricted to, those used for swimming, water skiing, or skin diving.” SCR is defined 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 raw water is not likely to occur.”

Furthermore, in addition to general surface water criteria specified in Idaho regulations at IDAPA 58.01.02.200 and numeric toxic criteria applicable to recreational uses specified at IDAPA 58.01.02.210, waters designated for PCR must meet numeric bacteria criteria of *E. coli* not to exceed a geometric mean value of 126 per 100 mL, and not to exceed a single sample maximum value of 406 per 100 mL. Waters designated for SCR must meet bacteria criteria of *E. coli* not to exceed a geometric mean value of 126 per 100 mL, and not to exceed a single sample maximum value of 576 per 100 mL.

For both PCR and SCR, Idaho regulations clarify that exceedance of the single sample maximum value is not in itself a violation of water quality standards, but is to be used to trigger additional sampling from which to derive a geometric mean value to determine compliance with the geometric mean criteria (IDAPA 58.01.02.080.03).

The State is retaining the designated aquatic life uses of COLD and SS for this water body.

4.1 (b) Data and rationale submitted by State in support of change:

The State summarizes basic hydrology (average upstream and downstream irrigation and nonirrigation flow) and physical conditions of the channel, riparian area (both livestock-accessible and non-accessible portions), and canopy, presenting one quantitative habitat measure indicating habitat “slightly below” the threshold for habitat impairment. While the State notes that habitat impairment is due to lack of pools or pool variability, poor riparian and canopy cover, and poor channel sinuosity, the State does not describe in detail the physical conditions that make the water body unsafe for PCR. Available water quality data are summarized, which include recent maximum average pathogen indicator values. The maximum values cited exceed both the primary and secondary contact recreation numeric criteria. The State asserts that secondary contact recreation is the current existing use in the water body and that streamflow is at times “too rapid for safe swimming or fishing activities.” No observations as to actual recreational use of this water body, or flow velocities, are provided.

The State asserts that PCR uses are limited by hydrologic irrigation operations that control flows.

4.1 (c) EPA action:

EPA approves changing the designated recreational use in this water body from PCR to SCR.

4.1 (d) Basis for EPA action:

Recreational use

EPA has recognized in previous policy and guidance that there may be situations where primary contact recreation (e.g., swimming) may occur even though it is not wise or safe to encourage such activities as swimming. In such cases, EPA guidance provides States with an option described as follows: “EPA believes that a secondary contact recreational use (with criteria sufficient to support primary contact recreation) is consistent with the CWA section 101(a)(2) goal. The rationale for this option is discussed in the preamble to the Water Quality Standards Regulation, which states: ‘...even though it may not make sense to encourage use of a stream for swimming because of the flow, depth or the velocity of the water, the States and EPA must recognize that swimming and/or wading may occur anyway. In order to protect public health, States must set criteria to reflect recreational uses if it appears that recreation will in fact occur in the stream.’” (EPA Water Quality Standards Handbook, 1994, p. 2-2; see also EPA, 1989, Memorandum from William Diamond, Director, Criteria and Standards Division, To Bruce Barratt, Director, Water Management Division, Region IV, September 7, 1989, “Designation of Recreation Uses”). This guidance also indicates that future revisions to the bacteriological criterion for specific stream segments designated according to this policy would be subject to the downgrading provisions set forth in 40 CFR 131.10 (again, see EPA Water Quality Standards Handbook, p. 2-2; Memorandum from William Diamond, Director, Criteria and Standards Division, To Bruce Barratt, Director, Water Management Division, Region IV, September 7, 1989, “Designation of Recreation Uses”).

Consistent with the above policy, in the Idaho standards, the geometric mean (126 *E. coli* per 100 mL) portion of the numeric criteria is to be used to evaluate compliance for both the PCR and SCR uses. Although the numeric value which triggers sampling differs between PCR and SCR (406 per 100 mL vs. 576 per 100 mL), EPA believes that the SCR criteria provides adequate protection if PCR uses occur because a geometric mean of 126 *E. coli* per 100 mL is the measure of compliance in either case.

While the UAA states that SCR is the existing use in this water body, it does not in the UAA provide observations relating to the frequency or nature of recreational use in this specific water body, especially regarding swimming. EPA is aware that the State has said elsewhere that “many portions” of Indian Creek are used for “swimming, wading, and kayaking”¹ (although EPA notes that this reference does not

¹ According to a sub-basin assessment written by the State in 2001, “[d]uring the summer, many portions of Indian Creek are used for swimming, wading and kayaking. However, the managing irrigation districts discourage contact recreation due to the dangers of high flow velocities and entrenched channels. Below the New York Canal, where the depths and flow are ample to support contact recreation, the banks in many locations are steep and heavily

indicate whether this statement pertains to this particular segment of Indian Creek). However, considering that boating, wading, and infrequent swimming are activities the State defines as SCR, and the lack of specific information on the frequency and nature of recreational use in this water body, the existing recreational use in this water body is unclear.

Nevertheless, the State has clearly asserted that contact recreation in this water body is unsafe due to high flows, entrenched channels, and steep and heavily vegetated banks. See footnote 1. The State has also submitted newspaper articles chronicling a number of drowning fatalities in the lower Boise Valley which have occurred in irrigation waterways, including Indian Creek. Documentation of such drowning fatalities and accidents, and public education and outreach efforts undertaken by irrigation districts, neighborhood groups, and others, regarding dangers of swimming in irrigation canals is available in Appendix 8 of Ringert and Clark (2001).

Since PCR is unsafe in this segment, and documentation is available as to unsafe conditions in irrigation waterways such as Indian Creek, and since Idaho regulations establish that the bacteriological criterion used for compliance purposes is the same for both PCR and SCR, given the policy option that EPA has explained in previous guidance, designating SCR in this case is supported.

4.2 Change in aquatic life and recreational use designations for SW-3b

Unit	Waters	Aquatic Life	Recreation	Other
SW-3b	<u>Indian Creek Reservoir to split between New York Canal and historic creek bed</u>	<u>MOD</u>	<u>SCR</u>	

4.2 (a) Explanation of change in State’s standard:

Water body unit SW-3b is the second unit into which the State has subdivided SW-3. SW-3 was previously designated for COLD, SS, and PCR. With the above change, the State is removing the PCR recreational use designation from this 31.1 mile segment of SW-3 and is replacing it with SCR. For definitions of the PCR and SCR designated uses and criteria, see section 4.1(a).

The State is also removing the aquatic life use designations of cold water biota (COLD) and salmonid spawning (SS) and is replacing them with the modified (MOD) aquatic life use designation.

vegetated” (IDEQ 2001, Indian Creek Subbasin Assessment, p. 15). In addition, IDEQ has previously recommended that although this segment of Indian Creek had significant exceedances of contact recreation criteria, “appropriate corrective actions should be identified and implemented to restore full support of primary and secondary contact recreation in Indian Creek.” (IDEQ 1998b, p. 3).

For reference, the COLD designation is defined in Idaho regulations as “water quality appropriate for the protection and maintenance of a viable aquatic life community for cold water species.” In addition to general surface water criteria specified at IDAPA 58.01.02.200, general criteria applicable to all aquatic life use designations specified at IDAPA 58.01.02.250.01, and numeric toxic criteria for aquatic life uses specified at IDAPA 58.01.02.210, streams designated for COLD must meet certain ammonia and turbidity requirements, and must have dissolved oxygen (DO) \geq 6 mg/L and water temperature [22 deg. C with a maximum daily average of [19 deg. C. Streams designated for salmonid spawning must meet more stringent DO and temperature requirements during spawning and incubation periods.

The MOD designation is defined in Idaho regulations as “water quality appropriate for an aquatic life 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.” Idaho regulations state that water quality criteria for MOD “will be determined on a case-by-case basis reflecting the chemical, physical, and biological levels necessary to attain the existing aquatic life community.” For this specific water body, the State has defined the aquatic life community represented by the MOD designation as “a transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...[and] that are present for a limited period of time (typically less than 2 months) only until they are fished out of the system or the irrigation season ends” (CH2MHill, 2001, p. 24). The State asserts that fish that are not caught during a few-month period during the irrigation season from these “modified” systems die naturally at the end of the irrigation season when flows decrease dramatically or disappear.

In addition to general surface water criteria specified at IDAPA 58.01.02.200, general criteria applicable to all aquatic life use designations at IDAPA 58.01.02.250.01, and numeric toxic criteria for aquatic life uses specified at IDAPA 58.01.02.210, for SW-3b, the State establishes site specific criteria to protect the MOD designated use in this water body as follows: ammonia criteria equal to the ammonia criteria for COLD, DO \geq 4 mg/L, and daily maximum temperature [26 deg. C, with daily average temperature [23 deg. C. Overall, these criteria are less stringent than those for COLD. See section 4.11.

4.2 (b) Data and rationale submitted by State in support of change:

The State provides a photograph that the State says represents typical conditions and reflects adjacent land management practices for this water body. The State briefly summarizes the limited available hydrologic, physical, chemical, and biological data for this water body. The UAA also provides small, low-resolution maps of the entire subbasin that show sampling locations and summary values for physical, chemical, and biological data. The State explains that the upper 24 mile of the segment is intermittent and water is present only as disconnected swampy areas which, on the basis of several summer time observations and depth to groundwater, are “believed to be remnant pools of spring runoff.” The State explains that the lower 6.7 mile portion serves as an irrigation conduit with high flows (>600 cfs) during the April–October irrigation season, and “essentially” zero flows during the non-irrigation

season². The State presents DO, temperature, and fecal coliform (FC) results of one water quality sample taken in July 1979 from the upper portion. The State summarizes water quality observations for the lower portion; the summary values indicate water quality consistent with the criteria established for the COLD designated use. No macroinvertebrate data are provided for the water body. A single November, 1999 fish survey reported in the lower portion showed the presence of multiple cool (dace and suckers) and two cold water fish (sculpin). The State reports that the New York Canal portion of this water body is used for kayaking during the irrigation season. Although the State asserts that flow in this portion is intermittent and linked to the irrigation season, the State does not provide more detailed flow data (e.g., average monthly streamflow) to illustrate seasonal flow patterns in this water body.

In the upstream ephemeral portion, the State asserts that SCR is the existing use and that PCR is an unsuitable use designation due to intermittent flow and lack of canopy. The State does not cite a 40 CFR 131.10(g) factor as a basis for removing the designated recreational use in this portion. With respect to the downstream “New York Canal” portion, the State also asserts that SCR is the existing use and identifies intermittent flows, lack of canopy cover, and operation of this segment as an irrigation conveyance as factors making this portion unsuitable for PCR. The State notes that the irrigation districts which operate these water bodies do not condone or encourage the use of these water bodies for contact recreation.

The State cites 40 CFR 131.10(g) factors 2 and 5 in support of removing the designated aquatic life use in the upstream ephemeral segment. The State cites 40 CFR 131.10(g) factors 2, 4, and 5 to justify removing the designated aquatic life use in the downstream “New York Canal” segment. The State provides a generic statement asserting that “transforming” these tributaries into water bodies suitable for COLD is “not feasible” because of the length of these and similar water bodies, the current and foreseeable irrigation management activities, the scope of the project that would be required, and the multiple stakeholders involved. However, the State provides no further discussion or analyses in support of these assertions for any specific water body.

4.2 (c) EPA action:

EPA approves changing the PCR recreational use designation to SCR.

EPA disapproves removing the COLD and SS aquatic life use and designating an aquatic life use of MOD.

² That is, a large irrigation canal (New York Canal) is routed along the Indian Creek channel in this segment; the point at which the canal separates from Indian Creek is the endpoint of this water body. New York Canal draws water from the Boise River (designated aquatic life use of cold water biota) and discharges into Lake Lowell (designated aquatic life use of warm water biota).

4.2 (d) Basis for EPA action:

This water body unit comprises two distinct segments – the upper portion, where flow is intermittent or ephemeral, and the lower segment, where the New York Canal is routed along a nearly seven mile stretch of the water body unit.

