COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

WATER QUALITY CONTROL COMMISSION

5 CCR 1002-36

REGULATION NO. 36
CLASSIFICATIONS AND NUMERIC STANDARDS
FOR
RIO GRANDE BASIN

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FOR
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36.1 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.

36.2 PURPOSE

These regulations establish classifications and numeric standards for the Rio Grande Basin, including all tributaries and standing bodies of water as indicated in section 36.6. 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.

36.3 INTRODUCTION

These regulations and tables present the classifications and numeric standards assigned to stream segments listed in the attached tables (See section 36.6(4)). 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 36.6(4)). 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".

36.4 DEFINITIONS

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

36.5 BASIC STANDARDS

(1) TEMPERATURE

All waters of the Rio Grande 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. This standard shall not be interpreted or applied in a manner inconsistent with section 25-8-104, C.R.S. Effective until December 31, 2012: Segments or portions of segments that are first, second or third order streams above 7000 feet elevation and classified Aquatic Life cold 1 or 2

shall have a chronic temperature standard of 17 ºC (MWAT) with no acute standard. The following waters designated as Gold Medal fisheries by the Colorado Wildlife Commission shall have a chronic temperature standard of 18.2 ºC (MWAT):

- Rio Grande River (brown and rainbow trout fishery) from the upper boundary of Coller State Wildlife Area downstream to the Farmers' Union Canal.

Other cold class 1 or 2 segments or portions of segments shall have a chronic temperature standard of 20 ºC (MWAT) with no acute standard. Segments that are classified Aquatic Life warm 1 or 2 shall have a chronic temperature standard of 30 ºC (MWAT) with no acute standard.

(2) QUALIFIERS

See Basic Standards and Methodologies for Surface Water for a listing of organic standards at 31.11 and metal standards found at 31.16 Table III. 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 36.6(4). The column in the tables at 31.11 and 31.16 Table III 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 36.6(4).

(3) URANIUM

(a) All waters of the Rio Grande 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 30 µg/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 30 µg/l where naturally-occurring concentrations are less than 30 µg/l.

36.6 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**

(a) 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	=	fluoride
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

(b) In addition, the following abbreviations are 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.

(c) As used in the "Temporary Modifications and Qualifiers" column of the tables, the term "type i" refers to a temporary modification adopted pursuant to subsection 31.7(3)(a)(i) of the Basic Standards and Methodologies for Surface Water (i.e., "where the standard is not being met because of human-induced conditions deemed correctable within a twenty (20) year period"). The term "type iii" refers to a temporary modification adopted pursuant to subsection 31.7(3)(a)(iii) of the Basic Standards and Methodologies for Surface Water (i.e., "where there is significant uncertainty regarding the appropriate long-term underlying standard").

(3) <u>Table Value Standards</u>

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 µg/l unless noted)

PARAMETER[1]	TABLE VALUE STANDARDS[2][3]
Ammonia [4]	Cold Water $acute = \frac{0.275}{1+10^{7.204-pH}} + \frac{39.0}{1+10^{pH-7.204}}$ $chronic = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) * MIN\left(2.85,\ 1.45 * 10^{0.028(25-T)}\right)$
	Warm Water $acute = \frac{0.411}{1+10^{7.204-pH}} + \frac{58.4}{1+10^{pH-7.204}}$ $chronic\ (Apr1 - Aug31) = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) * MIN\left(2.85,\ 1.45 * 10^{0.028(25-T)}\right)$

TABLE VALUE STANDARDS

(Concentrations in μg/l unless noted)

