COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL COMMISSION

REGULATION NO. 37

CLASSIFICATIONS AND NUMERIC STANDARDS FOR LOWER COLORADO RIVER BASIN

	ADOPTED:	February 14, 1983
	EFFECTIVE:	March 30, 1983
TRIENNIAL	REVIEW:	April 7, 1986
	AMENDED:	September 12, 1986
	EFFECTIVE:	October 30, 1986
	AMENDED:	February 4, 1991
	EFFECTIVE:	March 30, 1991
TRIENNIAL	REVIEW:	October 6, 1992
	AMENDED:	March 1, 1993
	EFFECTIVE:	April 30, 1993
	AMENDED:	September 7, 1993
	EFFECTIVE:	October 30, 1993
	AMENDED:	July 10, 1995
	EFFECTIVE:	August 30, 1995
TRIENNIAL	REVIEW:	November 13, 1995
	AMENDED:	July 14, 1997
	EFFECTIVE:	August 30, 1997
	AMENDED:	October 9, 2001
	EFFECTIVE:	February 20, 2002
	AMENDED:	July 8, 2002
	EFFECTIVE:	August 30, 2002
	AMENDED:	September 8, 2003
	EFFECTIVE:	January 20, 2004

REGULATION NO. 37

CLASSIFICATIONS AND NUMERIC STANDARDS
LOWER COLORADO RIVER BASIN

37.1 AUTHORITY

These regulations are promulgated pursuant to section 25-8-101 et seq. C.R.S., as amended, and in particular, 25-8-203 and 25-8-204.

37.2 PURPOSE

These regulations establish classifications and numeric standards for the Colorado River Basin, including all tributaries and standing bodies of water. This includes all or parts of Garfield, Mesa, Rio Blanco, Moffat and Routt Counties. The classifications identify the actual beneficial uses of the water. The numeric standards are assigned to determine the allowable concentrations of various parameters. Discharge permits will be issued by the Water Quality Control Division to comply with basic, narrative, and numeric standards and control regulations so that all discharges to waters of the state protect the classified uses. (See Regulation No. 31, section 31.14). It is intended that these and all other stream classifications and numeric standards be used in conjunction with and be an integral part of Regulation No. 31 Basic Standards and Methodologies for Surface Water.

37.3 INTRODUCTION

These regulations and tables present the classifications and numeric standards assigned to stream segments listed in the attached tables (see section 37.7). As additional stream segments are classified and numeric standards for designated parameters are assigned for this drainage system, they will be added to or replace the numeric standards in the tables in section 37.7. Any additions or revisions of classifications or numeric standards can be accomplished only after public hearing by the Commission and proper consideration of evidence and testimony as specified by the statute and the "basic regulations".

37.4 DEFINITIONS

See the Colorado Water Quality Control Act and the codified water quality regulations for definitions.

37.5 BASIC STANDARDS

(1) All waters of the Colorado River Basin are subject to the following standard for temperature. (Discharges regulated by permits, which are within the permit limitations, shall not be subject to enforcement proceedings under this standard). Temperature shall maintain a normal pattern of diurnal and seasonal fluctuations with no abrupt changes and shall have no increase in temperature of a magnitude,

rate, and duration deemed deleterious to the resident aquatic life. Generally, a maximum 3°C increase over a minimum of a four-hour period, lasting 12 hours maximum, is deemed acceptable for discharges fluctuating in volume or temperature. Where temperature increases cannot be maintained within this range using Best Management Practices (BMP), Best Available Technology Economically Achievable (BATEA), and Best Practical Waste Treatment Technology (BPWTT) control measures, the Commission may determine by a rulemaking hearing in accordance with the requirements of the applicable statutes and the basic regulations, whether or not a change in classification is warranted.

(2) ORGANICS

See Basic Standards and Methodologies for Surface Water 31.11 for a listing of organic standards. The column in the tables headed “Water + Fish” are presumptively applied to all aquatic life class 1 streams which also have a water supply classification, and are applied to aquatic life class 2 streams which also have a water supply classification, on a case-by-case basis as shown in the Tables 37.7. The column in the tables at 31.11 headed “Fish Ingestion” is presumptively applied to all aquatic life class 1 streams which do not have a water supply classification, and are applied to aquatic life class 2 streams which do not have a water supply classification, on a case-by-case basis as shown in Tables 37.7.

(3) URANIUM

(a) All waters of the Lower Colorado River Basin, are subject to the following basic standard for uranium, unless otherwise specified by a water quality standard applicable to a particular segment. However, discharges of uranium regulated by permits which are within these permit limitations shall not be a basis for enforcement proceedings under this basic standard.

(b) Uranium level in surface waters shall be maintained at the lowest practicable level.

(c) In no case shall uranium levels in waters assigned a water supply classification be increased by any cause attributable to municipal, industrial, or agricultural discharges so as to exceed 40 pCi/l or naturally-occurring concentrations (as determined by the State of Colorado), whichever is greater.

(d) In no case shall uranium levels in waters assigned a water supply classification be increased by a cause attributable to municipal, industrial, or agricultural discharges so as to exceed 40 pCi/l where naturally-occurring concentrations are less than 40 pCi/l.

37.6 TABLES

(1) Introduction

The numeric standards for various parameters in the attached tables were assigned by the Commission after a careful analysis of the data presented on actual stream conditions and on actual and potential water uses.

Numeric standards are not assigned for all parameters listed in the tables attached to Regulation No. 31. If additional numeric standards are found to be needed during future periodic reviews, they can be assigned by following the proper hearing procedures.

(2) Abbreviations:

The following abbreviations are used in the attached tables:

ac	=	acute (1-day)
Ag	=	silver
Al	=	aluminum
As	=	arsenic
B	=	boron
Ba	=	barium
Be	=	beryllium
Cd	=	cadmium
ch	=	chronic (30-day)
Cl	=	chloride
Cl_2	=	residual chlorine
CN	=	free cyanide
CrIII	=	trivalent chromium
CrVI	=	hexavalent chromium
Cu	=	copper
dis	=	dissolved
D.O.	=	dissolved oxygen

E.Coli	=	escherichia coli
F.Coli	=	fecal coliforms
Fe	=	iron
Hg	=	mercury
mg/l	=	milligrams per liter
ml	=	milliliters
Mn	=	manganese
NH_3	=	un-ionized ammonia as N(nitrogen)
Ni	=	nickel
NO_2	=	nitrite as N (nitrogen)
NO_3	=	nitrate as N (nitrogen)
OW	=	outstanding waters
P	=	phosphorus
Pb	=	lead
S	=	sulfide as undissociated H_2S (hydrogen sulfide)
Sb	=	antimony
Se	=	selenium
SO_4	=	sulfate
sp	=	spawning
Tl	=	thallium
tr	=	trout
Trec	=	total recoverable
TVS	=	table value standard
U	=	uranium
ug/l	=	micrograms per liter
UP	=	use-protected

Zn	=	zinc

In addition, the following abbreviations were used:

Fe(ch)	=	WS(dis)
Mn(ch)	=	WS(dis)
SO_4	=	WS

These abbreviations mean: For all surface waters with an actual water supply use, the less restrictive of the following two options shall apply as numerical standards, as specified in the Basic Standards and Methodologies at 31.11(6):

(i) existing quality as of January 1, 2000; or

(ii)

Iron	=	300 μg/l (dissolved)
Manganese	=	50 μg/l (dissolved)
SO_4	=	250 mg/l

For all surface waters with a “water supply” classification that are not in actual use as a water supply, no water supply standards are applied for iron, manganese or sulfate, unless the Commission determines as the result of a site-specific rulemaking hearing that such standards are appropriate.

(3) Table Value Standards

In certain instances in the attached tables, the designation "TVS" is used to indicate that for a particular parameter a "table value standard" has been adopted. This designation refers to numerical criteria set forth in the Basic Standards and Methodologies for Surface Water. The criteria for which the TVS are applicable are on the following table.

TABLE VALUE STANDARDS
(Concentrations in ug/l unless noted)

PARAMETER[1]	TABLE VALUE STANDARDS [2][3]
Ammonia	Cold Water Acute = 0.43/FT/FPH/2[4] in mg/l Warm Water Acute = 0.62/FT/FPH/2[4] in mg/l

Cadmium	Acute = $(1.13667-[\ln(\text{hardness})*(0.04184)])*e^{(1.128[\ln(\text{hardness})]-3.6867)}$ Acute(Trout) = $(1.13667-[\ln(\text{hardness})*(0.04184)])*e^{(1.128[\ln(\text{hardness})]-3.828)}$ Chronic = $(1.10167-[\ln(\text{hardness})*(0.04184)])*e^{(0.7852[\ln(\text{hardness})]-2.715)}$
Chromium III[5]	Acute = $e^{(0.819[\ln(\text{hardness})]+2.5736)}$ Chronic $=e^{(0.819[\ln(\text{hardness})]+0.5340)}$
Chromium VI[5]	Acute = 16 Chronic = 11
Copper	Acute = $e^{(0.9422[\ln(\text{hardness})]-1.7408)}$ Chronic = $e^{(0.8545[\ln(\text{hardness})]-1.7428)}$
Lead	Acute = $(1.46203-[\ln(\text{hardness})*(0.145712)])*e^{(1.273[\ln(\text{hardness})]-1.46)}$ Chronic $=(1.46203-[\ln(\text{hardness})*(0.145712)])*e^{(1.273[\ln(\text{hardness})]-4.705)}$
Manganese	Acute = $e^{(0.3331[\ln(\text{hardness})]+6.4676)}$ Chronic = $e^{(0.3331[\ln(\text{hardness})]+5.8743)}$
Nickel	Acute = $e^{(0.846[\ln(\text{hardness})]+2.253)}$ Chronic = $e^{(0.846[\ln(\text{hardness})]+0.0554)}$
Selenium[6]	Acute = 18.4 Chronic = 4.6

Silver	Acute = ½$e^{(1.72[\ln(hardness)]-6.52)}$ Chronic = $e^{(1.72[\ln(hardness)]-9.06)}$ Chronic(Trout) = $e^{(1.72[\ln(hardness)]-10.51)}$
Uranium	Acute = $e^{(1.1021[\ln(hardness)]+2.7088)}$ Chronic = $e^{(1.1021[\ln(hardness)]+2.2382)}$
Zinc	Acute = $e^{(0.8473[\ln(hardness)]+0.8618)}$ Chronic = $e^{(0.8473[\ln(hardness)]+0.8699)}$

TABLE VALUE STANDARDS - FOOTNOTES

(1) Metals are stated as dissolved unless otherwise specified.

(2) Hardness values to be used in equations are in mg/l as calcium carbonate and shall be no greater than 400 mg/L. The hardness values used in calculating the appropriate metal standard should be based on the lower 95 per cent confidence limit of the mean hardness value at the periodic low flow criteria as determined from a regression analysis of site-specific data. Where insufficient site-specific data exists to define the mean hardness value at the periodic low flow criteria, representative regional data shall be used to perform the regression analysis. Where a regression analysis is not appropriate, a site-specific method should be used. In calculating a hardness value, regression analyses should not be extrapolated past the point that data exist.

(3) Both acute and chronic numbers adopted as stream standards are levels not to be exceeded more than once every three years on the average.

(4) $FT = 10^{0.03(20-TCAP)}$;
Where TCAP is $\leq T \leq 30$

$FT = 10^{0.03(20-T)}$;
Where 0 is $\leq T \leq TCAP$

TCAP = 20° C cold water aquatic life species present

TCAP = 25° C cold water aquatic life species absent

$FPH = 1$; Where $8 < pH \leq 9$

$FPH = 1 + 10^{(7.4-pH)}$;
1.25 Where $6.5 \leq pH \leq 8$

FPH means the acute pH adjustment factor, defined by the above formulas.

FT Means the acute temperature adjustment factor, defined by the above formulas.

T means temperature measured in degrees celsius.

TCAP means temperature CAP; the maximum temperature which affects the toxicity of ammonia to salmonid and non-salmonid fish groups.

NOTE: If the calculated acute value is less than the calculated chronic value, then the calculated chronic value shall be used as the acute standard.

(5) Unless the stability of the chromium valence state in receiving waters can be clearly demonstrated, the standard for chromium should be in terms of chromium VI. In no case can the sum of the instream levels of Hexavalent and Trivalent Chromium exceed the water supply standard of 50 ug/l total chromium in those waters classified for domestic water use.

(6) Selenium is a bioaccumulative metal and subject to a range of toxicity values depending upon numerous site-specific variables.

37.7-37.9 RESERVED

37.10 STATEMENT OF BASIS AND PURPOSE

I. Introduction

These stream classifications and water quality standards for State Waters of the Colorado River Basin below Glenwood Springs; the Yampa River Basin below Elkhead Creek; the Green River; and the entire White River drainage including all tributaries and standing bodies of water associated with those rivers in all of Moffat, Rio Blanco, Garfield, and portions of Mesa and Routt Counties implement requirements of the Colorado Water Quality Control Act C.R.S. 1973, 25-8-101 et seq. (Cum. Supp. 1981). For the sake of brevity this regulation shall be referred to as "The Lower Colorado". Regulations Establishing Basic Standards and an Antidegradation Standard and Establishing a System for Classifying State Waters, for Assigning Standards, and for Granting Temporary Modifications (the "Basic Regulations")

The Basic Regulations establish a system for the classification of State Waters according to the beneficial uses for which they are suitable or are to become suitable, and for assigning specific numerical water quality standards according to such classifications. Because these stream classifications and standards implement the Basic Regulations, the statement of basis and purpose (Section 3.1.16) of those regulations must be referred to for a complete understanding of the basis and purpose of the regulations adopted herein. Therefore, Section 3.1.16 of the Basic Regulations is incorporated by reference. The focus of this statement of basis and purpose is on the scientific and technological rationale for the specific classifications and standards in the Lower Colorado.

Public participation was a significant factor in the development of these regulations. A lengthy record was built through a public hearing held October 11-13, 1982. A total of 25 entities requested and were granted party status by the Commission in accordance with C.R.S. 1973, 24-4-101 et seq. (Cum. Supp. 1980). The record established in the hearing forms the basis for the classifications and standards adopted.

II. General Considerations

1. The Commission determined that consistant with the policy of January 5, 1981, entitled: AA Policy of Water Quality and Quantity Issues", and section 25-8-503(5) C.R.S. 1973, these water quality classifications and standards adopted for the Lower Colorado River Basin are not intended to be control regulations nor intended to apply to dams, diversion, carriage, and exchange of water from or into streams, lakes, reservoirs, or conveyance structures, or storage of water in or the release of water from lakes, reservoirs, or conveyance structures, in the exercise of water rights.

III. Definition of Stream Segments

1. For purposes of adopting classifications and water quality standards, the streams and water bodies are identified according to river basin and specific water segments.

2. Within each river basin, specific water segments are defined, for which use classifications and numeric water quality standards, if appropriate, are adopted. These segments may constitute a specified stretch of a river mainstem, a specific tributary, a specific lake or reservoir, or a generally defined grouping of waters within the basin (e.g., a specific mainstem segment and all tributaries flowing into that mainstem segment).

3. Segments are generally defined according to the points at which the use, water quality, or other stream characteristics change significantly enough to require a change in use classification and/or water quality standards. In many cases, such transition points can be specifically identified from available data. In other cases the delineation of segments is based upon best judgments of the points where instream changes in uses, water quality, or other stream characteristics occur.