Recreational use – safety (downstream “New York Canal” portion only)

Regarding the lower, “New York Canal” portion, the UAA states that SCR is the existing use and reports in its UAA that kayaking occurs in this portion during the irrigation season. The State has maintained elsewhere that swimming, wading, and kayaking occur in “many portions” of Indian Creek (see footnote 1), but this reference does not indicate whether this statement pertains to this particular segment of Indian Creek, and how frequently the swimming use occurs. Considering that boating, wading, and infrequent swimming are activities the State defines as SCR, and the lack of specific information on the frequency and nature of PCR in this water body, if any, the existing recreational use in this water body is unclear.

Nevertheless, it is also well documented that such activities can be very dangerous in irrigation waterways in the lower Boise system and a number of efforts have been undertaken to educate the public regarding the hazards of recreation in these waterways. EPA is aware of drowning fatalities that have occurred in the New York Canal (see documentation provided as Appendix 8 in Ringert & Clark (2001). As explained earlier, when primary contact recreation activities are highly dangerous but may occur anyway, and when bacteriological criteria for PCR and SCR are equally protective, an appropriate approach is to designate a water body for SCR, with water quality criteria sufficient to protect PCR. See section 4.1(d) above.

Recreational use – upstream ephemeral portion only

The State asserts that SCR is the existing use in the upper portion and that intermittent flows and lack of canopy cover preclude PCR. The State does not assert a safety concern in the upper portion and EPA is not aware of any. Furthermore, EPA field staff familiar with the upper portion are aware that the upper portion is generally dry, with isolated pools occurring seasonally in wetter years. It is reasonable to presume that due to insufficient water, PCR is not an existing use in this segment.

EPA regulations at 40 CFR 131.10(g)(2) allow revision of a designated use based on natural, ephemeral, intermittent or low flow conditions or water levels that prevent the attainment of the use. The State explained that intermittent flow was a factor precluding PCR. Although there is a shallow reservoir (SW-3c) immediately upstream of this portion, the State has not indicated whether the operation of this reservoir could affect aquatic life uses that could be attained in this downstream water body and whether it is feasible to change the operation of the reservoir to attain the designated use. EPA field staff understand that discharges rarely occur from the reservoir and it may well be that no aspect of the

reservoir's operation (or its existence) would significantly change the intermittent or ephemeral nature of this water body. The State would need to confirm this before EPA could independently approve a use change for the upper portion.

However, due to the safety issues that affect the downstream, "New York Canal" portion of this water body explained in the previous section, EPA still approves the change in designated recreational use in this water body in its entirety.

Aquatic life – existing use

The limited available information suggest that COLD and SS are not existing uses in either segment due to intermittent or ephemeral flow. Because the UAA indicates that flow is present only intermittently and briefly during the year in the upstream ephemeral segment, and since EPA field office staff familiar with this water body over a period of greater than a decade concur with the characterization of this segment as highly ephemeral, it is reasonable to conclude that COLD and SS are not existing uses and that different use designations may be appropriate. With respect to the downstream segment, hydrologic data obtained by EPA staff confirm the characterization of the intermittent hydrologic regime presented in the UAA. According to a search for hydrologic data for New York Canal performed by EPA staff (see McGuire, 2004 – "Search for hydrologic data for lower Boise River tributaries," memorandum to the Record dated November 11, 2004), during the period October 1, 2002 through February 20, 2004, flow in New York Canal near Boise was 0 during the periods 10/8/02 – 2/2/03, 3/8/03 – 3/21/03, 10/9/03 – 1/5/04. Otherwise, flows during the non-irrigation season approached 500 cubic feet per second (cfs), and flows during the irrigation season approached 2,400 cfs at this station.

The MOD use designation may be an appropriate designation in both segments of this water body due to the highly ephemeral (upstream) or intermittent (downstream) hydrologic regime. EPA notes that the specific aquatic life community that the MOD designation is intended to protect in this water body² could, with some changes, potentially be shown to reflect the existing aquatic life community in the downstream, "New York Canal" portion of the water body. However, this aquatic life community likely does not reasonably reflect the aquatic life community in the upstream, ephemeral portion, which consists of "remnant pools of spring runoff" that persist during the summer, and the State provides no biological data to characterize aquatic life that may be present in these pools. In separate documentation (see McGuire, 2004, "Summary for Indian Creek C" and "Summary for Indian Creek D"), EPA has provided specific recommendations for additional physical, chemical, and biological data to help better characterize the existing aquatic life use in this water body.

² "transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...[and] that are present for a limited period of time (typically less than 2 months) only until they are fished out of the system or the irrigation season ends"

Aquatic life use – attainable use

COLD and SS are likely not existing uses in this water body, and EPA believes that with some additional information, the State would likely be able to demonstrate that they are not attainable uses. In the upstream, ephemeral portion of this water body, the State cites 40 CFR 131.10(g)(2) and (5), relating to natural factors, in justifying the removal of the designated aquatic life uses in the upper portion of this water body.

Factor 2 presumes natural intermittent or low flow conditions or water levels that prevent the attainment of the use, “unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met.” Although the State has not explained whether the presence of the shallow upstream reservoir (Indian Creek Reservoir, SW-3c) has any bearing on whether flow conditions in this portion can be considered “natural” and whether any aspect of the reservoir’s operation (or existence) would significantly affect the intermittent or ephemeral nature and attainable aquatic life uses in this portion, EPA believes that it is unlikely, due to limited flow. If the State can confirm this, then the use of factor 2 as a basis for removal of the COLD and SS aquatic life use designations from the ephemeral upstream segment would be appropriate.

With respect to the lower, “New York Canal” portion of this water body, the State cites 40 CFR 131.10(g)(2), (4), and (5) in support of removing the designated aquatic life use. Factors 2 and 5 seem inappropriate in this case. The State has indicated that this portion of the water body is highly modified and asserts that it is the “operation of the irrigation canal precludes the presence of year-round aquatic life” and “the modification of the facility as an irrigation ditch” – and not natural flow or natural physical characteristics of the water body – that have “resulted in lack of proper substrate, canopy cover, riparian zones, and presence of pools that would be required to support a viable CWB population and SS uses,” in this segment.

Factor 4, relating to hydrologic modification, seems to be most relevant to the “New York Canal” portion of this water body. Factor 4 sets forth that when dams, diversions, or other types of hydrologic modification preclude the attainment of the use, the State must demonstrate that “it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use.” The State has identified some of the water body characteristics it attributes to the hydrologically modified aspect of the water body, such as “lack of proper substrate, canopy cover, riparian zones, and presence of pools” that affect the aquatic life uses that are attained in this water body. EPA recognizes that the intermittent nature of the irrigation charge in this water body currently precludes COLD and SS aquatic life uses, and that it may well not be feasible to restore the water body or operate the water body to result in attainment of these uses (for example, due to specific aspects of water rights or other obligations that may govern flow volumes and timing). The State should simply explain in specific terms why attainment is not feasible.

4.2 (e) Summary/recommendation

The State may choose to take steps to provide additional information and resubmit a use attainability analysis for this water body. The following summary and recommendations are intended to help the State understand EPA's conclusions, as well as information and analytical needs that a revised UAA should address.

- COLD and SS are not likely to be existing or attainable uses in either the upstream ephemeral portion or the downstream "New York Canal" portion of this water body due to hydrologic regimes.
- The distinct hydrology and modifications of the two portions of this water body lend this water body to subdivision. Subdivision would allow aquatic life uses in these water bodies to be more accurately characterized and addressed in standards revisions.
- MOD may be determined to be an appropriate use designation (after attainable uses have been addressed; see fifth bullet) due to hydrologic characteristics of both the upper ephemeral portion and the lower "New York Canal" portion
- If the State chooses to subdivide the water body, the nature of the aquatic life community to be protected by the MOD designation, which the State presently defines as a "transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...[and] that is present for a limited period of time (typically less than 2 months) only until they are fished out of the system or the irrigation season ends," would need to be re-evaluated for its appropriateness to the highly ephemeral upstream water body; and criteria protective of this community would need to be developed consistent with the requirements surrounding the development of water quality criteria at 40 CFR 131.11.
- The aquatic life community ("transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...") that the State has identified for the proposed MOD use designation is applicable to the downstream, "New York Canal" portion of the water body to a limited extent. For example, it is not clear that the State's assumptions regarding the length of time fish are present in this water body ("typically less than two months") is applicable to perennial portions of these tributaries. Criteria developed based upon problematic assumptions may need reevaluation.
- The following steps should be taken in order to evaluate the attainable aquatic life uses in each of the two segments. With respect to the upstream, ephemeral portion, it may be relatively simple for the State to demonstrate that flow is "naturally" ephemeral by explaining that the existence of the upstream reservoir has no bearing on the hydrology of this segment (if true). With respect to the "New York Canal" portion of the water body, the State should explain in specific terms why it is not feasible to operate the water body in such a way as to attain the designated use. For example, if flow releases during the non-irrigation season are not consistent with water rights, the State should specifically explain how such releases would interfere with those water rights.
- EPA is concerned that in developing the dissolved oxygen value, the State has assumed that "acute lethality" is an appropriate protection goal for this use designation. Should the State choose to

address the issues identified in this section, EPA urges the State to discuss the MOD site-specific criteria with EPA.

4.3 Change in aquatic life use designations for SW-3c

Unit	Waters	Aquatic Life	Recreation	Other
SW-3c	Indian Creek Reservoir	WARM	PCR	

4.3 (a) Explanation of change in State standard:

SW-3c is the third segment into which the State has subdivided Indian Creek (SW-3). On this 128 ac reservoir, the State is removing the aquatic life use designation of COLD and SS that had previously applied to SW-3. The State is replacing the COLD and SS aquatic life use designation with the warm water biota (WARM) designation.

The COLD and SS aquatic life use designations and their supporting criteria are described under section 4.2(a) above. For reference, the WARM aquatic life use designation is defined as “water quality appropriate for the protection and maintenance of a viable aquatic life community for warm water species” (IDAPA 58.01.02.100.01.d). The water quality criteria for WARM are less stringent than those for COLD and SS. In addition to general surface water criteria specified at IDAPA 58.01.02.200, general criteria applicable to all aquatic life use designations specified at IDAPA 58.01.02.250.01, and numeric toxic criteria for aquatic life uses specified at IDAPA 58.01.02.210, waters designated for WARM must have DO concentrations greater than 5 mg/L (in lakes and reservoirs with a depth of 35 m or less, the bottom 20% of the water depth is exempt from this DO criterion, as are hypolimnetic waters of stratified lakes and reservoirs), and certain temperature- and pH-dependent ammonia criteria also apply. Water temperatures in waters designated for WARM must be [33 deg. C (with a maximum daily average [29 deg. C) and for reservoirs with mean detention times of greater than 15 days, temperature must not be measurably different from natural background conditions.

The State retains the designated recreational use of PCR that had previously applied to SW-3.

4.3 (b) Data and rationale submitted by State in support of change:

The State provides a photograph that the State says represents typical conditions and reflects adjacent land management practices for this water body. The State briefly characterizes hydrologic conditions and recreational use for this man-made reservoir. The State provides no information on reservoir depth or bathymetry except for a statement that the reservoir is a “shallow water body suitable for warm water fishes.” According to the State, flow is believed to originate from SW-3d (the upstream, headwater reach

of Indian Creek) during periods of excessive spring runoff and from unnamed streams that flow into the reservoir from the north; otherwise, the reservoir is asserted to be hydrologically unconnected to either the headwaters or to the next downstream portion of Indian Creek (SW-3b). The State indicates that no water quality or biological data are available for this water body. The State indicates that the Idaho Department of Fish and Game (IDFG) routinely stocks bluegill and large-mouth bass and that the fishery is self-sustaining.