PARAMETER[1]	TABLE VALUE STANDARDS[2][3]
	$chronic\ (Sep1-Mar31) = \left(\frac{0.0577}{1+10^{7.688-pH}} + \frac{2.487}{1+10^{pH-7.688}}\right) * 1.45 * 10^{0.028*(25-MAX(T,\ 7))}$
NH_3 = old TVS	Cold Water Acute = 0.43/FT/FPH/2[4 old] in mg/l (N) Warm Water Acute = 0.62/FT/FPH/2[4 old] in mg/ (N)
Cadmium	Acute = (1.136672-[ln(hardness) x (0.041838)])x $e^{0.9151[\ln(hardness)]-3.1485}$ Acute(Trout) = (1.136672-[ln(hardness)x (0.041838)])x $e^{0.9151[\ln(hardness)]-3.6236}$ Chronic = (1.101672-[ln(hardness) x(0.041838)] x $e^{0.7998[\ln(hardness)]-4.4451}$
Chromium III[5]	Acute = $e^{(0.819[\ln(hardness)]+2.5736)}$ Chronic= $e^{(0.819[\ln(hardness)]+0.5340)}$
Chromium VI[5]	Acute = 16 Chronic = 11
Copper	Acute = $e^{(0.9422[\ln(hardness)]-1.7408)}$ Chronic = $e^{(0.8545[\ln(hardness)]-1.7428)}$
Lead	Acute = (1.46203-[ln(hardness)*(0.145712)])* $e^{(1.273[\ln(hardness)]-1.46)}$ Chronic = (1.46203-[ln(hardness)*(0.145712)])* $e^{(1.273[\ln(hardness)]-4.705)}$
Manganese	Acute = $e^{(0.3331[\ln(hardness)]+6.4676)}$ Chronic = $e^{(0.3331\ [\ln(hardness)]+5.8743)}$
Nickel	Acute = $e^{(0.846[\ln(hardness)]+2.253)}$

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

PARAMETER[1]	TABLE VALUE STANDARDS[2][3]
	Chronic = $e^{(0.846[\ln(hardness)]+0.0554)}$
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 = $0.978\ e^{(0.8525[\ln(hardness)]+1.0617)}$ Chronic = $0.986\ e^{(0.8525[\ln(hardness)]+0.9109)}$ if hardness less than 113 mg/l $CaCO_3$

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 old) $FT = 10^{0.03(20-TCAP)}$;

Where TCAP is ≤ T ≤ 30

$FT = 10^{0.03(20-T)}$;

Where 0 is ≤ T ≤ TCAP

TCAP = 20° C cold water aquatic life species present

TCAP = 25° C cold water aquatic life species absent

FPH = 1; Where 8 <pH ≤9

$FPH = 1 + 10^{(7.4-pH)}$;

1.25 Where 6.5 ≤ pH ≤ 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) For acute conditions the default assumption is that salmonids could be present in cold water segments and should be protected, and that salmonids do not need to be protected in warm water segments. For chronic conditions, the default assumptions are that early life stages could be present all year in cold water segments and should be protected. In warm water segments the default assumption is that early life stages are present and should be protected only from April 1 through August 31. These assumptions can be modified by the commission on a site-specific basis where appropriate evidence is submitted.

(6) 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.

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

INSERT TABLES

36.7-36.9 RESERVED

36.10 STATEMENT OF BASIS AND PURPOSE

I. Introduction

These stream classifications and water quality standards for State Waters of the Rio Grande River Basin including San Luis Creek and all tributaries and standing bodies of water in all or parts of Alamosa, Conejos, Costilla, Mineral, Rio Grande, and Saguache Counties implement requirements of the Colorado Water Quality Control Act C.R.S. 1973, 25-8-101 et seq. (Cum. Supp. 1981). They also represent the implementation of the Commission's 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 Rio Grande River Basin.

Public participation was a significant factor in the development of these regulations. A lengthy record was built through public hearings held on April 14, and 15, 1981. A total of 9 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). A supplementary public rulemaking hearing was held September 15, 1981, restricted to those issues raised by the changes in the Act contained in Senate Bill 10 (1981). Such issues included but were not limited to: "The economic reasonableness" evaluation required by 25-8-102(5), the effect on water rights as required by 25-8-104; and the new considerations for the adoption of water quality standards required by 25-8-204 C.R.S. 1973, as amended. The record established in these hearings forms the basis for the classifications and standards adopted.