IV. Use Classifications and Standards -- Generally

1. Initially, recommendations for stream segmentation and use classifications are a result of input from 208 plans, water quality data and reports, the Division of Wildlife, and personal knowledge. After a basic outline of stream segments and use classifications was prepared, water quality data from a variety of sources was compared against the "table value" for the proposed use. "Table value" refers to the four tables attached to the "Basic Regulations". In general, if the mean plus one standard deviation (x + s) of the available data for the segment indicated that a particular parameter did not exceed the "table value" for that recommended use, the "table value" was listed as the recommended standard for the parameter. If the x + s computation indicated that the instream concentrations of the parameter exceeded the "table value" and yet the use to be protected by that parameter was in place, then the x + s value was recommended as the standard for that parameter.

   Conversely, if the ambient quality (x + s) for a certain parameter exceeded the "table value" for the protection of a use, and there is information that the proposed use is <u>not</u> in place, the use classification was changed or temporary modifications to the parameters were established. Ambient quality is generally defined as the quality attributable to natural conditions and/or uncontrollable non-point sources.

2. The use classifications have been established in accordance with the provisions of Section 203 of the Water Quality Control Act and Section 3.1.6 and 3.1.13 of the Basic Regulations.

3. In most cases upstream segments of a stream are generally the same as, or higher in classification, than downstream segments in order to protect downstream uses. In a few

cases, tributaries are classified at lower classifications than mainstems where flow from tributaries does not threaten the quality of mainstem waters where the evidence indicates that lower classification for the tributaries is appropriate.

4. The Commission has determined that it has the authority to assign the classification "High Quality Waters - Class 1" and "High Quality Waters - Class 2" where the evidence indicates that the requirements of Sections 3.1.13(1)(e) of the basic regulations are met. The appropriateness of this classification has been determined on a case-by-case basis. Streams have in some cases been classified "High Quality - Class 2" for one or more of the following reasons:

    (a) to facilitate the enjoyment and use of the scenic and natural resources of the State in accordance with the Legislative Declaration of the Colorado Water Quality Control Act (25-8-102(1) C.R.S. 1973.

    (b) to provide a high degree of protection deserving of wilderness areas which are a resource providing a unique experience.

    (c) they contain threatened species or apply to wild and scenic river study areas or wilderness areas.

    (d) the concern of the USFS that High Quality 2 classification will unduly burden their management of multiple use areas is not well founded. This is because those historical activities on Forest Service land, i.e. grazing, mineral exploration, trail and road maintenance, are considered as a part of existing ambient water quality conditions and are non-point sources which are presently not subject to any Water Quality Control Commission regulations.

    (e) a question exists as to whether existing diversion structures can be maintained consistent with a "High Quality - Class 1" designation. Because of the questions regarding authority to regulate diversions, the Class 1 designation was deemed potentially too rigid. The Commission recognizes its authority to upgrade any segments needing higher levels of protection if and when it is appropriate to do so.

    Where High Quality 1 or 2 may not have been proposed, even if the waters meet the criteria in 3.1.13(1)(e) of the Basic Regulation, it was deemed important in those cases to assign specific water quality standards to protect the highest specific use classifications, and only specific use classifications provide the mechanism for assigning such standards. The use of high quality is optional at the discretion of the Commission.

5. In accordance with 25-8-104, C.R.S. 1973, the Commission intends that no provision of this regulation shall be interpreted so as to supercede, abrogate, or impair rights to divert water and apply water to beneficial uses.

6. Recreation -- Class 1 and Class 2

In addition to the significant distinction between Recreation - Class 1 and Recreation - Class 2 as defined in Section 3.1.13(1) of the Basic Regulations, the difference between the two classifications in terms of water quality standards is the fecal coliform parameter. Recreation - Class 1 generally has a standard of 200 fecal coliform per 100 ml; Recreation - Class 2 generally has a standard of 2000 fecal coliform per 100 ml.

In accordance with the Colorado Water Quality Control Act, the Commission has decided to classify as Recreation - Class 2 those stream segments where primary contact recreation does not exist and cannot be reasonably expected to exist in the future, regardless of water quality. The Commission has decided to classify as Recreation - Class 1 only those stream segments where primary contact recreation actually exists, or could reasonably be expected to occur. The reasons for the application of Recreation Class 2 are as follows:

(a) The mountain streams in this region are generally unsuitable for primary contact recreation because of low water temperature and low stream flows.

(b) Fecal coliform is an indicator organism. Its presence does not always indicate the presence of pathogens. This depends on the source of the fecal coliform. If the source is agricultural runoff as opposed to human sewage, there may be no health hazard and therefore no significant need to reduce the presence of fecal coliform to the 200 per 100 ml. level. Also, control of nonpoint sources is very difficult.

(c) Treating sewage to meet the 200 per 100 ml. level generally means the treatment plant must heavily chlorinate its effluent to meet the limitation. The presence of chlorine in the effluent can be significantly detrimental to aquatic life. Post-treatment of effluent to meet the residual chlorine standard is expensive and often results in the addition of more chemicals which have a negative effect on water quality and can be detrimental to aquatic life. Therefore, reducing the need for chlorine is beneficial to aquatic life.

(d) Even where a treatment plant in this region might treat its effluent to attain the standard of 200 per 100 ml., agricultural runoff and irrigation return flows below the plant may result in the rapid increase of fecal coliform levels. Therefore, the benefits of further treatment are questionable.

(e) The fecal coliform standard of 2000 per 100 ml. has been established to provide general public health protection. There is no significant impact on domestic drinking water treatment plants because they provide complete

disinfection. The standard of 200 per 100 ml. is not intended to protect the water supply classification.

Recreation on private lands will be dealt with by the Commission on a segment by segment basis.

7. Water Supply Classification

The Commission finds that Colorado is a water short state and that it is experiencing considerable growth which places additional burdens on already scarce water supplies. These considerations mitigate in favor of a conservative approach to protecting future water supplies. Where existing water quality is adequate to protect this use, and in the absence of dischargers to these segments or testimony in opposition to such classification, the water supply use has been assigned because it is reasonable to expect that it may exist in the future in such cases. For stream segments that flow through, or in the vicinity of, municipalities, this conclusion is further justified, since there is a reasonable probability that the use exists or will exist. Where the water supply classification has been opposed, the Commission has evaluated the evidence on a site specific basis, and in many cases the classification has been removed.

V. Water Quality Standards -- Generally

1. The water quality standards for classified stream segments are defined as numeric values for specific water quality parameters. These numeric standards are adopted as the limits for chemical constituents and other parameters necessary to protect adequately the classified uses in all stream segments.

2. Not all of the parameters listed in the "Tables" appended to the Basic Regulations are assigned as water quality standards. This complies with Section 3.1.7(c) of the Basic Regulations.

   Numeric standards have been assigned for the full range of parameters to a number of segments where little or no data existed specific to the segment. In these cases, there was reason to believe that the classified uses were in place or could be reasonably expected, and that the existing water quality was as good as or better than the numeric standards assigned.

3. A numeric standard for the temperature parameter has been adopted as a basic standard applicable to all waters of the region in the same manner as the basic standards in Section 3.1.11 of the Basic Regulations.

   The standard of a 3EC temperature increase above ambient water temperature as defined is generally valid based on the data regarding that temperature necessary to support an "Aquatic Life - Class 1" fishery. The standard takes into account daily and seasonal fluctuations; however, it is also recognized that the 3EC limitation as defined is

only appropriate as a guideline and cannot be rigidly applied if the intention is to protect aquatic life. In winter, for example, warm water discharges may be beneficial to aquatic life. It is the intention of the Commission in adopting the standard to prevent radical temperature changes in short periods of time which are detrimental to aquatic life.

4. Numeric standards for seventeen organic parameters have been adopted as basic standards applicable to all waters of the region in the same manner as the basic standards in Section 3.1.11 of the Basic Regulations. These standards are essential to a program designed to protect the waters of the State regardless of specific use classifications because they describe the fundamental conditions that all waters must meet to be suitable for any use.

   It is the decision of the Commission to adopt these standards as basic standards because the presence of the organic parameters is not generally suspected. Also, the values assigned for these standards are not detectable using routine methodology and there is some concern regarding the potential for monitoring requirements if the standards are placed on specific streams. This concern should be alleviated by Section 3.1.14(5) of the Basic Regulations but there is uncertainty regarding the interpretation of those numbers by other entities. Regardless of these concerns, because these constituents are highly toxic, there is a need for regulating their presence in State waters. Because the Commission has determined that they have uniform applicability here, their inclusion as basic standards for the region accomplishes this purpose.

5. In some cases, the numeric water quality standards are taken from the "Tables" appended to the Basic Regulations. These table values are used where actual ambient water quality data in a segment indicates that the existing quality is substantially equivalent to, or better than, the corresponding table values. This has been done because the table values are adequate to protect the classified uses.

   Consistent with the Basic Regulations, the Commission has not assumed that the table values have presumptive validity or applicability. This accounts for the extensive data in the record on ambient water quality. However, the Commission has found that the table values are generally sufficient to protect the use classifications. Therefore, they have been applied in the situations outlined in the preceeding paragraph as well as in those cases where there is insufficient data in the record to justify the establishment of different standards. The documentary evidence forming the basis for the table values is included in the record.

6. Cases in which water quality standards reflect these instream values usually involve the metal parameters. On many stream segments elevated levels of metals are present due to natural or unknown causes, as well as mine seepage from inactive or abandoned mines. These sources are difficult to identify and impractical or impossible to control. The classified aquatic life uses may be impacted and/or may have adjusted to the condition. In either case, the water quality standards are deemed sufficient to protect the uses that are present.

7. Some segments encompass great distances and include a large number of tributaries. Some tributaries are perennial streams which legitimately are aquatic uses. However, within the segment are dry gulches which would not be classified as aquatic life. Subsequent reviews should seek to separate the aquatic classified streams from the non-aquatic dry gulches. In some of those segments containing dry gulches, no aquatic numeric standards were adopted.

   Criteria for distinguishing between dry gulches which were classified as aquatic and those which were non-aquatic were as follows: If the aquatic life use exists during times when flow occurs, then the aquatic life use applies, but where no data was presented concerning conditions during flows, then vegetation, slope of dry stream bed, nature of hydrologic conditions (i.e., predominance of sudden precipitation events), condition of the streambed, and proximity to perennial streams were considered in reaching a conclusion.

   In those cases where there was no data for a particular segment, or where the data consists of only a few samples for a limited range of parameters, "table values" were generally recommended. Data at the nearest downstream point was used to support this conclusion. In some cases, where the limited data indicated a problem existed, additional data were collected to expand the data base. Additionally, where there may not be existing data on present stream quality, the Commission anticipates that if necessary, additional data will be collected prior to a hearing required by C.R.S. 1973, 25-8-204(3), as amended.

   There was very little data available particularly for metal parameters for some portions of the following segments: 1/4, 2/9, 3/11, 3/14, 4/15, 4/17, 4/20, 5/21, 5/22, 6/3, 6/5, 6/6, 7/8, 7/9, 7/10, 7/11, 9/19, 10/22, 10/23, 11/5, 11/6, 14/14, 14/17, & 15/18.

8. Where endangered species spawning and young of the year rearing were identified, the Commission considered using the High Quality designation. However, this designation was not adopted at this time since, in the case of the Colorado Squawfish, the Humpbacked Chub, and the Razorback Sucker maintaining existing quality has not been established to date as necessary to maintaining the endangered species. The aquatic classification establishes existing parameter conditions and should provide sufficient protection of the aquatic life use so as to maintain these species

9. In most cases in establishing standards based on instream ambient water quality, a calculation is made based upon the mean (average) plus one standard deviation (x + s) for all sampling points on a particular stream segment. Since a standard deviation is not added to the water quality standard for purposes of determining the compliance with the standard, this is a fair method as applied to discharges.

   Levels that were determined to be below the detectable limits of the sampling methodology employed were averaged in as zero rather that at the detectable limit. This

moves the mean down but since zero is also used when calculating wasteload allocations, this method is not unfair to dischargers.

Metals present in water samples may be tied up in suspended solids when the water is present in the stream. In this form they are not "available" to fish and may not be detrimental to aquatic life. Because the data of record does not distinguish as to availability, some deviation from table values, and the use of x + s, is further justified because it is unlikely that the total value in all samples analyzed is in available form.

A number of different statistical methodologies could have been used where ambient water quality data dictates the standards. All of them have both advantages and disadvantages. It is recognized that the x + s methodology also has weaknesses, in that the standard may not reflect natural conditions in a stream 100 per cent of the time, even though the use of x + s already allows for some seasonal variability. However, the use of this methodology is justified since it provides a meaningful index of stream quality for setting stream standards.

Since the x + s methodology is an index of existing conditions and is not a classical statistical description, use of a methodology which eliminates outlyers, i.e. unusually high or low data which may be in error, is acceptable in approximating an average condition. The practice of eliminating only extremely high recorded data points and not low recorded values may result in erring on the side of safety. High recorded values may be due to sampling, laboratory, or recording error. To a limited degree the high values may be due to seasonal variation in the data base.

Several parties questioned whether Chauvenet's criterion was being used properly and questioned the appropriateness of not including outliers in the mean plus 1 standard deviation calculation. The Commission finds that both practices are appropriate in their application.

Chauvenet's criterion is not being used to reject data. Chauvenet's criterion is being used to identify suspicious data points which need to be evaluated further to determine if the data represents typical stream conditions. Data identified by Chauvenet's criterion are only rejected as outliers if it can be shown that: 1) The sample contained high suspended solids or turbidity, indicating a typical spring run-off condition; 2) The sample was taken at a time when a radical change in stream flow was present, indicating an atypical storm event; or, 3) The sample resulted in an unexplained value radically beyond two standard deviations and was an isolated data point, suggesting a sampling, laboratory, or reporting error.

Data not included in the mean plus 1 standard deviation calculation are not rejected from the data base. Should future testing indicate that these high values are typical results for a particular stream segment. then these data points will be included in the ambient level calculation.

It should be noted that setting stream standards (above table values) involves a multi-faceted methodology. Each part of this methodology is founded on certain assumptions: Some of these are conservative in nature, some are not. For example a conservative assumption is the rejection of outliers, an unconservative assumption is the x + s calculation which allows for the standard to be exceeded about 15% of the time. This methodology as a whole is needed to protect the beneficial uses of Colorado's water. To relax only one aspect of this methodology without adjusting the counterbalancing assumptions could seriously threaten the beneficial uses of State Waters. No testimony was presented to the Commission which evaluated how the inclusion of outliers would impact aquatic life if the remainder of the methodology remained unchanged.

The Commission recognizes that the x + s methodology departs from formal statistical techniques. However, since this methodology is intended only to produce an index of existing stream values which are present 85% of the time, a departure from formal statistical techniques is acceptable. Again, the methodology as a whole represents a balance of assumptions which cannot be forced into a formal statistical approach because of the complexities of the instream chemicals values and biological response relationships.

It was suggested that the stream data be "Normalized" prior to the application of Chauvenet's criterion. The Commission finds that this approach is infeasible for two reasons: 1) Much of the water quality data is not distributed in a "Log-Normal" fashion which precludes it from being normalized; and, 2) The normalization process cannot legitimately be applied to a data set that contains zeros, as water quality data does.