The State asserts that as a result of the creation of the reservoir and the hydrologic disconnection between the reservoir and upstream and downstream waters, the water body is suitable for, and managed by the State fish and game agency, as a warm water fishery. The State also asserts that COLD is not an attainable aquatic life use but does not specifically cite a 40 CFR 131.10(g) factor in support of removing the designated use and does not provide supporting analysis for this assertion.

4.3 (c) EPA action:

EPA disapproves removing the COLD and SS designated aquatic life uses and designating an aquatic life use of WARM in this water body.

4.3 (d) Basis for EPA action:

Aquatic life – existing use

Information submitted in the UAA, together with supplementary information obtained by EPA staff, and best professional judgment of EPA staff reviewing the UAAs, support that the existing aquatic life uses in this water body are likely not COLD and SS. Although salmonids do spawn in some lakes and reservoirs in Idaho, substrate and water quality conditions in reservoirs such as Indian Creek are unlikely to support salmonid spawning, according to EPA staff familiar with these water bodies (L. Woodruff, Idaho Operations Office, personal communication, 11/12/04). The UAA indicates that the IDFG “routinely” stocks the reservoir with warm water fish (bluegill and largemouth bass). Given this information, the COLD aquatic life use designation does not appear likely to best characterize the existing use in this water body.

EPA notes that while the available information indicates that COLD and SS are not likely to be existing uses, it is not clear what aquatic life use does exist in this water body. Although the State asserts that the water body is “routinely” stocked with bluegill and largemouth bass, historical stocking records for this reservoir, obtained by EPA staff include a variety of fish species, including not only bluegill and largemouth bass but also cold water species (e.g., rainbow and cutthroat trout; see http://fishandgame.idaho.gov/fish/stocking/fish_data.cfm; accessed 10/29/04). Moreover, the IDFG characterizes the aquatic life community in this water body as follows: “[r]ainbow trout, largemouth bass, crappie, bluegill, bullheads, and channel catfish all contribute to the diverse, year-round fishery [in

Indian Creek Reservoir]...Some large trout and bass can be caught in this small reservoir” (<http://fishandgame.idaho.gov/fish/anglerguides/urban.crm>, accessed 10/29/04). In the absence of any physical, chemical, or biological sampling data from this water body, it is not clear from all the stocking information available that the WARM aquatic life use designation (“water quality appropriate for the protection and maintenance of a viable aquatic life community for warm water species”) best describes the existing use of this water body, or whether a different use designation might better reflect the existing aquatic life community in this water body.

Aquatic life – attainable use

The State does not identify a 40 CFR 131.10(g) factor justifying removal of the designated uses. The State’s discussion implies that hydrologic modification (Factor 4, “Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use”) is the relevant basis for removing the designated use for this segment. The use of Factor 4 requires a demonstration that it is not feasible to restore the water body to its original condition or to operate the reservoir in a way that would result in the attainment of cold water biota and salmonid spawning. EPA recognizes that it may well not be feasible to restore the water body or change the way in which the reservoir is operated in a way that would result in the attainment of the designated uses. However, the State should more thoroughly explain why 40 CFR 131.10(g)(4) (or a different 30 CFR 131.10(g) factor) is applicable in this case.

It is important to note that even if the State can readily demonstrate that COLD and SS are not attainable aquatic life uses, as EPA anticipates, it will be important to clarify what the attainable aquatic life uses in this water body are. As noted above, the State asserts that the water body is “suitable for warm water fishes,” but provides no physical or chemical observations to support this statement. Reservoir stocking and other information cited earlier suggests the possibility that the actual existing aquatic life use and fishery management objectives in this water body are not WARM, and that a different designation should be considered, ideally in consultation with the State fish and game agency.

4.3 (e) Summary/recommendation

The State may choose to take steps to provide additional information and resubmit a use attainability analysis for this water body. The following summary and recommendations are intended to help the State understand EPA’s conclusions, as well as information and analytical needs that a revised UAA should address.

- COLD and SS are not likely to be existing uses due to reservoir characteristics.
- The State should explain why the designated uses are not attainable. This would entail a specific, discussion of why it is not feasible to restore the water body or change the way in which the reservoir

is operated in a way that would result in the attainment of the designated uses.

- Given the stocking history of this water body which includes both cold and warm water fish, the State should provide further evidence that the proposed use designation of WARM is the appropriate use designation for this water body. EPA believes that consultation with IDFG would be important to clarify the fishery management objectives and appropriate aquatic life use designations for this water body.

4.4 Change in designated aquatic life and recreational uses for SW-3d

Unit	Waters	Aquatic Life	Recreation	Other
SW-3d	Indian Creek - source to <u>Sugar Ave. (T03N, R02W, Sec 15) Indian Creek Reservoir</u>	COLD SS SC	PCR SCR	

4.4 (a) Explanation of change in State’s standard:

This 14.2 mile reach is the upstream-most of the 4 segments into which the State has subdivided Indian Creek (SW-3). The State is removing the PCR recreational use designation that previously applied to SW-3 and replaced it with SCR. See section 4.1(a) for a definition of these use designations and the associated criteria.

In addition, the State is removing the COLD and SS aquatic life use designations that previously applied to SW-3 and has assigned the seasonal cold water biota (SC) aquatic life use designation to this water body. See section 4.2(a) and Table A-1 for a description of the COLD and SS use designations and criteria. Idaho defines the SC aquatic life use designation as “water quality appropriate for the protection and maintenance of a viable aquatic life community of cool and cold water species, where cold water aquatic life may be absent during, or tolerant of, seasonally warm temperatures.” In addition to general surface water criteria specified at IDAPA 58.01.02.200, general criteria applicable to all aquatic life use designations specified at IDAPA 58.01.02.250.01, and numeric toxic criteria for aquatic life uses specified at IDAPA 58.01.02.210, the criteria applicable to the SC designation are as follows: during the autumn, winter, and spring (autumn equinox to summer solstice), COLD criteria apply. During the summer (summer solstice to autumn equinox), DO must be greater than or equal to 6 mg/L, water temperature must be less than or equal to 26 deg. C as a daily maximum, with a daily average of less than or equal to 23 deg. C, and ammonia criteria are equal to the COLD ammonia criteria. During the summer, no turbidity criteria apply. Overall, these criteria are less stringent than those for COLD. Note: the State submitted the SC use designation and criteria to EPA prior to submitting the use designation changes discussed in this document; however, EPA has not yet taken action on the SC designation or criteria.

4.4 (b) Data and rationale submitted by State in support of change:

The State provides two photographs that the State says represent typical conditions and reflect adjacent land management practices for this water body. The State describes this headwater reach as an ephemeral water body with depth to groundwater of over 100 feet that exists only as a “patchwork” of areas with flows only as a result of spring snowmelt. The State presents a flow observation from three dates (5/00, 6/00, 6/97) from different locations on this reach; only one of these observations (6/97) was non-zero. The State notes that this segment may be hydraulically connected to Indian Creek Reservoir (SW-3c), which is the next downstream portion of Indian Creek, only during limited periods of high spring runoff. The State briefly describes channel morphology and substrate and provides a brief qualitative overview of physical habitat conditions (e.g., riparian vegetation, occurrence of grazing along the water body, aquatic habitat, few deep pools). The State presents one quantitative assessment of habitat quality (with the value indicating impaired status). Two water temperature observations (15 and 15.4 deg. C taken in 6/97 and 6/00) are presented and the State indicates that no other water quality data have been collected for the reach. Results of a single macroinvertebrate survey at one location on this reach are presented; according to the State’s summary (the underlying results are not provided), none of the taxa collected represent cold water temperature preference species and overall score indicates impaired status. The State indicates that no fish were observed at three locations due to lack of or low flow. No data pertaining to recreational use in this reach is presented.

The State asserts that SCR is the current existing use in this reach during the limited times that excess spring runoff is present and that, due to intermittent flow and lack of canopy cover, the reach is unsuitable for PCR. The State asserts that any aquatic life use in this water body “would likely migrate upstream from the warm-water reservoir” and asserts that the SC aquatic life use designation better reflects conditions during the limited times when the channel carries water. The State does not cite a 40 CFR 131.10(g) factor in support of removing the designated recreational or aquatic life uses in this water body.

4.4 (c) EPA action:

EPA approves changing the designated recreational use in this water body from PCR to SCR.

EPA disapproves removing the COLD and SS aquatic life use designations and replacing them with the SC aquatic life use designation in this water body.

4.4 (d) Basis for EPA action:

Recreation – existing use

The available information indicates that lack of water at most times in this segment would preclude PCR. While the State provides no observations of recreational activity in this water body, limited flow

observations presented by the State, as well as familiarity of EPA Idaho Operations Office staff with this water body (L. Woodruff, personal communication, 11/12/04) indicate largely dry conditions except during brief spring periods in some years.

Recreation – attainable use

The State has not identified a 40 CFR 131.10(g) factor to support removing the designated use, but the State's argument is consistent with 40 CFR 131.10(g)(2). Since lack of flow may preclude PCR³, and since there are no upstream sources of water to be controlled, it is reasonable to conclude that PCR is not an attainable use.

Aquatic life – existing use

Based on the information submitted by the State as well as best professional judgement by EPA staff, it is reasonable to conclude that COLD and SS are not existing uses in this water body. These are likely not an existing use in this water body based on factors including the ephemeral nature of the segment and physical barriers (e.g., the presence, since prior to November 28, 1975, of the downstream reservoir and dam).

The available biological information upon which to base a characterization of the existing aquatic life community in this ephemeral water body consists of one macroinvertebrate sample from 1997. In its UAA, the State very briefly summarized the results of this survey. In a separate document obtained by EPA (IDEQ, 2001), more detailed information regarding these samples was provided, including number of organisms by taxa, and an analysis of the relationship between environmental factors and sample results. Although that analysis focused on sediment as a possible source of impairment to the sampled community, the analysis identified ephemeral flow as the factor limiting the establishment of a robust macroinvertebrate community. The State does not explain, either in the UAA or in IDEQ (2001) why this sample should be considered representative for the 14 mile reach. The State provides some information on physical conditions in this ephemeral water body but water quality information is limited to two observations of cold water conditions in June 1997 and June 2000.

Aquatic life – attainable use

The State does not identify a 40 CFR 131.10(g) factor which justifies removal of the designated use from this water body. However, as noted in the discussion of attainable recreational uses above, it appears that the State's arguments are consistent with Factor 2 ("Natural, ephemeral, intermittent or low flow

³ "Recreation in and on the water...may not be attainable in certain waters, such as wetlands, that do not have sufficient water, at least seasonally. However, States are encouraged to recognize and protect recreational uses that do not directly involve contact with water, including hiking, camping, and bird watching." (p. 2-2, Water Quality Standards Handbook)

conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met”). Because there are no upstream sources of discharge to this headwater reach, the ephemeral flow condition can not be “compensated for” (see 40 CFR 131.10(g)(2)) and it seems reasonable to presume that the designated uses are not attainable.

As noted above, there is limited characterization of the existing aquatic life use in this ephemeral water body. As a result, although the COLD and SS use designations are not appropriate, it is not clear what aquatic life use is attainable and should be designated, and what criteria to protect this designation would be suitable. Therefore, it is difficult to judge whether the proposed SC designation, and the proposed criteria to protect the SC use, would protect the aquatic life use in this water body. EPA notes that the MOD use designation may be appropriate in this case because the water body is naturally ephemeral. As stated in section 4.2(a) above, the State has defined the MOD aquatic life use designation as “water quality appropriate for an aquatic life 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.” The 40 CFR 131.10(g) conditions include natural ephemeral or intermittent flow conditions, and physical conditions related to the natural features of the water body.

If the State chooses to use the MOD use designation, it should appropriately define the site-specific aquatic life community to be protected, and develop site-specific criteria to protect the aquatic life community based on sound scientific rationale.