II. General Considerations

1. These regulations are not adopted as control regulations. Stream classifications and water quality standards are specifically distinguished from control regulations in the Water Quality Control Act, and they need not be adopted as control regulations pursuant to the statutory scheme.

2. The Commission has been requested in public hearings to rule on the applicability of these and other regulations to the operation of water diversion facilities, dams, transport systems, and the consequent withdrawal, impoundment, non-release and release of water for the exercise of water rights. The Commission has determined that any such broad ruling is inappropriate in the context of the present regulations. The request does not raise specific questions as to proposed classifications and standards. However, the Commission has taken into account the fact that some issues are unresolved in adopting classifications and standards. On January 5, 1981, the Commission adopted a policy statement on quality/quantity issues that addresses a number of these concerns. Finally, the Commission has adopted these regulations in compliance with the requirements of

the Water Quality Control Act as amended by S.B.10 in 1981 that have bearing on these issues (See e.g.) sections 102, 104, and 503(5).

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 -- 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 commutation 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 use is not in place, the use classification was modified or temporary modification to the parameters were established. Ambient quality is generally defined as the quality attributable to natural conditions and/or uncontrollable non-point sources.

   One exception to the procedure just described is for whole body contact recreation (class 1). If an active domestic waste discharge was located on the segment in question, class 1 recreation was not recommended regardless of the ambient quality, unless there was information to show that the segment was actually used for swimming. This policy was established by the WQCC in order to avoid penalizing a discharger for protecting a use which is not in place and to limit possible harm to aquatic life due to chlorine residuals.

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 all cases the basic regulation has been followed, in that an upstream use cannot threaten or degrade a downstream use. Accordingly, upstream segments of a stream are

generally the same as, or higher in classification than, downstream segments. In a few cases, tributaries are classified at lower classifications than mainstems, where flow from tributaries does not threaten the quality of mainstem waters and where the evidence indicates that lower classifications for the tributaries is appropriate.

4. There have been no “High Quality Class 1" designations assigned in this basin.

5. 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, as amended in 1981.

   (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 undully 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 these segments if and when it is appropriate to do so.

6. 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.

7. <u>Qualifiers -- Seasonal and Intermittant</u>

   These qualifiers have been used to more fully describe characteristics of certain stream segments.

8. <u>Recreation -- Class 1 and Class 2</u>

   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 S.B.10 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 water temperature and 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. here 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.

9. 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. Were 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 ambient 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 3°C 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 3°C limitation as defined is only appropriate as a guideline and cannot be rigidly applied if the intention is to protect aquatic life. n 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.

   The Commission finds that the Closed Basin Project will be likely to have a beneficial effect on aquatic habitat and any resulting temperature fluctuation is not in violation of this regulation.

4. Numeric standards for nineteen organic parameters have been adopted as a 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 many 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 of 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. In many cases, instream ambient water quality provides the basis for the water quality standards (See 7 below). In those cases where the classified uses presently exist or have a reasonable potential to exist despite the fact that instream data reflects ambient conditions of lower water quality than the table values, instream values have been used. In these cases, the evidence indicates that instream values are adequate to protect the uses. In those cases where temporary modifications are appropriate, instream values are generally reflected in the temporary modification and table values are reflected in the corresponding water quality standard. (Goals are established for the appropriate classification affected by the parameter).

   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. The Commission rejected the proposal to assign only “temporary” standards pending additional data collection to verify or modify values assigned. Concerned parties concurred that triannual review will lead to updating of standards as necessary. Furthermore, limited financial resources will be focused upon streams with permitted discharges.

8. 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 was 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.

9. Responding to the request not to average data from various reporting stations within a segment, the Commission found that it would be more accurate to consider whether there were problems in specific segments where resegmentation might be appropriate if there were extreme values in the data recorded.

10. 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 than 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, as well as 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 nevertheless justified since it provides the most meaningful index of stream quality of all methodologies proposed for setting stream standards.

Finally, the fairness and consistency of the use of any methodology in setting standards must turn on 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.