Finally, the fairness and consistency of the use of any methodology in setting standards must recognize the manner in which the standards are implemented and enforced. It is essential that there be consistency between standard setting and the manner in which attainment or non-attainment of the standards is established based on future stream monitoring data. In addition the Division must take this methodology into account in writing and enforcing discharge permits.

10. No water quality standards are set below detectable limits for any parameter, although certain parameters may not be detectable at the limit of the standards using routine methodology. However, it must be noted that stream monitoring, as opposed to effluent monitoring, is generally not the responsibility of the dischargers but of the State. Furthermore, the purpose of the standards is to protect the classified uses and some inconvenience and expense as to monitoring is therefore justifiable.

Section 3.1.15(5) of the Basic Regulations states that "dischargers will not be required to regularly monitor for any parameters that are not identified by the Division as being of concern". Generally, there is no requirement for monitoring unless a parameter is in the effluent guidelines for the relevant industry, or is deemed to be a problem as to a specific discharge.

11. The dissolved oxygen standard is intended to apply to the epilimnion and metalimnion strata of lakes and reservoirs. Respiration by aerobic micro-organisms, as organic matter is consumed, is the primary cause of a natural decrease in dissolved oxygen and anaerobic conditions in the hypolimnion. Therefore, this stratum is exempt from the dissolved oxygen standard.

12. Where numeric standards are established based on historic instream water quality data at the level of x + s, it is recognized by the Commission that measured instream parameter levels might exceed the standard approximately 15 percent of the time.

13. It is the Commission's intention that the Division implement and enforce all water quality standards consistent with the manner in which they have been established.

14. Hardness/Alkalinity

Where hardness and alkalinity numbers differed, the Commission elected to use alkalinity as the controlling parameter, in order to be consistent with other river basins and because testimony form the Division staff indicated that in most cases alkalinity has a greater effect on toxic form of metals than does hardness.

VI. Water Quality Standards for Unionized Ammonia

The Commission retains the use of unionized ammonia as a parameter rather than total ammonia because unionized ammonia is the toxic portion. Furthermore, the relationship of total ammonia as a function of temperature and pH is recognized.

VII. Water Quality Standards for Uranium

Given the threat that radioactivity from uranium may pose to human health, it is advisable to limit uranium concentrations in streams to the maximum extent practicable. For segments assigned a water supply classification the Commission has adopted a standard of 40 pCi/l or natural background where higher, for the following reasons:

1. 40 pCi/l generally reflects background concentrations of uranium that may be found in streams in Colorado and therefore this amount approximates routine human exposure.

2. The statistical risk of human health hazards is small at 40 pCi/l.

3. 40 pCi/l is an interim level, established now pending the outcome of further studies currently underway.

Data introduced in the record on the establishment of a standard of 10 pCi/l were rejected. The Commission felt that it was more appropriate to reexamine the uranium standard on a Statewide basis with more public participation at a future date.

VIII. Water Quality Standards for Cyanide

The Commission acknowledges that total cyanide is to be used in State Discharge Permits until a method is authorized by EPA for measuring free cyanide, even though free cyanide is the parameter of concern.

IX. Water Quality Standards for Metals

Moreover, the Commission recognizes that the overwhelming majority of available water quality data was obtained using total digestion and total recoverable laboratory analytical techniques.

In deciding to retain the total recoverable laboratory analytical technique as appropriate for the purpose of setting stream standards, the Commission noted that the standards setting process consists of many elements that result in a balanced water quality control program. These various elements include laboratory methodologies, stream classifications, statistical analysis of data, mean plus standard deviation, data screening including Chauvenet's criterion, discharge permit monitoring procedures and many others. Changing any of these elements would require total reevaluation of the entire standards setting process and water quality management procedures requiring a much broader base of evidence than is available in the Lower Colorado hearing record.

X. Linkage of classifications and Standards

The Commission holds that the classifications which it adopts and the standards it assigns to them are linked. Disapproval by EPA of the standards may require reexamination by the Commission of the appropriateness of its original classification. The reason for the linkage is that the Commission recognizes that there is a wide variability in the types of aquatic life in Colorado streams which require different levels of protection. Therefore, the numbers were chosen in some cases on a site specific basis to protect the species existing in that segment. If any reclassification is deemed a downgrading, then it will be based upon the grounds that the original classification was in error.

XI. Economic Reasonableness

The Commission finds that these use classifications and water quality standards are economically reasonable. The Commission solicited and considered evidence of the economic impacts of these regulations. This evaluation necessarily involved a case-by-case consideration of such impacts, and reference is made to the fiscal impact statement for this analysis. Generally, a judgment was made as to whether the benefits in terms of improving water quality justified the costs of increased treatment. In the absence of evidence on economic impacts for a specific segment, the Commission concluded that the regulations impose no unreasonable economic burden.

XII. Classifications and Standards - Special Cases

1. Page 1, Segment 1

   Through its testimony, the City of Craig expressed concern that it would be required to provide advanced waste treatment (AWT) to meet proposed standards for this segment. The Commission found that there was dilution flow sufficient to preclude an AWT requirement at this time.

2. Page 1, Segments 2

   The Commission recognized that that portion of the segment which is in the Dinosaur National Monument has been proposed for Federal Wild and Scenic designation and that the segment provides a spawning habitat for the Colorado Squawfish, an endangered species. Thus, the Commission chose not to classify the segment as high quality feeling that the proposed classifications adequately protected the existing uses.

3. Page 1, Segment 3(a), 3(b), and 3(c)
   (proposed as page 1, segment 3)

   The issue generated by the testimony was the presence of aquatic life and the habitat necessary for fish spawning. It was testified that spawning did not occur in segment 3(a). Portions of these segments were gulches or dry washes not suitable for use by aquatic life. In the physical and biological evaluation of tributaries the Commission found steep sage brush covered slopes. The drainage ways are generally dry and covered by stands of sagebrush and various grass species. The Commission differentiated those gulches which are dry from those which should be classified aquatic due to flow. The criteria of frequency and duration of flow were used by the Commission in determining at what point limited aquatic life existed for which a classification should be assigned. Resegmentation enabled the Commission to be responsive to the testimony of Axial Basin Ranch, Colowyo Coal Company, Trapper Mining, Inc., and Utah International, Inc., in classifying portions of this segment for aquatic life while not so classifying other portions.

4. Page 2, Segment 7

   The W. R. Grace Company, a partner in the Colowyo Company urged in its testimony that the segment not be classified for water supply because of the impact such classification could have on future coal mining. It was testified that the City of Craig was a growth area but that no water supply use was in place nor did the Division have any record of conditional water decrees. Based on this evidence, the Commission did not classify this segment for water supply use and modified the numeric standards accordingly.

5. Page 3, Segment 12(a) and 12(b)
(proposed as page 2, segment 12)

The Commission was pursuaded by the testimony of the Trapper Mining Company to segment out Ute and Castor Gulches as 12(b) because they are dry steep drainages of the Williams Fork ridge. They were classified only for agricultural use. Segment 12(a) remains as proposed.

6. Page 3, Segment 13(a) and 13(b)
(proposed as page 3, segment 13)

This segment was resegmented at the Hamilton Bridge on County Highway 13/789 because it provided a landmark on the segment where temperature changes could occur in a transitional reach. This conclusion was based on observations of cold water fish species above the bridge and warm water species below the bridge. Resegmentation enabled the Commission to assign a cold water aquatic life classification above the bridge and a warm water aquatic life classification below the bridge.

7. Page 6, Segment 2

The Commission classified this segment high quality class 1 to provide protection for the Colorado River Cutthroat Trout, a Colorado endangered species. Testimony indicated the segment is a critical spawning area and a resource area for recovery of eggs.

8. Page 7, Segment 7

The Commission found from evidence that though the issue of a seasonal standard was raised that two data outlyers were insufficient to warrant such a qualifier. Bar 70 Enterprises Inc., which did not testify but did submit evidence and a summation indicated it intended to use the segment as a water supply source. Their concern was whether the .02 mg/l unionized ammonia would create a problem. The Commission determined that it would not if there was no significant change in the water flow in the stream. There was no evidence of water flow change. It appeared to the Commission that for both the Town of Meeker and Bar 70 Enterprises Inc., there does not appear to be any fiscal impact due to the aquatic life class 1 classification.

9. Page 7, Segment 12

For several parameters collected September 11, 1975, the concentrations were deemed to be unusually high and were eliminated. It was felt by the Commission that a recording error had occured.

10. Page 8, Segment 13(a) and 13(b)
(proposed as page 7, segment 13)

Yellow and Spring Creeks and their tributaries were segmented out as 13(b) due to their limited flow and testimony that they contained no aquatic life. Neither aquatic life nor recreation classifications were assigned to 13(b).

11. Page 8, segment 14(a) and 14(b)
(proposed as page 7, segment 14)

There is no hardness or alkalinity data available for segment 14(a). The nearest station is in the next segment downstream where alkalinity is recorded in the range of 300 to 400. 400 plus is the combined alkalinity value from all stations in 14(b). Resegmentation was at State Highway 13 separating segment 14(a) from 14(b). The Emily Oldland diversion separating segment 14(b) from segment 15 is a barrier to fish migration.

12. Page 8, Segment 15

It was testified that Cathedral Bluffs Oil Shale Company was generally not releasing their discharge to the stream. Depending of the time of year they were either discharging down No-Name Gulch; sprinkling on the tract for evaporation; or using underground injection. This practice was followed because the Company felt that it must take these actions to meet its discharge permit limitations. The Commission found from the testimony that protection was being given aquatic life at the expense of agricultural use. It was testified that the fish in the segment were escapees from agricultural ponds and were not a reproducing population that was fished. Because of its greater economic value, the Commission found agriculture to be a higher and more beneficial use in this segment than was aquatic life. Therefore, the Commission modified the numeric standards for ammonia, cadmium, boron, selenium and alkalinity to levels appropriate for the agricultural use in place. The balance of the numbers were set consistant with the 400 alkalinity level.

13. Pages 8 & 9, Segment 16(a) and 16(b)

Segment 16(b) is composed of tributary streams not previously classified. The Commission recognized these segments in the classification system but chose to identify them as not classified. The Commission found that in the light of the direction it received in Senate Bill 10 there is no requirement that it classify every creek bed. In this instance the Commission has examined these tributaries, listed them in the segment description, and said they were not classified. This exempts them from the broad blanket of tributaries. The Commission found no fish in the segment and an extensive algal community present prior to the industrial use. The Commission determined not to classify these tributaries to avoid creating an unreasonable adverse economic impact on Cathedral Bluffs Shale Oil Company.

Because of the industrial nature of the lease tract none of the uses within the table of classifications are likely to occur nor are they economically justified. The Commission found these tributaries to be basically dry gulches.

14. Pages 12 & 13, Segment 11(a) through 11(f)
(proposed as page 10, segment 11)

The upper portions of Parachute Creek were resegmented 11(a) through 11(f) in order to address specific issues as follows: 11(a) contained portions of streams about which the testimony supported the assigned classifications; 11(b) the Division supported and evidence substantiated that these streams were intermittent. Evidence further substantiated an agricultural use in these segments or at least immediately downstream; 11(c) evidence presented did not support any of the beneficial use classifications listed in the basic regulations as being appropriate for this segment because the Exxon industrial use of the property precludes such uses. No fishery exists or is likely to exist. Algal life existed but the industrial use on the property precludes any aquatic life classification; 11(d) recreation, class 2, was proposed for this segment but was not assigned by the Commission because evidence presented indicated that the major portion of this segment is on private property and public access is prohibited. Water supply was proposed but not assigned because testimony indicated no water supply uses exist in this segment nor could reasonably be expected to occur. The Division recommended and testimony supported the assignment of agriculture and cold water aquatic life, class 1; 11(e) when water is there, aquatic use is there. The stream bed supports aquatic use during spring runoff in the April, May, and June period. Because of aquatic use above and below this segment the Commission expects movement of fish into this stream segment. Because of potential economic impact upon Union Oil Company's shale disposal waste pile, no numeric standards other than minimum standards for this segment were adopted. Discharge may not in fact occur in this segment. The Mined Land Reclamation Board could approve structures over or beside the streambed to protect the stream flow sufficient to protect downstream segments aquatic life, class 1 use; should this segment be used for waste disposal such that the aquatic use no longer occurs even during spring runoff, then a redesignation will be appropriate.

No recreation use was adopted because no access has been historically allowed. 11(f) testimony indicated perennial flow and aquatic life including trout present within this segment.

15. Page 13, Segment 13

Clear Creek was moved to this segment from segment 15. There was testimony that recreation classification not be assigned. However, the Commission determined from other testimony that the extent of public access to this segment warranted a recreation classification.

16. Page 14, Segment 16(a), 16(b) and 16(c)
(proposed as page 11, segment 16)

This resegmentation was to accomodate alkalinity differences between these reaches of the stream.

FISCAL IMPACT STATEMENT

Stream Classifications and Water Quality Standards for State Waters of the Lower Colorado Basin below Glenwood Springs; the Yampa River Basin below Elkhead Creek; the Green river; and the entire White River drainage including all tributaries and standing bodies of water associated with those rivers in all of Moffat, Rio Blanco, Garfield, and portions of Mesa and Routt Counties.

I. INTRODUCTION

The Water Quality Control Commission is charged with he responsibility to conserve, protect, and improve the quality of state waters pursuant to C.R.S. 1973, 25-8-101 et seq.

The Commission is further empowered and directed to classify waters of the State and to promulgate water quality standards for any measurable characteristic of the water in order to protect both the uses in place and those that can be reasonably expected in the future. (25-8-203 and 25-8-204) The above-titled document assigns use classifications and standards for the state waters in the listed areas in accordance with the "basic regulations" adopted May 22, 1979.

The measurable fiscal impacts which may be caused by these regulations are as follows:

- Cost of construction due to requirements for increased levels of treatment by municipal waste treatment facilities;

- Cost of construction due to requirements for increased levels of treatment by industrial/commercial waste treatment facilities;

- Cost of Operation and Maintenance associated with increased levels of treatment required of municipalities;

- Cost of Operation and Maintenance associated with increased levels of treatment required of industrial and commercial dischargers;

- Cost of instream monitoring and laboratory analysis for new parameters added by the standards.

Dischargers will not be required by the adoption of these regulations to do stream monitoring. The state, federal and local agencies now doing instream monitoring will have

some increased cost; however, any additional frequency should be done to improve state surveillance and would be needed regardless of standard changes.

The stream classifications and standards adopted by the Commission will protect the water uses primarily through control of point source pollution. Nonpoint source pollution will be controlled primarily through management practices which are in existence or which will be implemented in the future. Future management practices need careful consideration and may be the result of 208 area-wide wastewater management plans developed by regional planning agencies and being updated annually. These plans involve local governments with general assistance from state government. Some of the possible nonpoint source pollution may be controlled through "Control Regulations" yet to be promulgated by the Commission. These types of controls could involve runoff from construction, mining activities, and urban areas. It is not certain what controls are needed at this time and there is no way that possible costs can be identified at this time.