4.4 (e) Summary/recommendation

The State may choose to take steps to provide additional information and resubmit a use attainability analysis for this water body. The following summary and recommendations are intended to help the State understand EPA’s conclusions, as well as information and analytical needs that a revised UAA should address.

- COLD and SS are not likely to be existing or attainable uses in this ephemeral headwater reach due to the hydrologic regime.
- It is inconclusive as to whether SC is the appropriate use designation.
- It may be that on flow and physical grounds, the MOD aquatic life use designation could be shown to be the appropriate aquatic life use designation for this water body.
- If the MOD designation is used, it will be important for the State to better characterize the existing aquatic life community in this water body. EPA’s review of the State’s proposed new designation, and the criteria the State proposes to protect the new designation, will require information on the organisms and community to be protected. Should the State wish to pursue the use designation change for this reach, EPA will work with the State to identify a sampling scheme to adequately

characterize the aquatic life communities in this ephemeral water body. EPA notes that determining the water quality characteristics that would be protective of aquatic life communities in intermittent ephemeral water bodies is a nascent field of scientific knowledge. Nevertheless, it is important that criteria that are protective of the actual aquatic life in this water resource be adopted (see discussion in ANPRM; 63 FR 36752, July 7, 1998).

4.5 Change in designated aquatic life and recreational use for SW-6

Unit	Waters	Aquatic Life	Recreation	Other
SW-6	Mason Creek - source New York Canal to mouth	<u>MOD</u>	<u>SCR</u>	

4.5 (a) Explanation of change in State’s standard:

Mason Creek (SW-6) is a 33.5 mile water body which was undesignated in Idaho regulations. According to State regulations, it is presumed that most waters in the State will support cold water aquatic life and primary or secondary contact recreation and therefore the criteria associated with COLD and PCR or SCR are presumed to apply to undesignated waters⁴. With the above change, the State explicitly designates the recreational use as SCR. Please see section 4.1(a) for a definition of the SCR designated use and criteria.

Also, the State explicitly designates the aquatic life use in this water body as MOD. For this specific water body, the State has defined the aquatic life community represented by the MOD designation as “a transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...[and] that are present for a limited period of time (typically less than 2 months) only until they are fished out of the system or the irrigation season ends” (CH2MHill, 2001, p. 24). The State asserts that fish that are not caught during a few-month period during the irrigation season die naturally at the end of the irrigation season when flows decrease dramatically or disappear. In addition to general surface water criteria specified at IDAPA 58.01.02.200, general criteria applicable to all aquatic life use designations at IDAPA 58.01.02.250.01, and numeric toxic criteria for aquatic life uses specified at IDAPA 58.01.02.210, the State proposes site-specific criteria for the MOD aquatic life use designation for this water body which are the same as those proposed for SW-3b (see section 4.2(a) above as well as section 4.11 below). These criteria are less stringent than the COLD criteria.

⁴ “Because the Department presumes most waters in the state will support cold water aquatic life and primary or secondary contact recreation beneficial uses, the Department will apply cold water aquatic life and primary or secondary contact recreation criteria to undesignated waters unless Sections 101.01.b and 101.01.c. are followed.” (IDAPA 58.01.02, 101.01.a). Sections 101.01.b and 101.01.c relate to beneficial use evaluation and use designation in the context of reviewing new or existing activities on undesignated waters.

4.5 (b) Data and rationale submitted by State in support of change:

The State describes the upper 18 mile portion (“Mason Creek Feeder”) as a “man-made conveyance” that transports irrigation flow from the New York Canal to the Ridenbaugh Canal⁵. According to the State, physical habitat in this portion is “poor because the historic swale has been straightened and deepened...and livestock access to the canal is not restricted at all locations.” The State indicates that irrigation-season streamflow in this upper portion averages 108 cfs and flows during the non-irrigation season “essentially dry up.” Water quality data from two monitoring stations from 1979 and 2000 presented by the State include a single DO observation of 9.0 mg/L from 1979 and generally indicate water quality suitable for COLD and PCR. Neither macroinvertebrate nor fish data are provided for this upper portion.

The State characterizes the lower 15 mile of this water body as a perennial water body that is fed by groundwater recharge. A range of flows is provided but no greater level of hydrologic detail (e.g., average monthly flows throughout the year is provided). The State provides four photographs that the State says represent typical conditions and reflect adjacent land management practices for this water body. The State summarizes water quality data in this portion from 15 stations operated by 4 different entities. These data indicate temperature and dissolved oxygen largely within the COLD range. A high pathogen indicator value is also reported. The State indicates that two habitat observations are available (one of these is a quantitative habitat evaluation), both indicating impaired habitat. A single macroinvertebrate sample was collected in August 1997. The State indicates that minnows were observed at one location on this water body but that no formal fish survey results are available. The State indicated that rainbow trout and reidside shiners are among the fish species that have been observed in other drains in the area as a result of being diverted from the Boise River, and could potentially similarly occur in this water body. The State cites a 2000 personal communication and a 1997 letter in support of an assertion that IDFG does not have management goals for this water body. The State does not indicate if any flow or fish passage barriers exist within this water body or between this water body and the Boise River into which it flows.

The State describes SCR as the existing use in this water body and notes that the irrigation district which operates and maintains this water body does not condone or encourage the use of this water body for swimming or fishing by trespassers. The State presents no observations relating to recreational use in this water body.

The State asserts that the existing aquatic life use is a modified aquatic life community consisting of a transient adult stocked fish population that is diverted from the Boise River. The State cites 40 CFR

⁵ All of the flow in the Feeder is diverted into the Ridenbaugh Canal, which ultimately flows into Lake Lowell, which is designated for warm water biota. The New York Canal originates in the Boise River with a designated aquatic life use of COLD.

131.10(g) factors 2, 4, and 5 (for the upper, “Feeder” portion of this water body) and 131.10(g)(4) and (5) (for the lower, perennial portion of this water body) in support of removing the designated aquatic life uses on this water body. The State provides a generic statement asserting that “transforming” these tributaries into water bodies suitable for COLD is “not feasible” because of the length of these and similar water bodies, the current and foreseeable irrigation management activities, the scope of the project that would be required, and the multiple stakeholders involved. However, the State provides no further discussion or analyses in support of these assertions for any specific water body.

4.5 (c) EPA action:

EPA approves removing the “undesigned” status of this water body with respect to recreational use and designating this water body as SCR.

EPA disapproves removing the “undesigned” status of this water body with respect to aquatic life use and replacing this with MOD as the designated aquatic life use.

4.5 (d) Basis for EPA action:

Recreational use

The State asserts that SCR is the existing use in this water body, but does not specify the frequency or nature of recreational uses in this specific water body, especially swimming. EPA is aware that the State has said elsewhere that “many portions of Mason Creek are used for swimming and wading,”⁶ while recognizing that such activities may be unsafe due to high flow velocities, entrenched channels, and steep and heavily vegetated banks. Thus, although it is not clear that the existing use in this water body is SCR, the State has clearly indicated that there are safety concerns with respect to contact recreation in this water body. As discussed in more detail in section 4.1(d), the State has elsewhere documented drowning fatalities in the lower Boise Valley which have occurred in irrigation waterways, as well as public education and outreach efforts regarding safety hazards of swimming in such waterways (see Appendix 8 of Ringert and Clark, 2001). Since there is a safety concern with PCR in this water body, and since Idaho regulations establish that the bacteriological criterion used for compliance purposes is the same for both PCR and SCR, given the policy option explained in section 4.1(d) above, designating SCR in this case is reasonable.

⁶ “During the summer, many portions of Mason Creek are used for swimming and wading. However, the managing irrigation districts discourage contact recreation due to the dangers of high flow velocities and entrenched channels. Below the Ridenbaugh Canal, where the depths and flow are ample to support contact recreation, the banks are steep and heavily vegetated” (p. 11, 2001 SBA).

Aquatic life – existing use

The available information suggests that COLD is unlikely to be an existing use in the upper, “Feeder” portion of this water body due to intermittent flow (high irrigation season flow, zero non-irrigation season flow), in addition to physical factors and physical separation of this water body from the downstream reach (the Ridenbaugh Canal is a barrier between the upstream “Feeder” and downstream perennial portions). While COLD is unlikely to be an existing use, EPA notes that the UAA submitted by the State included no biological information, and limited physical and water quality information, upon which to characterize the existing aquatic life community that does exist in this upper, “Feeder” portion of the water body.

The MOD use designation may be an appropriate designation in the upper, “Feeder” portion of this water body due to the intermittent flow regime and other characteristics of the water body discussed above⁷. The State has defined the aquatic life community represented by the MOD use designation as a “transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...[and] that are present for a limited period of time (typically less than 2 months) only until they are fished out of the system or the irrigation season ends”). With additional sampling, the State may be able to demonstrate that this aquatic life community appropriately reflects the existing use in this water body, although the State’s assumption regarding the length of time that fish may be present in such water bodies is not consistent with the length of time flow is present in the “Feeder” portion of this water body. EPA has provided specific recommendations as to sampling and analysis to adequately characterize the existing use in this water body (see McGuire, 2004, “Summary for Mason Creek A”).

In the lower perennial portion, it is inconclusive that COLD is not an existing use. The State provides one macroinvertebrate (MI) sample from August, 1997 for the lower segment. Although the State notes that the MI assemblage from this sample is not indicative of a high-quality stream, this result would be expected since this water body represents a system that experiences high disturbance from human activity. In recent fish sampling conducted after the State submitted its revised water quality standards to EPA⁸, salmonids have not been captured. However, EPA notes that these sampling efforts were limited in scope (number of sites, time of shocking), gear type, and time of year (August and October). The State recognizes that cold water fish have historically been observed in various irrigation canals. The State has elsewhere stated that “adult” rainbow trout may be flushed into the water body during the irrigation

⁷ As noted earlier, the State has defined the MOD aquatic life use designation as “water quality appropriate for an aquatic life 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.” The 40 CFR 131.10(g) conditions include natural ephemeral or intermittent flow conditions, physical conditions related to the natural features of the water body, and hydromodification.

⁸ Fax from Bryan Horsburgh, IDEQ, to Mark Filippini, EPA, 9/6/02; and fax from Bryan Horsburgh, IDEQ, to Mark Filippini, 10/17/03.

charge in the spring and reside in the water body during the irrigation season⁹. EPA notes that the State does not explain why juvenile fish would not also be flushed into the system, and why fish would not reside in the perennial portions of the water body year-round. The State does not identify any flow or fish passage barriers between this water body and the Boise River, to which it drains.

In addition, IDFG, in comments on the State's proposed change in use designations for this water body, recommended:

“...that currently undesignated streams in the Lower Boise subbasin be [designated for COLD and at least SCR]. We understand that segments not currently designated automatically default to protection for COLD but we prefer to see the designation specified to eliminate confusion...It is our opinion that streams listed in the past, do now, or are capable of supporting those uses in the future, thus we are consistent with the intent of the WQS to support potential beneficial uses as well as current ones.”

Furthermore, although the State asserts that physical habitat conditions preclude the existence of a viable cold water biota population in the lower portion, the State does not describe physical habitat in sufficient detail to determine if the single quantitative habitat evaluation indicating impaired physical habitat, or the limited additional qualitative observations also indicating impaired conditions, are representative of the entire water body and are severe enough to preclude the designated use. In summary, the available information is not conclusive as to whether or not COLD is an existing use in the lower, perennial portion of this water body. EPA provides specific recommendations as to additional physical, chemical, and biological characterization and sampling that could aid in better characterizing the existing aquatic life use in this water body. See McGuire, 2004, “Summary for Mason Creek A” and “Summary for Mason Creek B”.