11. 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.

12. 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.

13. 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.

14. 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.

15. <u>Hardness/Alkalinity</u>

    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 from 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

On some Class 2 Warm Water Aquatic Life streams containing similar aquatic communities to those found in the plain streams of the South Platte & Arkansas Basins, .1 mg/l unionized ammonia was selected as being appropriate to protect those species.

These streams generally contain both lesser numbers and types of species than those inhabiting class 1 streams due to physical habitat characteristics, flow or irreversible water quality characteristics. The Commission felt that the incremental expense to meet a 0.06 mg/l unionized ammonia standard for present or potential discharges along these streams cannot be justified. Flow in these segments is often intermittent or highly impacted by diversions.

Specifically, the Commission has relaxed unionized ammonia standards to .1 mg/l or greater on such stream for the following reasons:

1. limited nature of the aquatic life present;

2. limited recreational value of species present;

3. habitat limitations, primarily flow and streambed characteristics, that impose significant limitations on the nature of aquatic life, even if ammonia reductions were attained;

4. rapid dissipation of ammonia in streams, reducing the impact of such discharges downstream; and

5. economic costs of ammonia removal, especially where such costs would fall primarily on publicly-owned treatment works, and while the availability of construction grant funds is questionable.

6. Biosurveys with support from a bioassay conducted on fathead minnows performed in the Cache la Poudre River show that a .1 mg/l standard is appropriate to protect existing biota in that stream. The results of these studies may be reasonably extrapolated to similar plains streams; i.e., those streams that demonstrate similar chemical, physical, and biological characteristics.

Not all warmwater streams are comparable in terms of flow habitat, and types and numbers of species of aquatic life. Therefore, some variations in an appropriate ammonia standard must be tolerated, with the objective of protecting existing aquatic life. The Commission found this approach preferable to totally removing the aquatic life classification from impacted or marginal aquatic life streams.

VII. Water Quality Standards for Cyanide

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. 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.

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. While cyanide has received special treatment in cases discussed in the segment - by - segment section which follows, a free cyanide standard based on Table Values has been established for most segments.

IX. 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.

X. 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 judgement 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 would impose no additional economic burdens and would therefore be reasonable.

XI. Classifications and Standards - Special Cases

1. Page 1, Segment 2(a) and 2(b), Rio Grande River (proposed as page 1, segment 2)

The Rio Grande and Santa Maria Reservoirs were resegmented as 2(b) because of fluctuating water levels which precluded their use as a class 1 cold water habitat. On Segment 2(b) the water supply classification was removed as there is no water supply in place nor is it reasonably expected in the forseeable future as testified to by the Rio Grande Water Users Association. These changes were made in recognition of conditions caused by the exercise of agricultural water rights.

2. Page 1, Segment 3

On the basis of testimony received from the Colorado Water Quality Control Division and the Rio Grande Water Conservancy District, the Commission concluded that the metals values proposed by the Division were appropriate. Not withstanding the impact of diversions on stream flows, the stream segment as a whole has suitable aquatic life habitat to support the class 1 designation.

Examination of the data supported the Division's approach of pooling the data from the three reporting stations to describe existing quality in this segment.

3. Page 2, Segment 5(a), & 5(b) (proposed as page 1, segment 5)

The Commission accepted the resegmentation stipulated to by all the parties to better describe differences in water quality and habitat.

Segment 5(a) was changed to recreation class 2 consistent with the reasoning expressed in the general provisions of this basis and purpose. In adopting the class 1, cold water, aquatic life classification it was found that the habitat is sufficient to support a variety of aquatic life. Water supply and agriculture were removed. The uses are not in place and not reasonably expected.

For segment 5(b) the benthic surveys support the class 1 aquatic life designation. Standards for copper and silver were changed from proposed values due to inclusion of Chevron data.

.4. Page 1, Segment 6(a) and 6(b) (proposed as page 1, segment 6)

Controversy over metals standards in testimony concerning segment 6(b) was resolved with respect to cadmium and zinc after the Commission evaluated additional data presented to it by the Chevron Corporation during the hearing. The values were changed from those proposed by the Division.