Persons who benefit from standards which will protect existing and future anticipated uses can be identified as all persons benefiting from recreation, municipal water supply, and agriculture. These benefits are directly economic for agriculture, industry, and municipalities whose health benefit costs are reduced by having clean water, and are both economic and nonquantifiable for some uses such as fishing, recreation, and the aesthetic value of clean waters. Furthermore, benefits will result from human health protection and lack of debilitating disease. Figures have been developed for a recreation/fishing day which can be applied to that aspect of a water use; however, figures which have been developed for total recreation/fishing day uses have been developed statewide and could not be applied region-by-region or stream-by-stream.

The uses of water in this region are adequately protected by these standards. Most municipal treatment facilities and industrial facilities are currently adequate, or are already being upgraded, in order to meet previous requirements. Any additional facilities or expansions in this region will generally be caused by increased capacity required because of population growths or industrial enlargement. Industries are required by federal statute to meet effluent limitations described as "Best Available Technology Economically Achievable" (BATEA) by 1983 or 1984. For most major industries in this region, the water quality standards should not require treatment beyond these limitations.

The fiscal impact of any regulatory decision must take into account only the incremental costs explicitly associated with the regulations as finally promulgated. Costs and expenditures associated with the regulations as finally promulgated. Costs and expenditures associated with the status quo, regulations of other regulatory agencies, or regulations already in effect should not be included in an assessment of the fiscal impact of the Lower Colorado Basin classifications.

In addition, a distinction must be made between actual expenditures or dislocations that will be immediately or unavoidably necessary upon promulgation of these classifications and standards, and those costs which are speculative in nature. In keeping with concepts of

"Expected Value", it is proper for the Commission to place more emphasis on definite impacts.

With the passage in 1981 of Senate Bill 10, amending the Colorado Water Quality Control Act, it became incumbent upon the Water Quality Control Commission to consider the economic impact of their decisions with more emphasis placed upon the concept of the "Economic Reasonableness". Charged with such a mandate, the Commission was quite sensitive to the objective of minimizing the socio-economic "price" of clean water while adhering to the anti-degradation policy that water quality be preserved and protected in all cases, and improved where feasible.

The analysis and data which follows is derived primarily from testimony and exhibits offered by interested parties during the course of the rulemaking hearings. This was supplemented by staff estimates of potential impacts upon other major entities who and private sectors. Except for instances where explicit testimony was given by interested parties at the rulemaking hearing, no attempt has been made to identify future development costs as this type of data is not readily available and estimation techniques are dependent upon many highly subjective assumptions. Finally, to fully illustrate the degree to which costs were minimized where possible, two tables for each sector are presented. The first table itemizes the impacts of the classifications as proposed while the second table depicts the impacts of the classifications as finalized.

II. FISCAL IMPACT: PUBLIC SECTOR

The primary fiscal impact to the public sector in this basin involves the potential domestic wastewater treatment costs associated with the stream classifications and water quality standards. Other costs, such as tax and employment base impacts due to forgone industrial development opportunities or mitigated growth potentials, can be theoretcially postulated but are difficult to quantify. Generally, it is recognized that higher tap fees, service charges or property taxes associated with increased treatment costs can potentially affect industrial siting decisions. However, this is not as significant as increased levels of treatment that may be required of industries if they are dischargers. While the Commission acknowledges the existence of such potentials, the lack of firm evidence and actual tax base impact estimates make deliberative assessment impractical.

In this basin the Commission acknowledged eleven municipalities that could potentially incur an economic impact: The Towns of Craig, Grand Junction, Monument Meadows, Fruita, DeBeque; and the following special districts: Ute Water Conservancy District, Clifton Sanitation District, Collbran Wastewater, Panorama Improvement District, Meeker Water and Sanitation District, Bar 70 Proposed Sanitation District. In each case the ammonia standard was the factor of concern. It is the Commission’s finding that for each of these dischargers, the flow of the receiving waters is sufficient to provide adequate protection from advanced wastewater treatment (AWT) requirements. Although future growth in this region may require AWT considerations, there was no specific evidence to suggest when this could be expected and what final impact would result. The Commission finds that sufficient

protection exists in sections 25-8-204(3) and 25-8-205(6) of the Colorado Water Quality Control Act covering AWT and variance provisions to address future impacts if and when they develop.

In summary, public participation and careful deliberation have resulted in regulations that will protect the quality of the waters of the Lower Colorado River Basin through classifications and standards that are economically reasonable in terms of the costs to the municipalities lying within the region.

III. FISCAL IMPACT: PRIVATE SECTOR

Eight private sector entities identified potential economic impacts as a result of the proposed standards in this basin: Union Oil Company, Exxon, Cathedral Bluffs, Axial Basin Ranch Coal Company, Colowyo Coal Company, Trapper Mining Company, Utah International Inc., and Talboy's Trailer Park. Other parties could be potentially affected at some time in the future, but such impacts are unlikely or hypothetical and have not been quantified.

Talboy's Trailer Park is a private-sector domestic discharge that should not be impacted by these classifications and standards as the receiving waters have a high flow.

Union Oil Company was concerned with an aquatic life classification for a segment of East Fork Creek. Testimony indicated that such a classification could potentially force them into several alternative plans regarding the disposal of spent oil shale. Cost figures were not distinct except in terms of order of magnititude. The Commission found that the indistinct nature of the cost evidence precluded specific analysis of the economic impact. There was no clear way to assign all or part of the costs explicitly to water quality issues nor was there clear indication of the incremental impact of the regulations. The Commission finds at this time that a seasonal qualifier for this segment is an economically reasonable way in which to address the concerns of Union Oil Company until such time as evidence is forthcoming identifying the specific incremental costs associated with their proposed project and the regulations as finally adopted.

Exxon was concerned that an aquatic life classification for parts of Davis Gulch and Middle Fork that lies wholly within the boundaries of their property. It was their contention that the proposed use classifications for these segments to prevent economic costs to protect nonexistant uses, the Commission left segment 11-c unclassified. This was found to be the most economically reasonable manner in which to treat this heavily impacted private property.

Cathedral Bluffs was concerned with the use classifications associated with portions of the Piceance drainage. It was their argument that the majority of the basin did not support aquatic life in any significant way and an aquatic life classification would force them to continue a no-discharge mode of treatment. The commission found that the classification was perhaps marginally appropriate but that the metals standards associated with it would cause a serious hardship to agriculture due to Cathedral Bluffs' method of treatment. The

Commission found the most economically reasonable action would be to recognize agriculture to be a higher and more economically valuable use and to modify the standards for several metals to allow for Cathedral Bluffs to discharge their process waters. This was believed to have a negligible impact on the aquatic use of the stream while allowing agriculture users access to water that was previously wasted through evaporation.

The Axial Basin Ranch Company was concerned with a water supply classification that was believed by them to pose a potential for impacting the future of coal development within the region. Little Bear Creek was found by the Commission to have quality sufficient for water supply but considered that there was no water supply in place and the Town of Craig has several water supply options if they grow. There were no water rights nor decrees that would lead the Commission to believe that a water supply use would be reasonably expected in the foreseeable future. Thus, the Commission found that the most economically reasonable course would be to drop the water supply classification in favor of future coal development.

Utah International Inc., Axial Basin Ranch Company, Trapper Mining Company, and Colowyo Coal Company were concerned that the aquatic life classification for all of the tributaries to the Upper Yampa River may not be accurate. Several of the tributaries were found to be primarily dry gulches that would only carry water during storm events and spring runoff. Resegmentation allowed the Commission to retain aquatic life classifications where appropriate and remain responsive to the concerns of the coal companies. There was no specific testimony detailing what economic impact this would prevent but it was generally assumed that it would result in savings of potential treatment. The Commission found it reasonable to protect against unspecified potential costs in this case because there was no corresponding beneficial use to protect.

Through evaluation of expert testimony and careful deliberative consideration, the Commission has taken steps to minimize the economic impact of these classifications and standards upon the private sector. As adopted, these classifications and standards will have a negligible impact upon the private sector while protecting current and achievable beneficial uses.

IV. CONCLUSION

It is important to add that the Commission took several steps in many drainages to protect rare, threatened and endangered species. The Colorado River Cutthroat was specifically protected by a high quality designation on Northwater and Trapper Creeks as well as Trappers Lake. The Commission found these segments to be critical spawning sites and considers the protection of this species to be important to the public at large. The Commission also heard testimony regarding the Humpback Chub, the Bonytail Chub, and the Colorado Squawfish. These last three species are on the national endangered species list. The Commission finds the protection of these species to be important to the public and was particularly sensitive to the testimony regarding what would be necessary to protect them. One in particular, the Colorado Squawfish, is found only in Colorado and portions of

Utah. The Commission believes that it has accorded sufficient protection to these species through the classifications and standards it has adopted, and that this action is economically reasonable in that no discharger was found to face the potential of a cost impact. Considering the irrepairable nature of extinction,
the Commission finds the preservation of these species to be of significant value to the public.

It is concluded that the Commission has strenously considered the economic factors at issue in this basin and that this regulation is economically reasonable both in terms of potential costs that may result , and in terms of the beneficial uses to be protected.

37.11 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE SEPTEMBER 12, 1986:

The provisions of 25-8-202(1)(a)(b) and (2); 25-8-203; and 25-8-204, C.R.S. provide the specific statutory authority for consideration of the attached regulatory amendments and also the statements of Basis and Purpose and Fiscal Impact in compliance with 24-4-103(4) C.R.S.

BASIS AND PURPOSE:

At the triennial review conducted April 7, 1986, no recommendations were received from the public. Non-substantive amendments were recommended by the Water Quality Control Commission to correct clerical errors. In adopting these corrections the Commission considered the economic reasonableness of its action. Except as specified, the corrections in no way change the classifications and numeric standards originally adopted by the Commission.

FISCAL IMPACT STATEMENT:

The Water Quality Control Commission found that the clerical corrections to its regulation 3.7.0 have no fiscal impact.

37.12 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE; SEPTEMBER, 1990 HEARING ON SEVERAL SEGMENTS:

The provisions of 25-8-202(1)(a), (b) and (2); 25-8-203; 25-8-204; and 25-8-402 C.R.S. provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted, in compliance with 24-4-103(4), C.R.S., the following statement of basis and purpose.

Basis and Purpose:

First, the Commission has adopted new introductory language for the tables in section 3.7.6 The purpose of this language is to explain the new references to "table value standards" (TVS) that are contained in the Tables. These provisions also include the adoption of new hardness equations for acute and chronic zinc standards throughout the basin. Based on information

developed since the "Basic Standards" were revised, these new equations have been determined to represent more appropriate zinc criteria. New information contained in a 1987 EPA zinc criteria document indicates Colorado's zinc criteria is overly restrictive, especially at hardness in the range of 50 to 200 mg/l. Adoption of the Colorado zinc criteria as site-specific TVS standards may potentially cause undue treatment costs to dischargers who would be regulated by those standards until they could be adjusted through a section 207 hearing or during the next round of basin hearings.

The existing criteria for zinc contained in the "Basic Standards" was developed by the Commission's Water Quality Standards and Methodologies Committee. At the time of development, the EPA zinc criteria document was not available. Because of some limited data indicating a consistent chronic toxicity level at water hardnesses of 200 mg/l or less, the Commission adopted a chronic criteria of 45 ug/l for hardness of 0 to 200 mg/l. This is much more stringent than EPA criteria which, as an example, specifies chronic zinc levels of 59 ug/l and 190 ug/l at hardness of 50 mg/l and 200 mg/l, respectively.

The Commission also has adopted additional organic chemicals standards for certain aquatic life segments. The standards added in section 3.7.5(2) (e) are based on water and fish ingestion criteria contained in the U.S. Environmental Protection Agency's Quality Criteria for Water, 1986 and updates to this document through 1989, which is commonly referred to as the "Gold Book". The standards are being applied to all class 1 aquatic life segments. The standards are based on a 10^{-6} risk factor.

The application of these standards to waters where actual or potential human ingestion of fish is likely is important in assuring that Colorado achieves full compliance with the toxics requirement of section 303(c) (2) (B) of the federal Clean Water Act. It is reasonable to assume that most Class 1 aquatic life segments, because of their variety of fish species and/or suitable habitat, have the potential for fishing and the resultant human consumption of the fish or other aquatic life.

One other general issue should be addressed at the outset. Several parties to this proceeding submitted documents expressing concern regarding the adoption of high quality 2 designations because of potential impact on water rights held by these entities. The Commission transmitted these documents to the State Engineer and the Colorado Water Conservation Board to solicit any comments that they might have. In its transmittal letter, the Commission stated its preliminary assessment that the proposed adoption of high quality 2 designations did not present the potential to cause material injury to water rights.

The high quality designation merely indicates that an antidegradation review will be required for certain activities. In its regulations, the Commission has specifically provided that in an antidegradation review "any alternatives that would be inconsistent with section 25-8-104 of the Water Quality Control Act shall not be considered available alternatives." If an issue should arise as to whether the antidegradation review criteria prohibiting material injury are being applied correctly to a specific proposed activity, that issue would be considered during that

specific review process, including through consultation with the State Engineer and Water Conservation Board.

The Commission received a letter back from the State Engineer, stating his agreement with the Commission's preliminary assessment. No letter was received from the Water Conservation Board, although the Board had previously indicated its agreement with a similar conclusion when this issue was raised in an earlier rulemaking hearing. Upon consideration of all of the available information, the Commission has determined that the adoption of high quality 2 designations in this proceeding does not cause material injury to water rights.

The other changes considered and adopted are addressed below by segment.

A. Overview of Segment-Specific Changes

Two principal issues were in controversy for several of the segments addressed in this hearing. The most controversial was whether to apply a high quality 2 designation to certain waters. In several instances, designations proposed by the Water Quality Control Division were opposed on the basis that there was inadequate information to support such a designation. The three most common challenges to the adequacy of the information were: (1) detection limits for some data were too high to determine whether ambient quality was better than "table values;" (2) for some segments there was not adequate data for some or all of the twelve parameters referenced in section 3.1.8(2) (b) (i) (C); (3) for some segments the sample location(s) of available data were too limited to generalize the results to the whole segment.

The commission explicitly considered establishing minimum data requirements when it adopted the current antidegradation regulation, and consciously rejected that option. Rather, the Commission recognized that it would be necessary to rely on best professional judgment to determine what constitutes representative data in a specific situation. These issues are not new, or unique to high quality designations. The Commission has for years been required to make water quality classification and standards decisions in the absence of perfect information. Requiring substantial, recently acquired data for all parameters from multiple locations in each segment before establishing high quality designations would assure that very few waters in Colorado would receive this protection for many years to come. As a policy matter, the Commission has determined that high quality designations may appropriately be established based on a lower threshold of available data than that suggested by several parties to this proceeding.

The Commission also notes that having adequate information upon which to base a high quality designation is not dependent solely on the availability of specific data for a particular segment. Relevant information may include data from downstream segments, comparison of available data with that for similar streams, and information regarding the presence or absence of activities likely to adversely impact the quality of the segment in question.

Where there is a substantial basis for considering a high quality 2 designation, in the face of some residual uncertainty the Commission has chosen to err in the direction of providing the

protection. This policy decision is strongly influenced by the ease with which designations can be changed if better data is developed in the future. Unlike classifications, downgrading restrictions do not apply to water quality designations. If new site-specific data is developed that demonstrates that a particular high quality designation is improper, it can and should be removed by the Commission.