Aquatic life – attainable use

The State cites 40 CFR 131.10(g) factors 2, 4, and 5 in support of removing the designated use in the upper, “Feeder” portion of this water body. However, because the State describes this portion as a “man-made waterway,” it is not clear that factors 2 and 5, which pertain to natural flow conditions or features of the water body, are applicable to this portion. With respect to factor 4, the UAA specifically identifies the

⁹ “While salmonid spawning does not occur in Mason Creek, there is evidence that a transient population of adult rainbow trout exists in the stream during the irrigation season. The Idaho Fish and Game reported that adult rainbow trout were present in Mason Creek before 1975 (IDFG, personal communication with D. Allan, 2000), although they do not manage the stream as an active fishery. In adjacent tributaries, such as Indian Creek, that have similar hydrologic regimes from an irrigation standpoint, IDFG and DEQ have documented the presence of adult rainbow trout. The fish are likely flushed into the streams during the irrigation charge in April and reside in the streams until anglers catch them or they move back into the Boise River. Anecdotal evidence from landowners within the Mason Creek subwatershed indicates that adult rainbow trout are present in the stream during the fishing season, which corresponds with the irrigation season” (p. 24, SBA, 2001).

“operation of the irrigation canal” as a factor precluding presence of year-round aquatic life and states that “the construction of the facility as an irrigation ditch has resulted in lack of proper substrate, canopy cover, riparian zones, and presence of pools that would be required to support a viable [cold water biota] population.” The use of factor 4 as a basis for removing a use requires a demonstration that “it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use.” EPA recognizes that it may well be infeasible to restore the water body to its original condition or to operate it in a way that will result in attaining the use. The State should simply explain more specifically why this is the case. For example, if releasing water during the non-irrigation season to maintain flow in this water body is inconsistent with water rights, the State should explain specifically why this is the case.

EPA notes that MOD may be an appropriate aquatic life use designation to replace COLD in the upper, “Feeder” portion of this water body. Moreover, with additional sampling, the aquatic life use that is currently being attained in this water body (see previous discussion under “Aquatic life – existing use”) could be shown to correspond reasonably with the aquatic life community the State has defined as the MOD community to be protected, although EPA reiterates its concern with the State’s assumption of the length of time that flow and aquatic life may be present in this portion. If appropriate site-specific criteria were developed for the MOD use designation (see section 4.11(e)), EPA could approve the MOD designation for this water body.

With respect to the lower, perennial portion, the State cites 40 CFR 131.10(g)(4) and (5) in support of removing the designated aquatic life use. It is not clear that factor 5, which addresses physical conditions related to the natural features of the water body, is appropriate because the State points to hydrologic modifications, and not natural features of the water body, as factors that preclude attainment of the designated use. With respect to factor 4, the State asserts that “the operation of numerous irrigation canals and drains represent hydrologic modifications that limit the viability of [COLD] communities. In addition, the construction of the facility as an irrigation ditch has resulted in lack of proper substrate, canopy cover, riparian zones, and presence of pools that would be required to support a viable [COLD] population.”

As noted earlier in this document, the use of factor 4 requires a demonstration that it is not feasible to restore the water body or to operate it in such a way that results in the attainment of the use. The State has appropriately identified factors that limit the aquatic life uses in this water body. However, the State does not then also identify potential measures that could address these factors and potentially restore the area to its biological or recreational potential (e.g., BMPs, direct habitat restoration, alternative flow or maintenance procedures, or any other measures that are consistent with the irrigation districts’ water rights), or assess the impacts of applying some combination of these measures, and of the levels of beneficial uses that could be supported if these measures were implemented. See specific recommendations under section 4.5(e) regarding evaluation of attainability for this water body.

4.5 (e) Summary/recommendation

The State may choose to take steps to provide additional information and resubmit a use attainability analysis for this water body. The following summary and recommendations are intended to help the State understand EPA's conclusions, as well as information and analytical needs that a revised UAA should address.

- COLD is likely not an existing or attainable use in the upstream, "Feeder" portion of this water body due to intermittent hydrologic regime. It is inconclusive as to whether COLD is or is not an existing use in the lower, perennial portion.
- The distinct hydrology and modifications of the two portions of this water body lend this water body to subdivision (e.g., into an upper, "Feeder" and lower, perennial portion). Subdivision would allow aquatic life uses in these water bodies to be more accurately characterized and addressed in standards revisions.
- The MOD use designation may be a more appropriate designation for the upstream, "Feeder" portion due to its intermittent and highly modified nature (although the questions of attainability and protectiveness of criteria would still need to be evaluated).
- The aquatic life community ("transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...") that the State has identified for the proposed MOD use designation is applicable to the "Feeder" portion of the water body only to some extent. For example, it is not clear that the State's assumptions regarding the length of time fish are present in this water body ("typically less than two months") is applicable to perennial portions of these tributaries.
- With respect to the perennial portion of the water body, the State has not demonstrated that the presumed COLD aquatic life use in this water body is not an attainable use.
- Should the State wish to evaluate whether COLD is an attainable use in this water body, the State should consider the following steps:
 - identify potential measures to address factors that affect the aquatic life uses that are attained. Toward this end, the State could begin by examining relevant technical literature. For example, the State should consider the level of water quality which could be achieved by the use of applicable BMPs identified in the Idaho Agricultural Pollution Abatement Plan (<http://www.scc.state.id.us/PDF/AgPlan.pdf>) which identifies BMPs that have been selected and approved by the State because of their technical feasibility, economic feasibility, and acceptability to land owners. Details (component practices) of each approved BMP are found in the NRCS Field Office Technical Guide, which is specific for each county in each state. These are available electronically at <http://www.nrcs.usda.gov/technical/efotg/>. Second, published technical literature and other sources of available information should be consulted. Initial results of a cursory keyword search of published literature by EPA staff suggest that some work in this area has been done. For example, Mueller and Liston (1994) describe placement of low-profile reefs to enhance aquatic communities in concrete-lined canals. Shields (1983) synthesized available information about the use of simple structures in modified (e.g., enlarged, straightened,

relocated, or stabilized) stream channels to mitigate degradation of ecological resources. Edwards et al. (1984) describe mitigating effects of artificial riffles and pools on fauna in a channelized stream. Carline and Klosiewski (1985) describe responses of fish populations to mitigation structures in small channelized streams. Additional simple literature searches and discussions with entities that have prior experience in habitat enhancement in modified streams could reveal technical literature providing further information on BMPs potentially applicable to this water body. An attainability analysis should consider potential measures such as these and assess their potential impacts on the aquatic life uses that may be attained.

- from the potential measures that are identified, the State should then assess the impacts of applying some combination of these measures, and the levels of beneficial uses that could be supported if these measures were implemented

4.6 Change in designated recreational and aquatic life use for SW-7

Unit	Waters	Aquatic Life	Recreation	Other
SW-7	Fifteenmile Creek - Miller Canal to mouth	<i>MOD</i>	<i>SCR</i>	

4.6 (a) Explanation of change in State’s standard:

Fifteenmile Creek is a 3.5 mile water body that is formed from the confluence of Tenmile (SW-8) and Fivemile (SW-10) Creeks and was previously undesignated in Idaho regulations. As explained earlier, according to State regulations, it is presumed that most waters in the State will support cold water aquatic life and primary or secondary contact recreation and therefore the criteria associated with COLD and PCR or SCR are presumed to apply to undesignated waters (IDAPA 58.01.02.101; see section 4.5(a) above). With the above change, the State explicitly designates the SCR recreational use. Please see section 4.1(a) above for a definition of the PCR and SCR designated uses and criteria.

Also, the State explicitly designates the aquatic life use in this water body as MOD. For this specific water body, the State has defined the aquatic life community represented by the MOD designation as “a transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...[and] that are present for a limited period of time (typically less than 2 months) only until they are fished out of the system or the irrigation season ends” (CH2MHill, 2001, p. 24). The State asserts that fish that are not caught during a few-month period during the irrigation season from these “modified” systems die naturally at the end of the irrigation season when flows decrease dramatically or disappear.

In addition to the general surface water criteria applicable to all waters specified at IDAPA 58.01.02.200, general criteria applicable to all aquatic life use designations specified at IDAPA 58.01.02.250.01, and the

numeric toxic criteria applicable to all aquatic life uses specified at IDAPA 58.01.02.210, the State proposes site-specific criteria to protect the MOD aquatic life use for this water body. These proposed site-specific criteria are: DO μ 6 mg/L, maximum daily temperature [26 deg. C (daily average temperature [23 deg. C), and ammonia criteria equal to the COLD ammonia criteria. Overall, these criteria are less stringent than those for COLD. Please see section 4.12 below.

4.6 (b) Data and rationale submitted by State in support of change:

The State provides several photographs of this water body. The State indicates that flow in this reach is a result of precipitation and drainage from the two upstream water bodies, but provides no quantitative flow values for this segment. The State identifies systemwide operation and maintenance issues and practices (e.g., access rights, ditch maintenance, vegetation management, equipment characteristics), but does not further describe maintenance activities actually performed on this water body, nor any information on specific consequences of such activities on this water body's physical features and aquatic habitat. The length of the water body is not provided, nor is any description or mention of any physical flow barriers that may exist within this water body, or between this water body and upstream (Fivemile and Tenmile Creeks) and downstream (Boise River) water bodies. Summary dissolved oxygen and temperature values, largely indicating water quality suitable for COLD, are provided. No macroinvertebrate or fish sampling data are provided, although the State asserts that no fish have been observed in this water body and that IDFG has no management goals for this water body.

No specific observations with respect to recreational use are provided in the UAA for this water body, although a range of pathogen indicator values, with a upper end in excess of recreational use criteria, is presented. The State indicates that recreational use conflicts with drainage and irrigation purposes of the drains and the rights of the irrigation Districts which operate and maintain these drains, is not authorized, and is contrary to public safety. The State also provides a series of newspaper articles describing of accidents and drownings in Idaho irrigation ditches that have occurred during the past two decades as well as education and outreach efforts by the Districts and other organizations relative to the hazards of recreation in irrigation waterways.

The State asserts that there is no evidence to indicate that COLD is an existing use in this water body. The State also asserts that operation and maintenance activities performed by irrigation Districts are necessary to fulfill their obligation to drain and convey water within the Districts, that these activities "cannot be limited as a result of inappropriate use designations" and that these activities preclude physical conditions that could support COLD. The State does not cite a 40 CFR 131.10(g) factor in support of removing the designated use and provides no supporting analysis to demonstrate that COLD is not an attainable aquatic life use designation.

4.6 (c) EPA action:

EPA approves removing the “undesigned” status of this water body with respect to recreational use and designating this water body as SCR.

EPA disapproves removing the “undesigned” status of this water body with respect to aquatic life use and replacing it with the MOD aquatic life use designation.

4.6 (d) Basis for EPA action:

Recreation

The UAA does not indicate whether PCR or SCR, which are the presumed recreational uses in this water body, actually exist in this water body. However, the UAA provides a series of newspaper articles describing accidents and drownings in Idaho irrigation ditches that have occurred during the past two decades. These articles also describe education and outreach efforts by the Districts and other organizations relative to the hazards of recreation in irrigation waterways (see Appendix 8 of Ringert and Clark, 2001). Since there is a safety concern with PCR in this water body, and since Idaho regulations establish that the bacteriological criterion used for compliance purposes is the same for both PCR and SCR, given the policy option explained in section 4.1(d) above, designating SCR in this case is reasonable.

Aquatic life – existing use

It is inconclusive that COLD is not existing use in this perennial water body. To characterize the water body, the State’s UAA provides limited physical habitat information, no biological information, and limited water quality information (largely indicating water quality suitable for cold water biota). EPA is aware that recent, limited sampling in upstream reaches conducted after the State submitted its use designation changes to EPA found no salmonids (letter from B. Horsburgh and M. Bridges to M. Filippini, 8/22/02) and additional subsequent sampling found only cool-water species (e-mail and fax of 10/03 from B. Horsburgh to M. Filippini). However, other information indicates that cold water biota have previously been found in this water body. A 1997 letter from the IDFG to IDEQ states that “[b]ased on file information from electrofishing samples and fish kill assessments, we know wild rainbow trout were present prior to November 28, 1975 in Indian Creek above and below Sugar Avenue, Seven Mile Creek, Fivemile Creek at Meridian, Tenmile Creek below confluence with Fivemile Creek, and Conway Gulch at Notus (Gibson 1975; unpublished IDFG file information.)” Note that the site described as “Tenmile Creek below confluence with Fivemile Creek” would be located on this water body. Although the information discussed by the IDFG pertains to aquatic life use in the water body prior to November 28, 1975, EPA is not aware of any discussion as to why this use may no longer exist in this water body.