.5. Page 2, Segment 7

There was controversy over the issue on segment 7 protecting the mainstem of the Rio Grande from degradation by this segment. The testimony went to whether a goal of aquatic life class 2 with a temporary modification of ambient conditions should be adopted. The Commission resolved against such a goal. Cleaning up the mine tailing debris and stream bed is not likely to occur within 20 years. The technology may be available, but no single party or government agency appeared to be likely to take on the task. Furthermore, improvement of not only the water quality but also the stream bed to achieve an aquatic life goal makes attainment of the goal uncertain. An agricultural use is in place and is apparently not impaired by metals in excess of table values.

6. Page 2, Segment 9

Evidence was presented that there was a wastewater discharge to the segment. No evidence was presented on behalf of that discharger. The Commission concluded that it was unlikely that there would be an impact on this discharger from the standards established due to minimum daily flow of 10 CFS in the stream.

7. Page 3, Segment 12

Aquatic class 1, warm water rather that aquatic life class 2, warm water or cold water was assigned in recognition of reduced flows for 1/4 mile downstream of the Excelsior Ditch. However, the stream in this segment is a perennial stream with Increases in flow expected in the future as a result of the anticipated Closed Basin discharge downstream of Alamosa. A seasonal qualifier was adopted to reflect that flows and water quality will vary with the irrigation season. However, no adverse impact upon Alamosa's wastewater discharge is anticipated because of the existing dilution to discharge ratio and the presence of an obviously excellent fishery through Alamosa.

8. Page 3, Segment 13

This segment was classified cold water class 1, aquatic life, despite the fact that segment 12 was designated warm water class 1, aquatic life. This was because there is no impact of the Closed Basin discharge upon this segment 13 according to the testimony of Mr. Thomas of the Bureau of Reclamation. Furthermore, segment 13 contains canyons where cooling occurs. In classifying this segment, the Commission recognized that this segment feeds a prime fishery immediately downstream in New Mexico.

9. Page 3, Segment 15(a) and 15(b) (proposed as page 3, segment 15)

At issue for 15(a) was whether the aquatic life classification should be retained as proposed, deleted, or whether the segment should be classified for any uses at all. The Commission concluded that these streams are dry for long periods of time and therefore do not warrant an aquatic life classification. There was testimony that waters from this segment were used for agriculture. A potential discharger would be restricted to protect the agricultural use. Additionally recreation class 2 was retained as a public health consideration.

15(b) Was separated in order to give protection to the Monte Vista and Alamos National Wildlife Refuge.

10. Page 5, Segment 21

An interrupted flow qualifier was added by the Commission at the request of the Rio Grande Water Conservancy District on the basis of the irregular draining of Terrace Reservoir.

11. Page 5, Segment 22

An interrupted flow qualifier was added by the Commission at the request of the Rio Grande Water Conservancy District due to their testimony on the impact of filling Terrace Reservoir.

12. Page 5, Segment 23

13. Page 5, Segment 24

The Water Supply Classification was removed by the Commission since it is a use not in place, nor reasonably expected in the future. The action was based on a recommendation contained in the 208 Plan and the Division's rationale.

14. Page 6, Segment 29

Due to testimony on the existence of sensitive warm water species in this segment .06 mg/l unionized ammonia was assigned to protect these species while not adversely effecting the Magnesia wastewater treatment facility.

15. Page 6, Segment 31(b) (proposed as page 3, segment 14)

For 31(b), testimony by Trout Unlimited indicated this segment contained the only native population on public land in Colorado of the Rio Grande Cut Throat Trout, which is deserving of the higher protection provided by a classification of high quality class 2, which the Commission assigned.

16. Page 9, Segment 6

The Commission felt that evidence indicated that carp were present in the segment and they would be adequately protected by assigning an ammonia standard of .1 mg/l.

17. Page 10, Segment 9

The Commission found that no aquatic life can survive in the segment due to elevated levels of heavy metals coming from the drainage from abandoned mines.