With respect to detection limits, the Commission has chosen to continue the same policy that it has followed for over ten years--i.e. to treat data reported as below detection limits as being equivalent to zero. While other methodologies have been proposed and may be defensible, the Commission has determined that this approach is reasonable and appropriate. Requiring routine analysis to below table value standard levels for all constituents would substantially increase monitoring costs for the state and the public. Moreover, the Commission believes that the “zero” assumption is fair, so long as it is applied consistently throughout the water quality regulatory system.

Use of zeros in the water quality designation or standard-setting process may marginally err in the direction of increased protection. However, when zeros are used in applying standards to specific dischargers, those dischargers benefit by the assumption that there is more assimilative capacity available in the stream (allowing higher levels of pollutants to be discharged) since the existing pollution is considered to be zero rather than some level between zero and the detection limit.

The second recurring issue addressed for multiple segments in this hearing was whether to establish a recreation class 1 classification wherever a high quality 2 designation is established. The Division proposed this classification change for applicable segments, since the high quality 2 designation indicates that such segments have adequate water quality to support the recreation class 1 use. However, the Commission generally has declined to change the recreation classification from class 2 to class 1 in such circumstances, unless there was also evidence submitted that class 1 uses were present or likely for the waters in question. Unless the use is present or likely, application of use-protection-based water quality standards does not appear appropriate. At the same time, the Commission notes that this approach does not diminish application of antidegradation protection requirements for high quality waters. Where the existing quality is adequate, a high quality 2 designation has been established, requiring antidegradation requirements to be met before any degradation is allowed, even though the recreation classification is class 2.

A related issue is the determination of which uses warrant the class 1 recreation classification. The recreation classification definition in section 3.1.13(1) (a) (i) of the Basic Standards and Methodologies for Surface Water refers to "activities when the ingestion of small quantities of water is likely to occur,” and states that “such waters include <u>but</u> <u>are</u> <u>not</u> <u>limited</u> <u>to</u> those used for swimming.” In the past the Commission often has applied the class 1 classification only when swimming occurs, and not where other recreational uses that may result in ingestion of small quantities of water occur. The Commission now believes it is appropriate for the class 1 classification also to be applied for uses such as rafting, kayaking, and water skiing.

The appropriateness of recreation class 1 versus class 2 classifications was debated for several segments in the Lower Colorado Basin. The Commission has received information regarding actual recreational uses. It has also received substantial input regarding the propriety (or lack thereof) of broadening the application of the class 1 recreation classification, based upon an evolving interpretation of the Basic Standards language. After lengthy discussion, the Commission has decided that it is appropriate as a matter of policy in this proceeding to apply the recreation class 1 classification for all uses that involve a significant likelihood of ingesting water, including but not necessarily limited to rafting, kayaking, and water skiing. In particular, the uses at issue for segments in this basin were kayaking and rafting. The Commission has received substantial testimony that kayaking often results in water ingestion. In addition, the testimony presented in this and prior proceedings, as well as the personal experience of individual Commissioners, indicates that rafting--white water or otherwise--also presents a significant potential for water ingestion.

Section 3.1.6(1) (d) of the Basic Standards and Methodologies for Surface Water requires the Commission to establish classifications to protect all actual uses. Therefore, for waterbodies where rafting and kayaking is an actual use, the recreation class 1 use classification should be applied, since ingestion of water is likely to occur. The Commission sees no reason to distinguish between ingestion that may result from swimming and ingestion that may result from rafting or kayaking. In fact, there has been some testimony indicating that ingestion is more likely to result from the latter activities.

The Commission wishes to emphasize that the action that it is now taking is consistent with the existing definition of class 1 recreation uses. Some of the comments submitted stated or suggested that the action now being taken by the Commission would constitute a "definitional change" that should be addressed only in a review of the Basic Standards and Methodologies for Surface Water. No change in the regulatory definitions of the classifications is being considered or adopted at this time. Rather, the Commission is applying what it believes to be the proper interpretation of the existing definition.

The Commission believes that as a matter of policy it is not necessary or appropriate to wait until the July, 1991 rulemaking hearing regarding the Basic Standards and Methodologies for Surface Water to implement its current interpretation of the class 1 recreation classification. Over the last decade, there have been many instances when arguments and facts presented in basin-specific rulemaking hearings have resulted in an evolving interpretation of the provisions of the Basic Standards and Methodologies for Surface Water. This Commission is not bound by interpretations made by its predecessors in other basin-specific hearings. To the degree that the class 1 recreation classification in the past has not been applied for some existing activities that involve a likelihood of ingesting water, the Commission now believes that such decisions were in error.

This action does not improperly exclude input from entities interested in other river basins. First, the Commission specifically reopened an earlier hearing on the Gunnison Basin and received input from entities not specifically concerned with that basin. This issue has now received extensive consideration in two separate basins. Moreover, the Commission can further modify

its policy if in other basin-specific reviews, or in the upcoming review of the Basic Standards and Methodologies, parties that did not participate in this proceeding bring forth new considerations that the Commission believes warrant a modification in the approach to recreation classifications that is now being adopted. The Commission also does not believe that there was any problem with the notice provided for the specific segments at issue in this hearing. Each of the segments for which the recreation classification is being changed from class 2 to class 1 based on rafting or kayaking uses were proposed to be changed to class 1 in the original hearing notice. Although the basis for this proposal evolved during the hearing, any parties potentially concerned with a recreation class 1 classification were on notice that this change would be considered in this hearing.

In applying the interpretation of the existing recreation class 1 definition that has been described, the Commission is also influenced by the fact that the importance of recreational uses of surface waters in Colorado has increased over the last decade. Testimony in this and prior proceedings indicated that uses such as rafting and kayaking have expanded substantially, and it is therefore even more important that adequate water quality protection now be provided.

Some of the testimony submitted addressed the appropriateness of the current fecal coliform standards that are applied in association with recreation classifications. The Commission believes that the appropriateness of the existing standards can and should be addressed, when and if there is new evidence available indicating that the current standards are not appropriate. However, changes in such standards were not at issue in this hearing. The Commission believes that questions regarding the appropriate numerical standards should not interfere with its obligation to establish appropriate classifications to protect existing uses. If members of the public have information indicating that a different indicator parameter should be used, or that different fecal coliform levels are appropriate for the respective recreation classifications, that issue can and should be considered in the upcoming review of the Basic Standards and Methodologies for Surface Water.

Comment also has been submitted to the Commission expressing concern regarding the potential effect of downgrading restrictions, should the Commission now adopt class 1 recreation classifications for certain waters and later change its views regarding the appropriate approach to recreation classifications. The Commission does not believe that this presents a substantial problem. Downgrading is appropriate only when a use is not in place. So long as the class 1 recreation classification is defined as including activities that involve ingestion, applying that classification to waters where uses involving ingestion are present should not present a downgrading issue in the future. If the Commission at some later date should completely revise its approach to, and definition of, recreation classifications, application of the new system would involve a set of "de novo" determinations, and not questions regarding upgrading or downgrading.

The Commission recognizes that the approach now being adopted may result in increased economic impacts for some dischargers, to meet the class 1 classifications. The evidence that has been submitted to the Commission indicates that in many instances this will not be the case, because state-wide effluent limitations for fecal coliform and chlorine standards to protect

aquatic life will often drive the level of disinfection and dechlorination that are required. Moreover, in some circumstances it may be possible for the Division to consider an expanded use of seasonal effluent limitations that take low flow or high flow circumstances into account. However, irrespective of these considerations, a potential increase in treatment requirements for some dischargers cannot eliminate the Commission's obligation to classify state waters to protect actual uses.

Finally, concern was expressed that the approach now taken by the Commission will result in inconsistency regarding recreation classifications for different waters throughout the state. Anytime a policy interpretation changes or evolves in any significant way, the first time the change is applied to specific state waters there will be some inconsistency among individual water bodies, since site-specific classifications and standards are addressed on a basin-by-basin basis. However, it is the Commission's intention to apply its policy interpretations consistently as individual basins are addressed. This is now the second basin in which this approach has been applied.

B. Aquatic Life Class 1 with Table Values; New High Quality 2 Designations

Lower Yampa/Green River segments 1, 2, 4, 9, 10, 11, 18, 19, 21

White River segments 3, 4, 6, 7, 8, 10, 23

Lower Colorado River segments 1, 5, 7, 15, 16, 18

Numerical standards for metals for these segments have in most instances been based on table values contained in Table III of the previous Basic Standards and Methodologies for Surface Water. Table III has been substantially revised, effective September 30, 1988. From the information available, it appears that the existing quality of these segments meets or exceeds the quality specified by the revised criteria in Table III, and new acute and chronic table value standards based thereon have therefore been adopted. There are also some of these segments whose previous standards were based in part on ambient quality, since their quality did not meet old table values based on alkalinity ranges. However, these segments generally have much higher hardness than alkalinity, and the new table values (based on hardness-dependent equations) are now appropriate as standards.

Second, review of available data and existing uses indicates that Yampa/Green River segments 1 and 2, White River segment 7, and Lower Colorado segment 1 are appropriate to be upgraded to Recreation class 1 with a corresponding fecal coliform standard of 200 MPN/100 ml.

Third, a High Quality 2 designation has been established for each of these segments. Generally for these segments, the best available information in each case indicates that the existing quality for dissolved oxygen, pH, fecal coliform, cadmium, copper, iron, lead, manganese, mercury, selenium, silver and zinc is better than that specified in Tables I, II, and III of the Basic Standards and Methodologies for Surface Water, for the protection of aquatic life class 1 and

recreation class 1 uses. In addition, a portion of Lower Yampa/Green River segment 2 is located within Dinosaur National Monument. The entire segment has been designated High Quality 2 to protect the Monument and for consistency with the upstream and downstream waters. The Commission rejected a proposal to resegment Lower Yampa/Green River segment 2 at the Dinosaur National Monument boundary. An ambient-quality-based iron standard = 1,900 ug/l (Trec) has been established for this segment.

Previous Lower Colorado segments 16a and 16b have been renumbered as segment 15; previous segment 16c is now segment 16.

C. Existing High Quality 2 Segments; New Classifications and Standards

White River segment 1

Lower Colorado River segment 8

These segments were already described as High Quality class 2, and available information indicates that the parallel new High Quality 2 designation continues to be appropriate for each. All are within wilderness areas. In addition, the following use classifications, and associated table value standards, have been adopted for these segments:

Recreation - Class 2

Cold Water Aquatic Life - Class 1

Water Supply

Agriculture

These classifications and standards are appropriate based on the best available information regarding existing quality and uses. These provisions would apply in the event that degradation is determined to be necessary following an activity-specific antidegradation review.

D. New Use-Protected Designations; No Change in Numeric Standards

Lower Yampa/Green River segments 3b, 6, 12, 14, 17, 20

White River segments 5, 9, 13a, 13b, 16a, 22

Lower Colorado River segments 4, 11b, 11e, 13

These segments all qualify for a use-protected designation based on their present classifications. All are aquatic class 2 streams. Existing standards are recommended because these segments have only a minimal number of standards, with no metal or nutrient standards, except for Lower Colorado segment 4.

The descriptions of Lower Yampa/Green segments 3b and 12a (now 12) have been revised. Segments 3c and 12b have been deleted.

E. New Use-Protected Designations; Revised Numeric Standards

Lower Yampa/Green River segments 3a, 5, 13a, 13b, 16, 22
White River segments 15, 17, 18, 19

Lower Colorado River segments 6, 11d, 17

All of these segments are aquatic life class 2 streams with numeric standards to protect the existing aquatic life. Except as specified below, numerical standards for metals have been based on table values contained in Table III of the previous Basic Standards and Methodologies for Surface Water. Table III has been substantially revised, effective September 30, 1988. From the information available, it appears that the existing quality of these segments meets or exceeds the quality specified by the revised criteria in Table III, and new acute and chronic table value standards based thereon have been adopted. There are also some of these segments whose previous standards were based in part on ambient quality, since their quality did not meet old table values based on alkalinity ranges. However, these segments generally have much higher hardness than alkalinity, and the new table values (based on hardness-dependent equations) are now appropriate as standards.

Ambient quality-based standards:

Segment	Constituents, ug/l
Lower Yampa/Green River 5	Fe (ch) = 1500 ug/l (Trec)
Lower Yampa/Green River 13a	Fe (ch) = 1700 ug/l (Trec)
Lower Yampa/Green River 16	Fe (ch) = 2400 ub/l (Trec)
White River 15	Fe (ch) = 11000 ug/l (Trec)

In addition, the aquatic life classification for Lower Yampa/Green River segment 3a is changed from cold water class 2 to warm water class 2.

F. No Change in Classification; No Designations; Revised Numeric Standards

Lower Yampa segment 7, 15

White segments 11, 14, 20

Lower Colorado segments 9, 11a, 11f, 12, 14, 19

These are water bodies whose classifications are appropriate for High Quality 2 designation (CW1 or WW1 and Rec 1) but had quality not suitable for a water supply classification or 85th

percentile values of one or two parameters exceeding the criteria for class 1 aquatic life, or may not meet the water quality criteria based on the best available information. Previous segments 14a and 14b have been combined.

Table value standards have been adopted for these segments with the following exceptions:

Segment	Constituents, ug/l
White 20	Fe (ch) = 13,500 ug/l (Trec)
Lower Colorado 14	Fe (ch) = 1,250 ug/l (Trec)

G. Changes in Classification; No Designations; Revised Numeric Standards

White River segment 12, 21

Lower Colorado River segment 2, 3

Review of available data and existing uses indicates that Lower Yampa/Green River segment 2, White River segments 12 and 21, and Lower Colorado segments 2 and 3 are all appropriate to be upgraded to Recreation class 1 with a corresponding fecal coliform standard of 200 MPN/100 ml.

All segments are proposed for the appropriate table value standards except for total recoverable ambient standards for iron of 2,100 ug/l on White, segment 12; 2,300 ug/l on White, segment 20; 2,000 ug/l on Lower Colorado, segment 2; and 2,600 ug/l on Lower Colorado, segment 3.

H. No change in Classifications or Standards

White River segment 2, 16b

Lower Colorado segment 11c

Segment 2 of the White River is currently designated HQ1. White River segment 16b, and Lower Colorado segment 11c have no classifications.

I. Deleted segments

Lower Yampa/Green River segment 8

Lower Colorado segment 10

Each of these segments were reservoirs that are no longer in operation.

Parties to the September, 1990 Hearing

1. Associated Governments of Northwest Colorado
2. Union Oil Company of California dba Unocal
3. City of Rifle, Town of Palisade and Town of Debeque
4. Mobile Oil Corporation; Main Elk Corporation and Mobil Mining and Minerals Co.
5. Getty Oil Exploration Company ("Getty") and the Colorado River Water Conservation District
6. Rio Blanco Oil Shale Company, Inc.
7. Chevron Shale Oil Company
8. EXXON Company, U.S.A.
9. Colorado River Water Conservation District
10. Getty Oil Exploration Company

37.13 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; MARCH 1, 1993 HEARING:

The provisions of 25-8-202(1)(a), (b) and (2); 25-8-203; 25-8-204; and 25-8-402 C.R.S. provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted in compliance with 24-4-103(4), C.R.S., the following statement of basis and purpose.