In the absence of sufficiently detailed physical habitat information showing conditions that preclude COLD, and considering that the only water quality data provided indicate water quality suitable for

COLD and that the biological information is inconclusive, it is inconclusive that COLD is not an existing use in this water body. EPA has provided specific recommendations as to physical, chemical, and biological data collection that the State could undertake to more adequately characterize the current aquatic life use in this water body (see McGuire, 2004, "Summary for Fivemile Creek C").

Aquatic life – attainable use

The State has not demonstrated that COLD is not an attainable use in this segment. The State does not identify a 40 CFR 131.10(g) factor that would justify removing the designated use from this segment. However, the UAA explains that operation and maintenance activities, including dredging and cleaning, required to maintain the drainage and conveyance purposes of these drains, remove the habitat necessary to support COLD. The UAA also explains that operation and maintenance activities, and the Districts' rights to the water in these waterways, can not be restricted. This would suggest that 40 CFR 131.10(g)(3) and (4) could be evaluated as a basis for demonstrating that the designated use is not attainable. The use of 40 CFR 131.10(g)(3) requires a demonstration that the human-caused conditions "cannot be remedied or would cause more environmental damage to correct than to leave in place." The use of 40 CFR 131.10(g)(4), for a hydrologically modified system, requires a demonstration that "it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use."

Although the UAA appropriately identifies certain activities and conditions that may affect the attainment of the use, the UAA does not specifically identify how these factors affect the attainment of the use. Furthermore, the UAA does not identify potential measures to address these factors that could restore the area to its biological potential. The UAA does not assess the impacts of applying some combination of these measures, and of the levels of beneficial uses that could be supported if these measures were implemented. As a result, it is not clear what aquatic life use is attainable in this water body, and there is no basis for removing the designated aquatic life use or replacing it with a different designated use. See section 4.6(e) for recommendations on evaluating the attainability of the designated use.

EPA notes that IDFG, in comments dated September 24, 2001 on the State's proposed change in use designations for this water body, recommended:

"...that currently undesignated streams in the Lower Boise subbasin be [designated for COLD and at least SCR]. We understand that segments not currently designated automatically default to protection for COLD but we prefer to see the designation specified to eliminate confusion...It is our opinion that streams listed in the past, do now, or are capable of supporting those uses in the future, thus we are consistent with the intent of the WQS to support potential beneficial uses as well as current ones."

EPA believes that it is important for the State to clearly demonstrate that the designated use, supported by

IDFG, is not an attainable use in this water body.

4.6 (e) Summary/recommendation

The State may choose to take steps to provide additional information and resubmit a use attainability analysis for this water body. The following summary and recommendations are intended to help the State understand EPA’s conclusions, as well as information and analytical needs that a revised UAA should address.

- It is inconclusive as to whether the presumed aquatic life use designation of COLD is the existing use.
- The State has not demonstrated that the presumed COLD aquatic life use is not attainable in this water body. The State should evaluate and clarify the attainable aquatic life use, and designate accordingly. See EPA recommendations regarding evaluating attainability under section 4.5(e) above.

4.7 Change in designated aquatic life use for SW-8

Unit	Waters	Aquatic Life	Recreation	Other
SW-8	Tenmile Creek - Blacks Creek Reservoir Dam to Miller Canal	COLD MOD	SCR	

4.7 (a) Explanation of change in State’s standard:

The State is removing the COLD aquatic life use designation on this 27.15 mile water body. The State is designating MOD as the aquatic life use in this water body. For a definition of the COLD aquatic life use designation and criteria, see section 4.2(a) above.

For this specific water body, the State has defined the aquatic life community represented by the MOD designation as “a transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...[and] that are present for a limited period of time (typically less than 2 months) only until they are fished out of the system or the irrigation season ends” (CH2MHill, 2001, p. 24). The State asserts that fish that are not caught during a few-month period during the irrigation season from these “modified” systems die naturally at the end of the irrigation season when flows decrease dramatically or disappear.

To protect the MOD use in this water body, in addition to the general surface water criteria applicable to all waters specified at IDAPA 58.01.02.200, general criteria applicable to all aquatic life use designations specified at IDAPA 58.01.02.250.01, and the numeric toxic criteria applicable to all aquatic life uses

specified at IDAPA 58.01.02.210, the State has developed certain site-specific criteria applicable to this water body. These site-specific criteria are the same as those proposed for SW-7 (described in section 4.6(a)). See also section 4.12. The proposed site-specific criteria are less stringent than those for COLD.

The State is not changing the designated recreational use in this water body.

4.7 (b) Data and rationale submitted by State in support of change:

The State provides several photographs of this water body and provides some locational information such as the upstream and downstream ends of the water body and crossings with roads and other water bodies. The UAA indicates that the water body can be subdivided into an upper and lower portion based on hydrologic regime. The State briefly discusses hydrology in the water body prior to its modification in the 1900s for drainage purposes and states that the upper portion of the water body is intermittent, but no quantitative flow observations at any location along this water body are provided. The UAA also summarizes an earlier IDEQ evaluation of this waterbody, which identified three hydrologic regimes in this water body and recommended that all beneficial uses be removed from the uppermost ephemeral reach, that aquatic life uses be removed from the second reach, and that the attainability of the designated use for the third reach be evaluated. The State describes in general terms operation and maintenance practices that may occur on irrigation drains, but provides no information about how and when specific practices occur on this particular water body, or about any specific physical habitat consequences that may have result from any operation and maintenance activities that have occurred. The limited water quality presented indicate water quality suitable for COLD, although no explanation is provided as to whether these values are representative of conditions throughout the water body. No macroinvertebrate observations are provided for any location on this water body. The State presents results from three June electrofishing samples in three recent years (a fourth attempt was made but the water body was dry at the sampling location); one of these found no fish or amphibians; the other two sampling events found warm water fish. The State reports that, according to a personal communication with IDFG, that agency does not stock this water body nor does it have records of fish in this water body on or after 11/28/75.

The State asserts that there is no evidence to indicate that COLD is an existing use in this water body. The State also asserts that operation and maintenance activities performed by irrigation Districts are necessary to fulfill their obligation to drain and convey water within the Districts, that these activities “cannot be limited as a result of inappropriate use designations” and that these activities preclude physical conditions that could support COLD. The State does not cite a 40 CFR 131.10(g) factor in support of removing the designated use and provides no supporting analysis to demonstrate that COLD is not an attainable aquatic life use designation.

4.7 (c) EPA action:

EPA disapproves removing the COLD aquatic life use designation from this water body and replacing it

with the MOD aquatic life use designation.

4.7 (d) Basis for EPA action:

Aquatic life – existing use

EPA recognizes that a portion of this water body has never conveyed irrigation flow and is dry or at most ephemeral. On a field tour conducted 9/2/04, EPA staff accompanied IDEQ staff to a location on Fivemile Creek (SW-10) approximately two miles upgradient from the intersection of Fivemile Creek with New York Canal. According to IDEQ staff, physical and hydrologic conditions in these upper portions of this water body (Tenmile Creek, SW-8) and Fivemile Creek are comparable. The trapezoidal channel that had been dug for Fivemile Creek was evident. According to IDEQ staff, the channel had been created in anticipation that the surrounding fields would be developed for agriculture, but this development never occurred. As a result, a significant portion of Tenmile Creek (at least, presumably, the portion above New York Canal) has never carried irrigation flow and is generally dry. See McGuire, 2004, “Notes on Boise field tour,” with accompanying photographs. It may be appropriate for the State to change in its regulations the upstream boundary of the water body to exclude any portions which do not convey flow at any time.

With respect to the downstream, perennial portion of the water body, it is inconclusive that COLD is not an existing use. The UAA indicates that a single 1997 beneficial use sampling effort in this segment reported no fish or amphibians. This single field report is inconclusive, as sampling should reflect varying habitat conditions, if any; should use appropriate combinations of gear type; should be done at key periods such as early March when rainbow trout spawn. The State claims that physical habitat conditions preclude the existence of COLD in this water body, but does not describe physical habitat in sufficient detail to enable a conclusion that physical habitat conditions would preclude COLD. The State provides limited water quality data (e.g., the State does not indicate whether the values provided are maxima, daily averages, instantaneous measurements, or some other value), but the limited data that are provided available suggest DO and temperature conditions suitable for COLD.

Moreover, several sources of information suggest that COLD may be an existing use in portions of this water body. EPA notes that Tenmile Creek flows into Fivemile Creek (SW-10) to form Fifteenmile Creek (SW-7), which flows into the lower Boise River. The lower Boise River is designated for COLD and SS. IDFG has written that wild rainbow trout were found in both Fifteenmile Creek (SW-7) and Fivemile Creek (SW-10), although they noted that these findings are from prior to November 28, 1975¹⁰. The State does not describe any fish passage barriers that would prevent fish from moving from the lower

¹⁰ In a 1997 letter from IDFG to IDEQ, IDFG wrote that “[b]ased on file information from electrofishing samples and fish kill assessments, we know wild rainbow trout were present prior to November 28, 1975 in Indian Creek above and below Sugar Avenue, Seven Mile Creek, Fivemile Creek at Meridian, Tenmile Creek below confluence with Fivemile Creek, and Conway Gulch at Notus (Gibson 1975; unpublished IDFG file information.)”

Boise into these tributaries.

In summary, it is inconclusive that COLD is not an existing use in the lower, perennial portion of this water body. EPA has provided specific recommendations as to additional physical, chemical, and biological sampling that could more adequately characterize the existing use in this water body.

Aquatic life – attainable use

A portion of this water body may never convey flow and have no aquatic life uses and it may be appropriate for the State to change the regulatory upper boundary of this water body.

With respect to the lower portions of this water body, the UAA does not demonstrate that COLD is not an attainable use. The State does not identify a 40 CFR 131.10(g) factor that would justify removing the designated use from this segment. However, the UAA explains that operation and maintenance activities, including dredging and cleaning, required to maintain the drainage and conveyance purposes of these drains, remove the habitat necessary to support COLD. The UAA also explains that operation and maintenance activities, and the Districts' rights to the water in these waterways, can not be restricted. This would suggest that 40 CFR 131.10(g)(3) and (4) could be evaluated as a basis for demonstrating that the designated use is not attainable. The use of 40 CFR 131.10(g)(3) requires a demonstration that the human-caused conditions "cannot be remedied or would cause more environmental damage to correct than to leave in place." The use of 40 CFR 131.10(g)(4), for a hydrologically modified system, requires a demonstration that "it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use," respectively.

Although the UAA appropriately identifies certain activities and conditions that may affect the attainment of the use, the UAA does not specifically identify how factors affect the attainment of the use. Furthermore, the UAA does not identify potential measures to address these factors that could restore the area to its biological potential. The UAA does not assess the impacts of applying some combination of these measures, and of the levels of beneficial uses that could be supported if these measures were implemented. As a result, it is not clear what aquatic life use is attainable in this water body, and there is no basis for removing the designated aquatic life use or replacing it with a different designated use. See section 4.7(e) for recommendations on evaluating the attainability of the designated use.

4.7 (e) Summary/recommendation

The State may choose to take steps to provide additional information and resubmit a use attainability analysis for this water body. The following summary and recommendations are intended to help the State understand EPA's conclusions, as well as information and analytical needs that a revised UAA should address.

- It may be appropriate for the State to change the upper boundary of this water body to exclude any portion that does not convey flow at any time.
- It may be appropriate for the State to subsegment the remaining water body into intermittent or ephemeral and perennial portions, so that appropriate use designations and criteria could be developed and applied to each subsegment. However, such a subsegmentation would need to be developed based on a reasonable characterization of the hydrology and other physical features of the water body.
- It is inconclusive that COLD is not an existing use in the lower portions of this water body.
- The State has not demonstrated that COLD aquatic life use is not attainable in this water body. See EPA recommendations regarding evaluating attainability under section 4.5(e) above.

4.8 Change in designated aquatic life use for SW-10

Unit	Waters	Aquatic Life	Recreation	Other
SW-10	Fivemile Creek - source to Miller Canal	COLD MOD	SCR	

4.8 (a) Explanation of change in State’s standard:

The State is removing the COLD aquatic life use designation on this 28.92 mile water body. The State is designating MOD as the aquatic life use in this water body. For definition of the COLD designated use, see section 4.2(a) above.

For this specific water body, the State has defined the aquatic life community represented by the MOD designation as “a transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...[and] that are present for a limited period of time (typically less than 2 months) only until they are fished out of the system or the irrigation season ends” (CH2MHill, 2001, p. 24). The State asserts that fish that are not caught during a few-month period during the irrigation season from these “modified” systems die naturally at the end of the irrigation season when flows decrease dramatically or disappear.

To protect the MOD use in this water body, in addition to the general surface water criteria applicable to all waters specified at IDAPA 58.01.02.200, general criteria applicable to all aquatic life use designations specified at IDAPA 58.01.02.250.01, and the numeric toxic criteria applicable to all aquatic life uses specified at IDAPA 58.01.02.210, the State has developed certain site-specific criteria applicable to this water body. These site-specific criteria are the same as those proposed for SW-7 (described in section 4.6(a)) and SW-8. See also section 4.12. The proposed site-specific criteria are less stringent than those

for COLD.

The State is not changing the designated recreational use in this water body.

4.8 (b) Data and rationale submitted by State in support of change:

The State provides several photographs of this water body and provides limited information on location and features of the water body (e.g., crossings with canals, portions of water body under specific irrigation District jurisdiction, identification of a point source discharger, qualitative statement regarding sources of flow in the water body). The State indicates that in the upper portion of this water body, flow conditions are either ephemeral or intermittent, while in the lower portion of the water body, flow conditions are perennial. However, no quantitative streamflow observations are provided at any location on this water body, and no information on physical dimensions of water body (e.g., reach length, distance between key features, channel characteristics) is provided. For the upper, intermittent/ephemeral portion, the State provides two summertime temperature observations and two summertime dissolved oxygen observations. All of these values indicate water quality suitable for cold water biota. For the lower, perennial segment of this water body, the State provides a summary range for temperature, dissolved oxygen, and *E. coli* observations (a tabulation of raw data is provided in an Appendix to the State's submittal). The upper values of these ranges exceed cold water biota and contact recreation criteria. The State describes in generic terms operation and maintenance practices that may occur on irrigation drains, but provides no information about how and when specific practices occur at any point along this entire water body, or about any specific physical habitat consequences that may have result from any operation and maintenance activities that have occurred.

The State asserts that there is no evidence to indicate that COLD is an existing use in this water body. The State also asserts that operation and maintenance activities performed by irrigation Districts are necessary to fulfill their obligation to drain and convey water within the Districts, that these activities "cannot be limited as a result of inappropriate use designations" and that these activities preclude physical conditions that could support COLD. The State does not cite a 40 CFR 131.10(g) factor in support of removing the designated use and provides no supporting analysis to demonstrate that COLD is not an attainable aquatic life use designation.

4.8 (c) EPA action:

EPA disapproves removing the COLD aquatic life use designation on this water body and replacing it with the MOD aquatic life use designation.

4.8 (d) Basis for EPA action:

Aquatic life – existing use

With respect to the upper, ephemeral/intermittent portion, EPA recognizes that a portion of this water body has never conveyed irrigation flow and is dry or at most ephemeral. On a field tour conducted 9/2/04, EPA staff accompanied IDEQ staff to a location on Fivemile Creek (SW-10) approximately two miles upgradient from the intersection of Fivemile Creek with New York Canal. The trapezoidal channel that had been dug for Fivemile Creek was evident. According to IDEQ staff, the channel had been created in anticipation that the surrounding fields would be developed for agriculture, but this development never occurred. As a result, a significant portion of Fivemile Creek (at least, presumably, the portion above New York Canal) has never carried irrigation flow and is generally dry. See McGuire, 2004, “Notes on Boise field tour,” with accompanying photographs. It may be appropriate for the State to change in its regulations the upstream boundary of the water body to exclude any portions which do not convey flow at any time.

With respect to the lower, perennial portion, the data are inconclusive that COLD is not an existing use. The State presents some information intended to support that COLD is not an existing use in this water body. This includes fish survey results from October 19, 1995 upstream and downstream of the sole point source discharger into this water body; the sample did not identify salmonids. In addition, fish sample results from October 2003 which became available after the State submitted its use designation changes to EPA also did not identify salmonids. Furthermore, the upper ranges of the DO and temperature data presented by the State exceed the DO and temperature criteria for the COLD aquatic life use designation. However, there are several critical limitations to these data. For example, the biological sampling is limited in spatial and temporal representativeness of the water body. In addition, one hundred thirty six temperature observations are provided in an Appendix to the UAA; of these observations, the majority (116 observations) indicate water temperatures suitable for cold water biota. Four observations are greater than or equal to 22 deg. C (the maximum daily average water temperature criterion for the COLD use designation), and sixteen of the observations are between 19 deg. C (the instantaneous water temperature criterion for the COLD use designation) and 22 deg. C. However, since the State does not indicate whether the water quality values provided are maxima, daily averages, instantaneous measurements, and because it is difficult to determine whether the observations are well distributed spatially and in time, it is difficult to determine the significance of the observations that exceed the COLD water temperature criteria. In addition, although the UAA states that the minimum dissolved oxygen reported in the downstream, perennial portion of this water body was 4 mg/L, the actual data provided in an appendix to the UAA show that the overwhelming majority of dissolved oxygen observations are well above 6 mg/L. Although the State claims that physical habitat conditions preclude the existence of COLD in this water body, the State does not describe physical habitat in sufficient detail to enable a conclusion that physical habitat conditions would preclude COLD. See specific comments on data limitations in McGuire, 2004 (“Summary for Fivemile A” and “Summary for Fivemile B”).

Moreover, several sources of information suggest that COLD may be an existing use in this water body.

The State has said elsewhere that “it is reasonable to assume that a small adult rainbow trout population resides in Fivemile and Tenmile Creek during the irrigation season” (SBA, 2001; this source does not explain why juvenile cold water fish would not be present also, or why either adult or juvenile cold water species would not be present in perennial portions of these water bodies during the non-irrigation season as well, and EPA is not aware of any information that would lead to this conclusion in this water body). As noted earlier, Fivemile Creek forms a confluence with Tenmile Creek (SW-8) to form Fifteenmile Creek (SW-7), which then flows into the lower Boise River. The lower Boise River is designated for COLD, SS, and PCR. IDFG has written that wild rainbow trout were found in both Fifteenmile Creek (SW-7) and this water body, although they noted that these findings are from prior to November 28, 1975¹¹. The State does not describe any fish passage barriers that would prevent fish from moving from the lower Boise into these tributaries. In summary, it is inconclusive that COLD is not an existing use in this water body.

Aquatic life – attainable use

With respect to the lower portion, the UAA does not demonstrate that COLD is not an attainable use. The State does not identify a 40 CFR 131.10(g) factor that would justify removing the designated use from this segment. However, the UAA explains that operation and maintenance activities, including dredging and cleaning, required to maintain the drainage and conveyance purposes of these drains, remove the habitat necessary to support COLD. The UAA also explains that operation and maintenance activities, and the Districts’ rights to the water in these waterways, can not be restricted. This would suggest that 40 CFR 131.10(g)(3) and (4) could be evaluated as a basis for demonstrating that the designated use is not attainable. The use of 40 CFR 131.10(g)(3) requires a demonstration that the human-caused conditions “cannot be remedied or would cause more environmental damage to correct than to leave in place.” The use of 40 CFR 131.10(g)(4), for a hydrologically modified system, requires a demonstration that “it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use,” respectively.

Although the UAA appropriately identifies certain activities and conditions that may affect the attainment of the use, the UAA does not specifically identify how factors affect the attainment of the use in this particular water body. Furthermore, the UAA does not identify potential measures to address these factors that could restore the area to its biological potential. The UAA does not assess the impacts of applying some combination of these measures, and of the levels of beneficial uses that could be supported if these measures were implemented. As a result, it is not clear what aquatic life use is attainable in this water body, and there is no basis for removing the designated aquatic life use or replacing it with a different designated use. See section 4.8(e) for recommendations on evaluating attainable uses.

¹¹ In a 1997 letter from IDFG to IDEQ, IDFG wrote that “[b]ased on file information from electrofishing samples and fish kill assessments, we know wild rainbow trout were present prior to November 28, 1975 in Indian Creek above and below Sugar Avenue, Seven Mile Creek, Fivemile Creek at Meridian, Tenmile Creek below confluence with Fivemile Creek, and Conway Gulch at Notus (Gibson 1975; unpublished IDFG file information.)”

4.8 (e) Summary/recommendation

The State may choose to take steps to provide additional information and resubmit a use attainability analysis for this water body. The following summary and recommendations are intended to help the State understand EPA’s conclusions, as well as information and analytical needs that a revised UAA should address.

- It may be appropriate for the State to change the upper boundary of this water body to exclude any portion that does not convey flow at any time.
- It may be appropriate for the State to subsegment the remaining water body into intermittent or ephemeral and perennial portions, so that appropriate use designations and criteria could be developed and applied to each subsegment. However, such a subsegmentation would need to be developed based on a reasonable characterization of the hydrology and other physical features of the water body.
- It is inconclusive as to whether COLD is an existing or attainable use in the lower portions. See the fifth bullet in section 4.5(e) for EPA’s recommendations on evaluating attainable uses.
- It is inconclusive that COLD is not an existing use in the lower portions of this water body.
- The State has not demonstrated that the presumed COLD aquatic life use is not attainable in this water body. See EPA recommendations regarding evaluating attainability under section 4.5(e) above.

4.9 Change in designated recreational and aquatic life uses for SW-17

Unit	Waters	Aquatic Life	Recreation	Other
SW-17	Sand Hollow Creek - source to mouth	<u>MOD</u>	<u>SCR</u>	

4.9 (a) Explanation of change in State’s standard:

This 24.4 mile water body was previously undesignated in Idaho regulations. As explained earlier, according to State regulations, it is presumed that most waters in the State will support cold water aquatic life and primary or secondary contact recreation and therefore the criteria associated with COLD and PCR or SCR are presumed to apply to undesignated waters (IDAPA 58.01.02.101; see section 4.5(a) above). With the above change, the State explicitly designates the SCR recreational use. Please see section 4.1(a) for a definition of the PCR and SCR designated uses and criteria.

With the above change, the State also explicitly designates the aquatic life use in this water body as

MOD. For this specific water body, the State has defined the aquatic life community represented by the MOD designation as “a transient population of non-game fish and stocked rainbow trout that have been diverted from the Boise River...[and] that are present for a limited period of time (typically less than 2 months) only until they are fished out of the system or the irrigation season ends” (CH2MHill, 2001, p. 24). The State asserts that fish that are not caught during a few-month period during the irrigation season die naturally at the end of the irrigation season when flows decrease dramatically or disappear. In addition to the general surface water criteria applicable to all waters specified at IDAPA 58.01.02.200, general criteria applicable to all aquatic life use designations specified at IDAPA 58.01.02.250.01, and the numeric toxic criteria applicable to all aquatic life uses specified at IDAPA 58.01.02.210, the State proposes site-specific criteria for the MOD aquatic life use designation for this water body which are the same as those proposed for SW-3b and for SW-6 (see section 4.2(a) above as well as section 4.11 below). These criteria are less stringent than the COLD criteria.