BASIS AND PURPOSE:

The changes to the designation column eliminating the old High Quality 1 and 2 (HQ1, HQ2) designations, and replacing HQ1 with Outstanding Waters (OW) designation were made to reflect the new mandates of section 25-8-209 of the Colorado Water Quality Act which was amended by HB 92-1200. The Commission believes that the immediate adoption of these changes and the proposals contained in the hearing notice is preferable to the alternative of waiting to adopt them in the individual basin hearings over the next three years. Adoption now should remove any potential for misinterpretation of the classifications and standards in the interim.

In addition, the Commission made the following minor revisions to all basin segments to conform them to the most recent regulatory changes:

1. The glossary of abbreviations and symbols were out of date and have been replaced by an updated version in section 3.7.6(2).

2. The organic standards in the Basic Standards were amended in October, 1991, which was subsequent to the basin hearings. The existing table was based on pre-1991 organic standards and are out of date and no longer relevant. Deleting the existing table and referencing the Basic Standards will eliminate any confusion as to which standards are applicable.

3. The table value for ammonia and zinc in the Basic Standards was revised in October, 1991. The change to the latest table value will bring a consistency between the tables in the basin standards and Basic Standards.

4. The addition of acute un-ionized ammonia is meant to bring a consistency with all other standards that have both the acute and chronic values listed. The change in the chlorine standard is based on the adoption of new acute and chronic chlorine criteria in the Basic Standards in October, 1991.

Finally, the Commission confirms that in no case will any of the minor update changes described above change or override any segment-specific water quality standards.

37.14 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE, SEPTEMBER 7, 1993:

The provisions of 25-8-202(1) (a), (b) and (2); 25-8-203; 25-8-204; and 25-8-402 C.R.S. provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted in compliance with 24-4-103(4), C.R.S., the following statement of basis and purpose.

BASIS AND PURPOSE:

On November 30, 1991, revisions to "The Basic Standards and Methodologies for Surface Water", 3.1.0 (5 CCR 1002-8), became effective. As part of the revisions, the averaging period for the selenium criterion to be applied as a standard to a drinking water supply classification was changed from a 1-day to a 30-day duration. The site-specific standards for selenium on drinking water supply segments were to be changed at the time of rulemaking for the particular basin. Only one river basin, the South Platte, has gone through basin-wide rulemaking since these revisions to the "Basic Standards". Through an oversight, the selenium standards was not addressed in the rulemaking for this basin and has since become an issue in a wasteload allocation being developed for segments 15 and 16 of the South Platte. Agreement on the wasteloads for selenium is dependent upon a 30-day averaging period for selenium limits in the effected parties permits. Therefore, the parties requested that a rulemaking hearing be held for the South Platte Basin to address changing the designation of the 10 ug/l selenium standard on all water supply segments from a 1-day to a 30-day standard. The Water Quality Control Division, foreseeing the possibility of a selenium issue arising elsewhere in the state, made a counter proposal to have one hearing to change the designation for the selenium standard on all water supply segments statewide. The Commission and the parties concerned with South Platte segments 15 and 16 agreed that this would be the most judicious way to address the issue.

The change in the averaging period may cause a slight increase in selenium loads to those segments which have CPDS permits regulating selenium on the basis of a water supply

standard. However, these segments are only five in number and the use will still be fully protected on the basis that the selenium criterion is based on 1975 national interim primary drinking water regulations which assumed selenium to be a potential carcinogen. It has since been categorized as a non-carcinogen and new national primary drinking water regulations were promulgated in 1991 that raised the standard to 50 ug/l.

The Commission also corrected a type error in the TVS for Silver by changing the sign on the exponent for the chronic standard for Trout from + 10.51 to - 10.51.

37.15 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE (1995 Silver hearing)

The provisions of C.R.S. 25-8-202(1)(b), (2) and 25-8-204; provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted in compliance with 24-4-103(4) C.R.S. the following statement of basis and purpose.

BASIS AND PURPOSE

The changes described below are being adopted simultaneously for surface water in all Colorado river basins.

This action implements revisions to the Basic Standards and Methodologies for Surface Water adopted by the Commission in January, 1995. As part of a July, 1994 rulemaking hearing, the Commission considered the proposal of various parties to delete the chronic and chronic (trout) table values for silver in Table III of the Basic Standards. As a result of that hearing, the Commission found that the evidence demonstrated that ionic silver causes chronic toxicity to fish at levels below that established by the acute table values. It was undisputed that silver is present in Colorado streams and in the effluent of municipal and industrial dischargers in Colorado. The evidence also demonstrated that the removal of silver from wastewater can be costly. However, there was strongly conflicting scientific evidence regarding the degree to which silver does, or could in the absence of chronic standards, result in actual toxicity to aquatic life in Colorado surface waters. In particular, there was conflicting evidence regarding the degree to which the toxic effects of free silver are mitigated by reaction with soluble ligands to form less toxic compounds and by adsorption to particulates and sediments.

The Commission concluded that there is a need for additional analysis of the potential chronic toxicity of silver in streams in Colorado. The Commission encouraged the participants in that hearing, and any other interested parties, to work together to develop additional information that will help resolve the differences in scientific opinions that were presented in the hearing. The Commission believes that it should be possible to develop such information within the next three years.

In the meantime, the Commission decided as a matter of policy to take two actions. First, the chronic and chronic (trout) table values for silver have been repealed for the next three years.

The Commission is now implementing this action by also repealing for the next three years, in this separate rulemaking hearing, all current chronic table value standards for silver previously established on surface waters in Colorado. Any acute silver standards and any site-specific silver standards not based on the chronic table values will remain in effect. The Commission intends that any discharge permits issued or renewed during this period will not include effluent limitations based on chronic table value standards, since such standards will not currently be in effect. In addition, at the request of any discharger, any such effluent limitations currently in permits should be deleted.

The second action taken by the Commission was the readoption of the chronic and chronic (trout) table values for silver, with a delayed effective date of three years from the effective date of final action. The Commission also is implementing this action by readopting chronic silver standards with a corresponding delayed effective date at the same time that such standards are deleted from the individual basins. The Commission has determined that this is an appropriate policy choice to encourage efforts to reduce or eliminate the current scientific uncertainty regarding in-stream silver toxicity, and to assure that Colorado aquatic life are protected from chronic silver toxicity if additional scientific information is not developed. If the current scientific uncertainty persists after three years, the Commission believes that it should be resolved by assuring protection of aquatic life.

In summary, in balancing the policy considerations resulting from the facts presented in the July 1994 rulemaking hearing and in this hearing, the Commission has chosen to provide relief for dischargers from the potential cost of treatment to meet chronic silver standards during the next three years, while also providing that such standards will again become effective after three years if additional scientific information does not shed further light on the need, or lack of need, for such standards.

Finally, the Division notes that arsenic is listed as a TVS standard in all cases where the Water Supply classification is not present. This is misleading since Table III in the Basic Standards lists an acute aquatic life criterion of 360 ug/l and a chronic criterion of 150 ug/l for arsenic, but a more restrictive agriculture criterion of 100 ug/l. It would be clearer to the reader of the basin standards if, for each instance where the standard "As(ac/ch)=TVS" appears, the standard "As=100(Trec)" is being inserted as a replacement. This change should make it clear that the agriculture protection standard would prevail in those instances where the more restrictive water supply use protective standard (50 ug/l) was not appropriate because that classification was absent.

The chemical symbol for antimony (Sb) was inadvertently left out of the "Tables" section which precedes the list of segments in each set of basin standards. The correction of this oversight will aid the reader in understanding the content of the segment standards. Also preceding the list of segment standards in each basin is a table showing the Table Value Standards for aquatic life protection which are then referred to as "TVS" in the segment listings. For cadmium, two equations for an acute table value standard should be shown, one for all aquatic life, and one where trout are present. A third equation for chronic table value should also be listed. The order of these three equations should be revised to first list the acute equation, next the acute

(trout) equation, followed by the chronic equation. This change will also aid the reader in understanding the intent of the Table Value Standards.

PARTIES TO THE PUBLIC RULEMAKING HEARING JUNE 12, 1995

1. Coors Brewing Company
2. The Silver Coalition
3. Cyprus Climax Metals Company
4. The City of Fort Collins
5. The City of Colorado Springs

37.16 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; JULY, 1997 RULEMAKING

The provisions of sections 25-8-202 and 25-8-401, C.R.S., provide the specific statutory authority for adoption of the attached regulatory amendments. The Commission also adopted, in compliance with section 24-4-103(4) C.R.S., the following statement of basis and purpose.

BASIS AND PURPOSE

The Commission has adopted a revised numbering system for this regulation, as a part of an overall renumbering of all Water Quality Control Commission rules and regulations. The goals of the renumbering are: (1) to achieve a more logical organization and numbering of the regulations, with a system that provides flexibility for future modifications, and (2) to make the Commission's internal numbering system and that of the Colorado Code of Regulations (CCR) consistent. The CCR references for the regulations will also be revised as a result of this hearing.

37.17 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; JULY, 2001 RULEMAKING

The provisions of C.R.S. 25-8-202(1)(a), (b) and (2); 25-8-203; 25-8-204; and 25-8-402; provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted in compliance with 24-4-103(4) C.R.S. the following statement of basis and purpose.

BASIS AND PURPOSE

A. Resegmentation

Some renumbering and/or creation of new segments were adopted in the basin due to information which showed that: a) the original reasons for segmentation no longer applied; b) new water quality data showed that streams should be resegmented based on changes in their

water quality; and/or c) certain segments could be grouped together in one segment because they had similar quality and uses. The following changes were made:

Lower Yampa, Segment 3a – 3f: Tributaries to the Lower Yampa were separated out to reflect differences in the aquatic life use, water supply use, agricultural use, recreational use and designations.

Segment 3b: Named tributaries which are generally ephemeral and have less plentiful aquatic life use and the agricultural use is limited to livestock watering.

Segment 3c: The Milk Creek system has a known water supply use and has more plentiful aquatic life. The boundary on Good Spring Creek is set at the inlet to Wilson Reservoir. Wilson Reservoir and lower Good Spring Creek below Wilson Reservoir are included in this segment.

Segment 3d: Temple Gulch, Lay Creek and Morgan Gulch have more plentiful aquatic life, including species of special concern, and no known water supply use.

Segment 3e: Upper Good Spring, Taylor and Wilson Creeks have low flows and less plentiful aquatic life. Upper Good Spring Creek and Taylor Creek have a water supply use.

Segment 3f: Big Gulch was placed in a separate segment due to the presence of primary contact recreation uses.

Lower Yampa, Segments 3a and 14: Wetlands, lakes and reservoirs were added to the segment description to clarify that this is an “All” tributary segment.

Lower Yampa, Segment 6: Freeman Reservoir was separated from the tributaries to Fortification Creek to reflect its recreation 1a use and became segments 6a and 6b, respectively.

Lower Yampa, Segments 8 and 9: East Fork of the Williams Fork was separated out to reflect those waters within the Flat Tops Wilderness Area. Segment 8 had previously been deleted and is now replaced with the East Fork.

Lower Yampa, Segments 12 and 13b: Morapos Creek was moved from segment 13b to segment 12 to better reflect its cold water class 1 aquatic life use. Aldrich Lakes were separated from segment 12 into a new segment 12b to reflect its recreation 1a use.

Lower Yampa, Segments 14 and 20: Tributaries to the Yampa River from the Little Snake to the Green River were moved from segment 14 to segment 20 to better reflect the recreation 1a uses in Dinosaur National Monument and the associated watershed.

Lower Yampa, Segment 17: Tributaries to the Little Snake River were separated into segments 17a and 17b to reflect the differences in aquatic life use.

Lower Yampa, Segment 22: Tributaries to Vermillion Creek were added to this segment to reflect their recreational uses.

White River, Segments 1 and 2: Waterbodies in segment 2 were combined with those in segment 1. This combines the waters within the Flat Tops Wilderness Area. Segment 2 was deleted.

White River, Segments 4 and 5: Segments 4 and 5 were combined into segment 4 to reflect the similarity in water quality and aquatic life uses in the North Fork tributaries. Segment 5 was deleted.

White River, Segments 9 and 10: Coal Creek was separated out from segment 9 and is now included in segment 10 which better reflects its cold water class 1 aquatic life use. Lake Avery was separated from segment 10 into a new segment 10a to reflect its recreation 1a use with the remainder of segment 10 renamed segment 10b.

White River, Segment 13a: Wetlands, lakes and reservoirs were added to the segment description to clarify that this is an “All” tributary segment.

White River, Segments 13a and 13b: Little Spring Creek (previously identified in segment 13b as “Spring Creek”) was deleted from segment 13b due to its dry nature and is now included in segment 13a. The description for segment 13b was also changed to include the entire Yellow Creek system. The aquatic life warm 2 classification is a better characterization of Yellow Creek’s aquatic life use.

White River, Segments 16a and 16b: Waterbodies in segment 16b were combined into segment 16a to reflect the similarity in water quality and aquatic life uses in the tributaries to Piceance Creek. Segment 16b was deleted and segment 16a was renamed 16.

White River, Segments 17 and 18: Waterbodies in segment 18 were combined with those in segment 17 due to their similar natures and uses. Segment 18 was deleted.

White River, Segment 23: West Douglas Creek was added to segment 23 to better reflect its cold water class 1 aquatic life use.

Lower Colorado, Segments 4,13a, and 13b: Wetlands, lakes and reservoirs were added to the segment descriptions to reflect the all tributaries system. These wetlands, lakes and reservoirs were previously unclassified.

Lower Colorado, Segments 4 and 10: Lower Rifle Creek was separated from segment 4 and moved to segment 10 to reflect its aquatic life cold 1 and recreation 1a uses. Segment 10 had previously been deleted and is now replaced with Lower Rifle Creek.

Lower Colorado, Segments 4 and 11g: Tributaries in the vicinity of lower Parachute Creek were separated from segment 4 to create segment 11g. These tributaries are generally ephemeral and there is no known water supply use. Since there is little or no information on aquatic life in this segment, and since the adequacy of flows to sustain aquatic life is an unresolved question, the last paragraph of section 31.6(2)(b) will apply to future changes without application of the downgrading criteria in that section. This segment is classified aquatic life cold 2, recreation 2, agriculture. Numeric standards are adopted to protect recreation and agriculture, and for DO and pH.

Lower Colorado, Segment 11h: The lower mainstem of Parachute Creek was separated from segment 4 to create segment 11h to reflect difference in land use and in water supply use, and for consistency within the Parachute Creek drainage basin which is predominantly reflected by other basin-specific segments. The evidence does not support a water supply use classification for this segment. This segment remains classified as aquatic life cold 2 and agriculture, and is classified as recreation 1b.

Lower Colorado, Segment 13: The tributary system to the Lower Colorado River was separated into several segments based on aquatic life uses and changes in water quality. Segment 13b was created to include tributaries known to have aquatic life class 2 uses. Segment 13c was created to include waterbodies with aquatic life class 1 uses. Evidence was submitted that indicated that high concentrations of selenium are present in portions of segments 13b and 13c. Segment 13 was renamed 13a and now excludes the new segments 13b and 13c.

Lower Colorado, Segment 14: Segment 14 was renamed 14a. Segment 14b was created to include the lower portion of Roan Creek which has an aquatic life warm 1 use. Lower Roan Creek was previously included in Segment 13.

Lower Colorado, Segment 16: This segment was deleted since no waterbodies could be identified in this segment.