4.9 (b) Data and rationale submitted by State in support of change:

The State provides four photographs that the State says represent typical conditions and reflect adjacent land management practices for this water body. The State asserts that flow in the upstream portion of this water body is intermittent, and is perennial in the downstream portion of this water body. Limited hydrologic data are provided in support of this assertion. The State provides quantitative and/or narrative results of 5 habitat evaluations performed along this water body. Most quantitative scores indicate impaired physical habitat. The limited available water quality data described by the State include maximum temperature values which exceed the COLD numeric criteria and minimum DO values lower than the COLD criteria. A range of *E. coli* concentrations are presented, with values exceeding PCR and SCR. A single macroinvertebrate sample from June 1996 is summarized and the State indicates that none of the taxa were considered cold water biota. The State notes that IDFG “reportedly” stocked this tributary with, and has observed, rainbow trout during the 1970s and 1980s and the State describes results of several fish sampling efforts between 10/80 and 7/97 which include several rainbow trout, 2 warm water species, and a majority of cool water species.

The State asserts that SCR is the existing use in this water body but provides no observations regarding recreational use in this water body besides noting that the irrigation districts which manage these water bodies do not condone or encourage contact recreation by trespassers.

The State cites 40 CFR 131.10(g)(2), (4), and (5) in support of removing the COLD designation and asserts that intermittent flow conditions, the operation of the irrigation canal, and physical conditions resulting from the water body’s construction and as an irrigation conveyance preclude a cold water biota aquatic life use. The State provides a generic statement asserting that “transforming” these tributaries into water bodies suitable for COLD is “not feasible” because of the length of these and similar water bodies, the current and foreseeable irrigation management activities, the scope of the project that would be required, and the multiple stakeholders involved. However, the State provides no further discussion or

analyses in support of these assertions for any specific water body.

4.9 (c) EPA action:

EPA approves removing the “undesigned” status of this water body with respect to recreational use and designating this water body as SCR.

EPA disapproves removing the “undesigned” status of this water body with respect to aquatic life use and replacing it with the MOD aquatic life use designation.

4.9 (d) Basis for EPA action:

Recreation

The UAA does not provide observations that would indicate whether PCR or SCR, which are the presumed recreational uses in this water body, actually exist. EPA is not aware of any information indicating that PCR is an existing use in this water body. In addition, the State has elsewhere indicated that there are safety concerns regarding recreation in irrigation water bodies. For example, the State has elsewhere provided a series of newspaper articles describing accidents and drownings in Idaho irrigation ditches that have occurred during the past two decades; these articles also describe education and outreach efforts by the Districts and other organizations relative to the hazards of recreation in irrigation waterways (see Appendix 8 of Ringert and Clark, 2001).

Since SCR is asserted to be the existing use in this water body, since there are safety concerns with PCR in this water body in any case, and since Idaho regulations establish that the bacteriological criterion used for compliance purposes is the same for both PCR and SCR, given the policy option explained in section 4.1(d) above, designating SCR in this case is reasonable.

Aquatic life – existing use

Available information indicates that COLD (and possibly SS) is an existing use in this water body. Although the State presents results of limited earlier sampling data indicating the presence of warm, cool, and cold water fish in the lower portions of the water body, several additional sources of information indicate that COLD is an existing use in this water body. Electrofishing results from 2002 indicate presence of multiple age classes of brown trout, suggesting the possibility of local spawning¹¹. These

¹¹In an 8/22/02 letter from IDEQ (Horsburgh and Bridges) to EPA (Filippini), IDEQ reported that “[o]f the two sites electrofished in Sand Hollow Creek...juvenile brown trout were located at a site above the Sand Hollow Wasteway...The fish were not young-of-the year, but the presence of several juvenile fish in the same age class may indicate local spawning. Adult brown trout were also located at the site. The age class distribution of brown trout in the upper segment of Sand Hollow Creek suggests that salmonid spawning may be occurring.”

results, although limited, indicate that cold water biota is an existing use in this segment. Furthermore, EPA notes that this water body discharges to the Snake River, which has an aquatic life use designation of COLD. The State does not describe the presence of fish passage barriers within this water body or between Sand Hollow Creek and the Snake River that would preclude the movement of cold water organisms into this water body. In addition, EPA notes that the source of water to SHC:A is the C-Line Canal. The C-Line Canal originates in the Payette River, which also has an aquatic life use designation of COLD and SS. Although poor physical habitat conditions exist and, to a limited extent, are described by the State, this information does not conclusively demonstrate that either water quality or physical habitat conditions preclude the use of this segment by cold water aquatic life.

EPA notes that IDFG, in comments dated September 24, 2001 on the State's proposed change in use designations for this water body, recommended:

“...that currently undesignated streams in the Lower Boise subbasin be [designated for COLD and at least SCR]. We understand that segments not currently designated automatically default to protection for COLD but we prefer to see the designation specified to eliminate confusion...It is our opinion that streams listed in the past, do now, or are capable of supporting those uses in the future, thus we are consistent with the intent of the WQS to support potential beneficial uses as well as current ones.”

4.9 (e) Summary/recommendation

The State may choose to take steps to provide additional information and resubmit a use attainability analysis for this water body. The following summary and recommendations are intended to help the State understand EPA's conclusions, as well as information and analytical needs that a revised UAA should address.

- Available information indicate that COLD (and possibly SS) is an existing use in this water body.
- It may be appropriate to evaluate, in the next triennial review cycle, whether the designated use in this water body should be upgraded to include salmonid spawning (SS).

4.10 Administrative change

278. LOWER BOISE RIVER SUBBASIN, HUC 17050114 SUBSECTION 150.12 –SW-1 AND SW-5 SALMONID SPAWNING AND DISSOLVED OXYGEN.

01. Boise River, SW-1 and SW-5 - Salmonid Spawning and Dissolved Oxygen.

The waters of the Boise River from Veterans State Park to its mouth will have dissolved oxygen concentrations of six (6) mg/l or seventy-five percent (75%) of saturation, whichever is greater,

during the spawning period of salmonid fishes inhabiting those waters.

4.10 (a) Explanation of change in State standard:

Previously, paragraph 278 of Idaho's regulations addressed only water bodies SW-1 and SW-5 in hydrologic unit (HUC) 17050114. Because the State wishes to add two new subparagraphs to paragraph 278 specifying site-specific criteria for six other water bodies in this HUC, the State is amend the title and structure of this paragraph. This change alone has no substantive effect on Idaho water quality standards.

4.10 (b) Data and rationale submitted by State in support of change:

Not applicable

4.10 (c) EPA action:

Approve.

4.10 (d) Basis for EPA action:

This revision in itself does not change to any water quality standard.

4.11 Specification of site-specific criteria for SW-3b, SW-6, and SW-17

02. Indian Creek, SW-3b, Mason Creek, SW-6, And Sand Hollow Creek, SW-17 - Modified Aquatic Life Use. All numeric criteria applicable to the seasonal cold water aquatic life use apply with the exception of dissolved oxygen. Dissolved oxygen concentrations are to exceed four (4) mg/l at all times. (11-9-01)T

4.11 (a) Explanation of change in State standard:

This paragraph establishes new site-specific criteria applicable to the three water bodies SW-3b (Indian Creek (reservoir to split between New York Canal and Indian Creek streambed), SW-6 (Mason Creek), and SW-17 (Sand Hollow Creek).

Note that the State sought to remove the COLD and SS designated aquatic life uses from SW-3b and EPA disapproved that change. See section 4.2 for an explanation of EPA's decision. Also, note that the State sought to explicitly designate SW-6 and SW-17, which were previously undesignated, with an aquatic life use designation of MOD and EPA disapproved that change. See sections 4.5 and 4.9 for an explanation of EPA's decision.

4.11 (b) Data and rationale submitted by State in support of change:

The State characterizes the aquatic life community in these water bodies as a transient population of non-game (including dace, suckers, shiners, and sculpin) and stocked rainbow trout that have been diverted from the Boise River. The State asserts that any fish in this “limited” community are typically present for less than two months, asserting that fish that are not caught by recreational fishermen during the irrigation season die naturally at the end of the irrigation season when water levels decline or disappear. The State bases this characterization on “available data” (presumably the same fish survey data presented in the UAA) as well as “anecdotal information.”

Having characterized the aquatic community currently present in these water bodies as described above, the State surveys numeric criteria developed by several other States (NE, NV, UT, WY, and OH) to protect limited freshwater aquatic life uses. The State also considers EPA Gold Book criteria for pH and EPA’s Gold Book absolute minimum value for dissolved oxygen (DO) for non-early life stages; and scientific literature regarding environmental requirements for various fish species.

Based upon this information, the State concludes that the numeric criteria set forth in its amendment above are protective of the aquatic life communities in these water bodies.

4.11 (c) EPA action:

EPA disapproves the site-specific criteria for SW-3b, SW-6, and SW-17.

4.11 (d) Basis for EPA action:

EPA disapproves this change because EPA has not approved removing the designated aquatic life use of COLD and SS for SW-3b, or the change in designated use status for SW-6 and SW-17 as explained in sections 4.2, 4.5, and 4.9 above. Therefore, the criteria currently applicable to those water bodies still apply, and State regulations should not here define new site-specific criteria for these water bodies.

4.11 (e) Summary/recommendation

EPA notes several concerns regarding the State’s data and rationale supporting the site-specific criteria.

- The State’s assertion that the presence of fish in these water bodies is only transient may be true for portions of these water bodies, but the State itself recognizes that significant portions of these water bodies are perennial. The State provides no basis for concluding that fish may not be present year-round in these perennial portions.
- EPA recommends that the State, in defining the site-specific criteria for the MOD use designation here, also define in the regulation the aquatic life community that the site-specific criteria are

intended to protect. Otherwise, there is no indication anywhere in the State's regulations what the target aquatic life community is for this water body.

- EPA notes that the State has provided no justification for omitting turbidity criteria during the summer for the MOD aquatic life use site-specific criteria.
- EPA notes that the State's assumption of acute mortality as an appropriate protection goal used in developing the dissolved oxygen site-specific criteria is not consistent with nationally recommended dissolved oxygen criteria.

4.12 Specification of site-specific criteria for SW-7, SW-8, and SW-10.

03. Fifteenmile Creek, SW-7; Tenmile Creek, SW-8, and Five Mile Creek, SW-10 - Modified Aquatic Life Use. All numeric criteria *applicable to the seasonal cold water aquatic life use* apply. (11-9-01)T

4.12 (a) Explanation of change in State standard:

This paragraph establishes new site-specific criteria applicable to the three water bodies SW-7 (Fifteenmile Creek), SW-8 (Tenmile Creek), and SW-10 (Five Mile Creek).

Note that the State sought to remove the COLD designated aquatic life use from SW-8 and SW-10 and EPA disapproved those changes. See sections 4.7 and 4.8 for an explanation of EPA's decision. Also, note that the State sought to explicitly designate SW-7, which was previously undesignated, with an aquatic life use designation of MOD and EPA disapproved that change. See section 4.6 for an explanation of EPA's decision.

4.12 (b) Data and rationale submitted by State in support of change:

Please see discussion in section 4.11 (b).

4.12 (c) EPA action:

EPA disapproves the site-specific criteria for SW-7, SW-8, and SW-10.

4.12 (d) Basis for EPA action:

EPA disapproves this change because EPA has not approved removing the designated aquatic life use of COLD for SW-8 and SW-10, or the change in designated use status for SW-7. Therefore, the criteria currently applicable to those water bodies still apply, and State regulations should not here define new site-specific criteria for these water bodies.

4.12 (e) Summary/recommendation

Please see discussion under section 4.11(e).

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