Lower Colorado, Segment 19: Highline Reservoir and Mack Mesa Reservoir are now included in Segment 19 due to their aquatic life warm 1 uses and similar characteristics to the other lakes in Segment 19. These reservoirs were previously unclassified.

B. Wetlands

In March 1993, the Commission amended the Basic Standards and Methodologies for Surface Water, Regulation #31 (5 CCR 1002-31) to include wetlands in the stream classification and standards system for the State. Due to that action, it became necessary to revise the segment description for all segments of the “all tributary” type to clarify that wetlands are also part of the tributary system for a given mainstem segment. All tributary wetlands now clearly carry the same classifications and standards as the stream to which they are tributary as provided for in 31.13(1)(e)(iv).

C. Manganese

The aquatic life manganese criterion was initially changed in the 1997 revisions to the Basic Standards (5 CCR 1002-31) from a single chronic dissolved criterion to acute and chronic hardness-based equations. The equations were further modified in the 2000 revisions to the Basic Standards. The new manganese acute and chronic equations were added as table value standards in 37.6(3). As a result of the adoption of these new TVS, all segments classified for aquatic life use that had a chronic total recoverable manganese standard of 1,000 μg/L had the 1,000 standard stricken and replaced with Mn(ac/ch)=TVS.

D. Selenium

The regulation in 37.6 (3) listed the table value standards for selenium as Acute=135 μg/L and Chronic=17 μg/L. This was updated to reflect the existing acute and chronic criteria for selenium listed in the Basic Standards as Acute= 18.4 μg/L and Chronic= 4.6 μg/L which was adopted in 2000 by the Commission. This change means that all segments with standards for selenium given as TVS now have these lower acute and chronic standards. Because of this change, on all segments classified for a water supply use, the chronic total recoverable selenium of 10 μg/L was stricken and replaced with Se(ac/ch)=TVS.

The Commission adopted the table value standards for selenium and temporary modifications of existing ambient quality for selenium for Lower Colorado segments 13b and 13c. The temporary modifications were adopted pursuant to section 31.7(3)(a)(iii) of the Basic Standards regulation, based on the fact that there is significant uncertainty as to the appropriate underlying selenium standard for these segments. The reason for the adoption of the temporary modifications has been noted in the temporary modifications and qualifiers column of the table.

Water Quality monitoring has shown that many small drainages in the Grand Valley have selenium concentrations significantly in excess of the table value standards. The reduction of selenium, and the extent to which the current levels of selenium are the result of natural sources, reversible activities, and/or irreversible activities is unknown at this time. Therefore, it is not clear whether the table value standards are achievable in these segments. The Commission does not intend its actions to in any way impede current efforts to reduce salinity levels in the Colorado River mainstem and to implement the Grand Valley Water Management Plan. The Commission intends that the actions taken in this hearing will mark the beginning of a process to identify the appropriate long-term selenium standards for these tributaries. It is expected that the process may result in the adoption of site-specific standards for selenium in some or all of the affected segments.

E. Outstanding Waters Designations

Several segments or waterbodies were designated outstanding waters (OW) due to their meeting certain criteria pursuant to section 31.8(2)(a). Segments which already included wilderness areas in their

description were designated OW. The water quality of the following segments met the 12 parameter test and other requirements of 31.8(2)(a):

Lower Yampa, Segment 8
White River, Segment 1

F. Removal of Use Protected Designation

The Division proposed that a number of aquatic life class 2 waterbodies be assigned undesignated status under the state antidegradation regulation due to the presence of Colorado State species of special concern. State regulations governing the "use-protected" designation allow this exception if the Commission determines that the waters are of exceptional ecological significance. The Commission believes that a number of important issues have been raised in this hearing regarding when and how this exception should be applied, and that further examination of these issues should occur. Nevertheless, for purposes of this hearing, the Commission, based upon a concern over the protection of classified uses and the absence of evidence of potential injury to permitted entities, has decided to accept the change to reviewable water status for the following:

Lower Yampa, Segments: 3d, 16 and 22
White River, Segment 15

Based upon representations made by certain parties to this rulemaking, the Commission endorses the formation of a workgroup to address the following topics and develop recommendations to be submitted to the Commission

- The relationship between the "exceptional ecological significance" exception to use-protected designations and the aquatic life class 2 basis for applying use-protected designations

- The need for and content of guidance to determine what water bodies are exceptionally ecologically significant

- The roles of a) water quality data; b) the nexus between water quality conditions and species decline, and c) other stressors, in using this exception

- The need for and nature of any amendments to the state antidegradation regulation if the presence of species of special concern constitute a basis for modification to the antidegradation designation of a water body.

The above listed segments would then be reviewed in light of the work group recommendations in the next triennial review of these basins.

The Commission urges that the work group process to address these issues move forward as expeditiously as possible. The Commission intends that the actions taken in this rulemaking not

serve in any way as a precedent with respect to decisions in future Commission rulemaking proceedings.

G. Recreation Classifications/Fecal Coliform and E. Coli Standards

The biological standards were updated to include the dual standards for E. coli and fecal coliform, which were adopted by the Commission in the 2000 revisions to the Basic Standards. As stated in the statement of basis for the Basic Standards revisions, the Commission intends that dischargers will have the option of either parameter being used in establishing effluent limitations in discharge permits. In making section 303(d) listing decisions, in the event of a conflict between fecal coliform and E. coli data, the E. coli data will govern. The Commission believes that these provisions will help ease the transition from fecal coliform to E. coli standards.

In a continuation of the Commission's efforts to comply with the requirements contained in the federal Clean Water Act that all waters of the nation should be suitable for recreation in and on the water (known as the "swimmable" goal), the Commission reviewed all Recreation Class 2 segments. In Colorado, the "swimmable" goal translates into Recreation Class 1a, with the 200/100 ml fecal coliform and 126/100 ml E. Coli standard, and Class 1b with the 325/100 ml fecal coliform and 205/100 ml E. coli standard. Class 1a indicates waters where primary contact uses have been documented or are presumed to be present. Class 1b indicates waters where no use attainability analysis has been performed demonstrating that a recreation class 2 classification is appropriate, but for which no existing primary contact uses have been documented following a reasonable level of inquiry. A Recreation Class 2 classification must be supported by a use attainability analysis that shows that there is not a reasonable potential for primary contact uses.

There was considerable evidence and testimony submitted in this hearing regarding what activities should be considered primary contact recreation. Section 31.13(1)(a) of the Basic Standards provides a non-exclusive list of primary contact activities. In this hearing, much discussion focused on the issue of whether "child's play" in streams that are too shallow to accommodate the primary contact uses listed in the Basic Standards should be considered a primary contact use. The Commission does not believe that a theoretical potential for child's play means that all streams should be classified Recreation Class 1a or 1b. However, the Commission concludes that the evidence submitted demonstrates that there is a potential risk of ingestion of small quantities of water by children playing in relatively shallow streams, based on the hand-to-mouth pathway, which warrants Recreation Class 1 protection in appropriate circumstances as elaborated below. Thus, such ingestion may occur in streams where whole body immersion is not likely.

This does not mean, as suggested by some, that all water bodies would be reclassified as Recreation Class 1a or 1b based on some potential for child's play. Rather, the Commission intends that a stream should be classified Recreation Class 1a or 1b due to the presence or potential for child's play only where the evidence demonstrates a likelihood of such activity on a frequently occurring basis. Therefore, child's play may be an appropriate basis for a Recreation Class 1a or 1b classification in a developed area where there is easy access to a stream for children and it is likely that children will

desire to play in the stream; it may not be an appropriate basis for such classifications in areas where it is not expected that children will be playing in a stream on a frequently occurring basis. Factors such as lack of adequate flow, excessive flows, remoteness from developed areas, physical limitations to access, steep banks, and visibly poor water quality may make it unlikely that child's play will take place on a frequently occurring basis. The Commission anticipates that these classification decisions will require case-by-case judgments until more experience is gathered with this issue.

A recreation Class 1a or 1b classification of a segment is not intended to imply that the owner or operator of property surrounding any waterbody in a segment would allow access for primary contact recreation. The application of recreation classifications to state waters pursuant to these provisions does not create any rights of access on or across private property for the purposes of recreation in or on such waters. A recreation Class 1a classification is intended to only affect the use classification and water quality standards of a segment, and does not imply public or recreational access to waters with restricted access within a segment.

For segments changing to recreation Class 1a because no evidence or inadequate evidence was submitted on the record about actual or potential recreational uses, the last paragraph of section 31.6(2)(b) will apply to future changes to the recreation classification where a proper showing is made through a use attainability analysis that a recreation Class 2 classification is appropriate, without application of the other downgrading criteria in this section. Moreover, the Commission is relying in part on the testimony from EPA that completion of a use attainability analysis showing that a lower recreation classification is appropriate satisfies applicable downgrading criteria. Based on these factors, the Commission intends that in a future rulemaking hearing, the test for adopting a recreation Class 2 classification would be the same as if it had been considered in this hearing.

The following segments with existing Recreation Class 1 classifications were changed to Class 1a:

Lower Yampa, Segments: 1, 2, 19
White River, Segments: 11, 12, 21
Lower Colorado, Segments: 1, 2, 3, 9

Based on the information received that showed Recreation Class 1a uses are in place or are presumed to be present in at least a portion of the segment, the Commission changed the following segments from Class 2 to Class 1a with a 200/100 ml fecal coliform and 126/100 ml E. coli standard:

Lower Yampa, Segments: 3f, 5, 6b, 8, 10, 12b, 13a, 13b, 15, 16, 20
White River, Segments: 1, 3, 4, 6, 10a, 23
Lower Colorado, Segments: 7, 10, 13b, 13c, 15, 19

Based on the information received, where a reasonable level of inquiry failed to identify any existing class 1 uses of the waters in these segments, the Commission changed the following segments to Class 1b with a 325/100 ml fecal coliform and 205/100 ml E. coli standard:

Lower Yampa, Segments: 3b, 3c, 3e, 4, 6a, 7, 9, 11, 12a, 17a, 18, 21
White River, Segments: 8, 10b, 14, 15, 19, 22
Lower Colorado, Segments: 5, 11h, 13a, 14a, 14b, 18

Although Wilson Reservoir, in Lower Yampa segment 3c is open to public fishing, it is on private property and is posted "no swimming". Other streams in segments 3b, 3c, and 3e are located in undeveloped areas, have limited or no public access and are generally characterized as shallow low-flow streams.

For Lower Colorado segment 17, the Commission adopted a Class 1b classification, based on inquiry that failed to identify existing uses, while retaining the 200/100 ml fecal coliform standard and adopting a 126/100 ml E. coli standard, because the segment currently meets these more stringent standards, water users on this segment support the more stringent standards and no water users or dischargers will be adversely affected.

For the following segments, the Commission adopted seasonal recreation classifications, based on evidence of differences in actual or potential recreation uses at different times of the year:

Lower Yampa, Segment 22:	Class 1b, June 1 through August 31 Class 2, September 1 through May 31
White River, Segment 7:	Class 1a, March 1 through November 30 Class 1b, December 1 through February 28

The following segments retained their Recreation Class 2 classification with 2,000/100mL fecal coliform and 630/100 ml E. coli standards after sufficient evidence was received that a Recreation Class 1a use was unattainable.

Lower Yampa, Segment: 3a, 3d, 14, 17b
White River, Segments: 9, 13a, 13b, 16, 17, 20
Lower Colorado, Segments: 4, 6, 8, 11a, 11b, 11c, 11d, 11e, 11f, 11g, 12

The classification for Lower Yampa/Green River segments 3a, 3d, 14 and 17b are based upon the fact that the streams are ephemeral and/or intermittent and have limited access. The classification for White River segment 9 is based upon low flows and limited access through private lands. The classifications for White River segments 13a, 13b, 16, 17 and 20 are based upon the fact that the streams are ephemeral and/or intermittent. The classification for Lower Colorado segment 4 is based upon limited streamflows. The classification for Lower Colorado segment 6 is based upon limited streamflows and steep stream banks. The classifications for Lower Colorado segments 8, 11a-g and 12 are based upon limited streamflows and limited access due to private and industrial lands.

H. <u>Aquatic Life Segments without Full Standards</u>

The Commission reviewed information regarding Aquatic Life Class 2 segments where the full set of inorganic aquatic life protection standards have not been applied. Generally, these are dry segments with only rudimentary aquatic life. The Commission's policy has been that rather than adopt the full set of inorganic standards for these segments, standards for dissolved oxygen, pH and fecal coliform provide sufficient protection.

Segments where investigation showed that aquatic life was present were upgraded with the addition of the full suite of inorganic standards. These segments are:

Lower Yampa, Segments: 3c, 3d, 17a
White River, Segments: 9, 13b
Lower Colorado, Segments: 5, 13b

I. Ambient Quality-Based Standards

There are several segments in the Lower Colorado Basin that contain standards based on existing ambient quality. Ambient standards are adopted where natural or irreversible man-induced conditions result in water quality levels higher (i.e. worse) than table value standards. EPA had requested that the Commission review the information that is the basis for these standards as well as any new information that would indicate whether they are still appropriate, need to be modified, or should be dropped.

The Division reviewed the information about ambient water quality levels and provided testimony that justified revising the ambient standards on Lower Yampa, Segment 16.

Ambient standards were removed from the following segments due to new data and/or changes to the Basic Standards which indicated ambient standards were no longer appropriate:

Lower Yampa, Segments: 2, 5, 13a
White River, Segments: 12, 20, 21
Lower Colorado, Segments: 2, 3, 14a

J. Temporary Modifications

There were several segments where temporary modifications that reflect current ambient conditions were adopted. Temporary modifications were set to expire on 12/31/08. The segments and the constituents are:

Lower Yampa, Segment 16: fecal coliform
White River, Segment 9: selenium
White River, Segment 13b: all numeric standards
Lower Colorado, Segments 4, 13b, and 13c: selenium
Lower Colorado, Segment 13b (Persigo Wash and Little Salt Wash): several parameters

In accordance with the triennial review requirements in the federal Clean Water Act and Colorado Water Quality Control Act, the Commission retains its authority to reexamine and revise temporary modifications, if necessary, based upon new information that it may obtain prior to the December 31, 2008 expiration date, regarding the reason for the temporary modifications.

White River, Segment 13b: This segment is subject to temporary modification for all numeric standards to reflect "current conditions." The temporary modifications reflect uncertainty regarding the numeric standards necessary to protect aquatic life and agricultural uses in Yellow Creek. Shell Frontier Oil will work in coordination with the Division to resolve the uncertainty before the temporary modification expires.

Lower Yampa Segments 3c and 3e: The temporary modifications for lower Yampa Segments 3c and 3e reflect significant uncertainty regarding the appropriate long-term underlying inorganics and metals standards for these segments or portions thereof. This uncertainty stems from a general lack of knowledge regarding existing water quality conditions, potential future uses (for example, the Colowyo Coal Company has expressed its intention to relocate its water supply diversion on Taylor Creek to an upstream location that would be above any existing discharges to the stream) and aquatic biota occurring in these segments. The Colowyo Coal Company will coordinate with the Division and conduct water quality, habitat and aquatic life investigations, before the next review to resolve the noted uncertainty.

With respect to Lower Yampa segments 3c and 3e, although the next triennial review will occur in July 2003, the Commission does not anticipate that sufficient information will have been collected as of that time to justify removal of the temporary modifications. Therefore, the Commission has assigned an expiration date of 12/31/2008 for the temporary modifications for these segments. This date coincides with the next subsequent major review of standards in this basin.

Lower Colorado, segment 13b: Temporary modification of “current conditions” is provided in Segment 13b for Persigo Wash from immediately above the Persigo Wash Wastewater Treatment Plant discharge point to the confluence with the Colorado River and for Little Salt Wash from immediately above the Fruita Wastewater Treatment Plant discharge point to the confluence with the Colorado River. The temporary modification is for ammonia, boron, fecal coliform, cadmium, copper, mercury, silver, nickel, nitrite, and dissolved oxygen and shall expire 12/31/08. The temporary modification is provided to the Cities of Grand Junction and Fruita and others to resolve questions about and the uncertainty of application of the specific standards to the segment and the lower portions of Persigo and Little Salt Washes. The temporary modification provides time for setting appropriate, attainable standards, evaluating the feasibility of discharge point(s) in the wash or moving the discharge points elsewhere, including into the Colorado River, the need for additional treatment processes, if any, for the wastewater treatment plant and the affect of any action on the endangered species. The adoption of the temporary modification recognizes current conditions while providing an opportunity to remove the uncertainty.

The Commission expects that a plan for resolving the uncertainty that is the basis for the temporary modification will be developed, with participation from EPA, the U.S. Fish and Wildlife Service and others, by the time of the November, 2002 "issues formulation hearing" for this basin. Based upon review of that plan at that informational hearing, the Commission can determine whether there is any need for formally considering a change to the duration of this temporary modification in the July, 2003 rulemaking hearing for this basin.

K. Organic Chemical Standards

The organic chemical standards were updated to include changes adopted by the Commission in the 2000 revisions to the Basic Standards (see section 31.11 in Regulation No. 31). "Water + Fish" organic chemical standards are presumptively applied to all Aquatic Life Class 1 streams which also have a Water Supply classification, and are applied to Aquatic Life Class 2 streams which also have a Water Supply classification, on a case-by-case basis. The "Fish Ingestion" organic chemical standards are presumptively applied to all Aquatic Life Class 1 streams which do not have a Water Supply classification, and are applied to aquatic life class 2 streams which do not have a Water Supply classification, on a case-by-case basis.

Information was reviewed regarding Aquatic Life Class 2 segments that have fish that are presently being taken for human consumption or have fisheries that would indicate the potential for human consumption. That information showed that one additional segment had the potential for consumption of fish. White River, Segment 17 was designated to receive the full protection of numeric Fish Ingestion organic standards.

L. Water Supply Classification

These segments had the Water Supply classification added to them. The associated water supply standards will now apply to segments:

Lower Yampa, Segment: 3c, 3e
White River, Segments: 9, 21
Lower Colorado, Segments: 4

M. Modification of Water Supply Standards

Water supply standards were modified to conform to the changes made by the Commission in the 2000 revisions to the Basic Standards (see Regulation No. 31 at section 31.11(6)). The Commission modified the water supply standards for iron, manganese, and sulfate that are based on secondary drinking water standards (based on aesthetics as opposed to human-health risks). The numeric values in the tables were changed to Fe(ch) = WS (dis), Mn(ch) = WS (dis), and SO_4 = WS. These abbreviations mean that for all surface waters with an actual water supply use, the less restrictive of the following two options shall apply as numerical standards, as discussed in the Basic Standards and Methodologies at section 31.11(6): either (i) existing quality as of January 1 2000; or (ii) Iron = 300 μg/L (dissolved); Manganese = 50 μg/L (dissolved); Sulfate = 250 mg/L (dissolved). For all surface waters with a "Water Supply"

classification that are not in actual use as a water supply, no water supply standards are applied for iron, manganese or sulfate, unless the Commission determined as the result of a site-specific rulemaking hearing that such standards are appropriate.

N. Agriculture Classifications

There are two segments in the Lower Colorado River Basin that were not classified for Agricultural use. The Agricultural use classification was adopted for Lower Colorado, Segment 11c. White River segment 16b previously did not have an agriculture use; however, it was combined with segment 16a which had an agriculture use. The new segment 16 has an agriculture use.

O. Agriculture Standards

Numeric Standards to protect Agricultural Uses were adopted for the following segments:

Lower Yampa, Segments: 3a, 3b, 6, 14, 17b, 20
White River, Segments: 13a, 22
Lower Colorado, Segments: 11b, 11c, 11e, 11g, 13a

P. Other Site-Specific Revisions

The Commission corrected several typographical and spelling errors, clarified segment descriptions and removed "eff 3-2-98:" which refers to the now past effective date for the chronic silver standards.

The following aquatic life classifications were upgraded from class 2 to class 1 based on information presented that showed diverse aquatic communities in these segments.

Lower Yampa, Segments: 5, 12, 17a

In addition, Lower Colorado, Segment 17 was changed from aquatic life class 2 warm to class 1 cold, based on information received about the aquatic community that includes trout species.

Site-specific numeric standards were adopted for the following segments:

Lower Yampa, Segment 3b: Site-specific agricultural standards were adopted to protect livestock watering since Trapper Mining provided evidence that water from this segment is not used for crop irrigation.

White River, Segment 13b: Site-specific agricultural standards were adopted to protect livestock watering and irrigation of pasture for livestock feed since Shell Frontier Oil provided evidence that water from this segment is not used for irrigation of sensitive crops.

PARTIES TO THE RULEMAKING HEARING

1. Animas River Stakeholders Group
2. Colorado Wild, San Juan Citizen's Alliance, Sierra Club-Rocky Mountain Chapter, Colorado Environmental Coalition and The Wilderness Society
3. U.S. Department of the Interior, Bureau of Land Management
4. Sunnyside Gold Corporation
5. The Southwestern Water Conservation District
6. Silver Wing Company, Inc.
7. U.S. Department of Agriculture Forest Service
8. Shenandoah Mining Company Incorporated
9. Town of Silverton
10. Pagosa Area Water and Sanitation District
11. Peter Butler
12. U.S. Department of the Interior National Park Service
13. Climax Molybdenum Company
14. Tri-State Generation and Transmission Association, Inc.
15. Town of Olathe
16. The Board of County Commissioners of the County of Gunnison
17. Gunnison County Stockgrowers Association, Inc.
18. High Country Citizens' Alliance and Western Slope Environmental Resource Council
19. The City of Grand Junction
20. Homestake Mining Company
21. The Board of County Commissioners of the County of San Miguel
22. Mt. Crested Butte Water and Sanitation District
23. Colorado River Water Conservation District
24. Town of Cedaredge
25. The Board of County Commissioners of the County of Mesa
26. The Uncompahgre Valley Water Users Association
27. Umetco Minerals Corporation
28. The Colowyo Coal Company, L.P.
29. The Uncompahgre Valley Association
30. Town of Crested Butte
31. The City of Delta
32. Trapper Mining, Inc.
33. The Colowyo Coal Company, L.P.
34. The City of Grand Junction
35. Colorado River Water Conservation District
36. Yellow Jacket Water Conservation District
37. The Town of Meeker
38. The City of Fruita
39. Exxon Mobil Corporation
40. Shell Frontier Oil & Gas Inc.
41. The Board of County Commissioners of the County of Mesa
42. American Soda, LLP
43. The Rio Blanco Water Conservancy District

44. Colorado Division of Wildlife
45. The Northern Colorado Water Conservancy District and its Municipal Subdistrict
46. Upper Gunnison River Water Conservancy District
47. U.S. EPA Region
48. Ralph E. Clark III
49. U.S. Department of the Interior

37.18 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; JULY, 2002 RULEMAKING

The provisions of C.R.S. 25-8-202(1)(a), (b) and (2); 25-8-203; 25-8-204; and 25-8-402; provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted in compliance with 24-4-103(4) C.R.S. the following statement of basis and purpose.

BASIS AND PURPOSE

As a result of major rulemaking hearings in July, 2001, the Commission adopted extensive revisions to the water quality designation, classifications and standards for the waters in this basin. Subsequent to the filing of the final action documents resulting from that rulemaking, minor error were identified in the published revisions. Errors in the segment description for White River segment 17 were corrected in this rulemaking.

37.19 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; JULY, 2003 RULEMAKING

The provisions of C.R.S. 25-8-202(1)(a), (b) and (2); 25-8-203; 25-8-204; and 25-8-402; provide the specific statutory authority for adoption of these regulatory amendments. The Commission also adopted in compliance with 24-4-103(4) C.R.S. the following statement of basis and purpose.

BASIS AND PURPOSE

The Water Quality Control Commission completed a thorough review of Regulation No. 37 in July 2001, coincident with Regulation Nos. 34 and 35. To balance the workload and provide continuity with the upper basin, the Lower Colorado basin was moved to the cycle with the Upper Colorado basin (Regulation No. 33). This hearing addressed issues that had arisen since the 2001 hearing.

A. Resegmentation

Some renumbering and/or creation of new segments was made in the basin due to information which showed that: a) the original reasons for segmentation no longer applied; b) new water quality data showed that streams should be resegmented based on changes in their water

quality; and/or c) certain segments could be grouped together in one segment because they had similar quality and uses. The following changes were made:

Lower Yampa segment 22
Lower Yampa segment 22a
Lower Yampa segment 22b
White River segment 9
White River segment 9a
White River segment 9c
White River segment 10a
Lower Colorado segment 4a
Lower Colorado segment 4b
Lower Colorado segment 9a
Lower Colorado segment 9b
Lower Colorado segment 13a
Lower Colorado segment 13b
Lower Colorado segment 19

B. Recreation Classifications/Fecal Coliform and E. Coli Standards

In a continuation of the Commission's efforts to comply with the requirements contained in the federal Clean Water Act that all waters of the nation should be suitable for recreation in and on the water (known as the "swimmable" goal), the Commission reviewed several Recreation Class 2 segments. In Colorado, the "swimmable" goal translates into Recreation Class 1a, with the 200/100 ml fecal coliform and 126/100 ml E. Coli standard, and Class 1b with the 325/100 ml fecal coliform and 205/100 ml E. coli standard. Class 1a indicates waters where primary contact uses have been documented or are presumed to be present. Class 1b indicates waters where no use attainability analysis has been performed demonstrating that a recreation class 2 classification is appropriate, but where a reasonable level of inquiry has failed to identify any existing class 1 use. To maintain the existing Recreation Class 2 with the 2000/100 ml fecal coliform and 630/100 ml E. coli. standard on a segment, it must be shown that there is not reasonable potential for Recreation Class 1 uses to occur within the next 20-year period (e.g. ephemeral or small streams that have insufficient depth to support any type of Recreation Class 1 use or very restricted access).

A recreation class 1a classification of a segment is not intended to imply that the owner or operator of property surrounding a waterbody in a segment would allow access for primary contact recreation. The application of recreation classifications to state waters pursuant to these provisions does not create any rights of access on or across private property for the purposes of recreation in or on such waters. A recreation class 1a classification is intended to only affect the use classification and water quality standards of a segment, and does not imply public or recreational access to waters with restricted access within a segment.

For segments changing to recreation Class 1a because no information was available about actual recreational uses, the last paragraph of section 31.6(2)(b) will apply to future changes to

the recreation classification where a proper showing is made through a use attainability analysis that a recreation Class 2 classification is appropriate, without application of the other downgrading criteria in this section. Moreover, the Commission is relying in part on the testimony from EPA that completion of a use attainability analysis showing that a lower recreation classification is appropriate satisfies applicable downgrading criteria. Based on these factors, the Commission intends that in a future rulemaking hearing, the test for adopting a recreation Class 2 classification would be the same as if it had been considered in this hearing

Based on the information received that showed Recreation Class 1a uses are in place or are presumed to be present in at least a portion of the segment, the Commission changed the following segment from Class 2 to Class 1a with a 200/100 ml fecal coliform and 126/100 ml E. coli standard on a seasonal basis:

White River segment 9b from 6/1 to 8/31

Based on the information received that showed Recreation Class 1a uses are in place or are presumed to be present in at least a portion of the segment, the Commission designated the following segments Class 1a with a 200/100 ml fecal coliform and 126/100 ml E. coli standard:

White River segment 10a
Lower Colorado segment 4b
Lower Colorado segment 9b
Lower Colorado segment 19
Lower Yampa 22b

Based on evidence presented, the Commission changed the following from Recreation Class 2 classification to Recreation Class 1b with a 325/100 ml fecal coliform and 205/100 ml E. coli standard:

Lower Colorado segment 6

The following segments retained their Recreation Class 2 classification with 2,000/100mL fecal coliform and 630/100 ml E. coli standard after sufficient evidence was received that a Recreation Class 1a or 1b use was unattainable.

Lower Yampa segment 21
Lower Yampa segment 22a
Lower Colorado segment 4a
White River segment 9a
White River segment 9b from 9/1 to 5/31

C. <u>Lower Yampa 3b Temporary Modification</u>

The Commission adopted a temporary modification for selenium of existing quality and a goal qualifier of TVS for Johnson Gulch from the confluence of Johnson Gulch and Pyeatt Gulch to the confluence with the Yampa River based on uncertainty.

Johnson Gulch is one of sixteen gulches included in Segment 3b of the lower Yampa River. This temporary modification was adopted pursuant to Regulation 31.7(3)(a)(iii) and data collected in the lower portion of Johnson Gulch near the Yampa River which showed selenium standards higher than aquatic life TVS. The Commission made no changes to the agriculture based selenium standard of 50 ug/L that was previously adopted in Segment 3b for upper Johnson Gulch, Pyeatt Gulch or any of the other fourteen gulches included in Segment 3b.

D. Modification of Water Supply Standards

Water supply standards were modified at the July 2001 hearing to conform to the changes made by the Commission in the 2000 revisions to the Basic Standards (see Regulation No. 31 at 31.11(6)). The Commission modified the water supply standards for iron, manganese, and sulfate that are based on secondary drinking water standards (based on esthetics as opposed to human-health risks). The numeric values in the tables were changed to Fe(ch) = WS (dis), Mn(ch) = WS (dis), and SO_4 = WS. These abbreviations mean that for all surface waters with an actual water supply use, the less restrictive of the following two options shall apply as numerical standards, as discussed in the Basic Standards and Methodologies at 31.11(6): either (i) existing quality as of January 1 2000; or (ii) Iron = 300 μg/L (dissolved); Manganese = 50 μg/L (dissolved); Sulfate = 250 mg/L (dissolved). For all surface waters with a “Water Supply” classification that are not in actual use as a water supply, no water supply standards are applied for iron, manganese or sulfate, unless the Commission determined as the result of a site-specific rulemaking hearing that such standards are appropriate.

White River segment 21

E. Other Site-Specific Revisions

The Commission also clarified several segment descriptions.

PARTIES/MAILING LIST TO THE JULY, 2003 RULEMAKING HEARING.

1. Colorado River Water Conservation District

2. U.S. EPA Region VIII
3. Xcel Energy
4. Colorado Division of Wildlife
5. The City of Grand Junction
6. Trapper Mining Company
7. Exxon Mobil Corporation
8. Shell Frontier Oil & Gas Inc.
9. City of Rifle
10. Town of New Castle
11. West Glenwood Springs Sanitation District