18. Page 10, Segment 13

Aquatic life was removed by the Commission from the proposed classification due to the Division's rationale that the segment is dry for much of the year.

.1 unionized ammonia was chosen to avoid imposing the likely high cost of treatment beyond secondary upon Saguache, a severely economically depressed town (as noted by administrative notice of the Commission), and since there was no testimony nor evidence concerning sensitive species in this segment, and because the stream to which Saguache discharges disappears before reaching San Luis Creek.

36.11 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE: June, 1988 Hearing on Segments 2a and 3

The provisions of 25-8-202(1)(b) and (2); 25-8-204; and 25-8-207 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), and 24-4-103(8)(d), C.R.S., the following statements of basis and purpose and fiscal impact.

BASIS AND PURPOSE:

The standards for cadmium, copper, lead, mercury, and zinc were reviewed in response to a petition by Homestake Mining Company submitted in 1987. Based on additional and more detailed water-quality data for these reaches, it was determined that the standards established in 1981 were inconsistent with the available water-quality data. Changes were therefore made for all parameters except mercury and except for copper in Segment 3. Because available data represented actual instream conditions, no impacts on classified uses were anticipated.

FISCAL IMPACT STATEMENT:

A fiscal analysis indicates that the costs associated with the changes will be limited to the costs for conducting the standards-setting hearing and of making the administrative changes in the rules. No substantial additional costs are thought to accrue due to treatment requirements. Precise evaluation of treatment costs will depend on low-flow rates and concentrations encountered by dischargers. No costs will accrue due to changes in classified uses of the segments.

Parties to the hearing:

Homestake Mining Company

36.12 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE; MAY, 1989 HEARING ON MULTIPLE 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 3.6.6(2). The purpose of this language is to explain the new references to "table value standards" (TVS) that are contained in the Tables. The other changes considered and adopted are addressed below by segment.

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

Rio Grande, segments, 4, 5a, 6a, 8, 9, 10, 14, 16, 17, 24, 27, 28, 30, 31a, 32, 34, 36, 38, 39, 41
Closed Basin, segments 2, 4, 12

Numerical standards for metals for these segments have in most instances previously been based on table values contained in Table III of the 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 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, in addition to these standards changes, the use classifications have been revised where necessary so that each of these segments has the following classifications:

Recreation - Class 1
Cold Water Aquatic Life - Class 1
Water Supply
Agriculture

These classifications are appropriate because the existing quaity is adequate to protect these uses.

Third, a High Quality 2 designation has been established for each of 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.

Finally, in addition to these generally applicable changes, certain specific changes were made for some segments in this group. The description of segment 10 has been revised to change the dividing line between segments 10 and 11, since the previous reference point is no longer in existence. The description of segment 14 has been revised, to correct a typographical error and make this segmentation compatible with segment 4. Segment 27 has been consolidated into segment 26 to simplify the tables, due to similarities in uses and quality, and is no longer listed as a separate segment. Segment 31a has been consolidated with segment 31b (together now designated as segment 31) to simplify the tables, due to similarities in uses and quality.

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

Rio Grande, segments 1, 26, 31b
Closed Basin, segment 1

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. Rio Grande segment 1 and Closed Basin segment 1 are waters in Wilderness areas, Rio Grande segment 26 is proposed for wild and scenic river designation, and Rio Grande segment 31b is the only native habitat on public lands in Colorado for the Rio Grande cutthroat trout.

In addition, the following use classifications, and associated table value standards, have been adopted for these segments:

Recreation - Class 1
Cold Water Aquatic Life - Class 1
Water Supply
Agriculture

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

Finally, in addition to these generally applicable changes, the description of segment 26 has been revised to consolidate former segment 27 into this segment, and segment 31b has been consolidated with segment 31a, into new segment 31. These changes simplify the tables, due to similarities in uses and quality.

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

Rio Grande, segments 15a, 15b, 19, 20, 23, 25
Closed Basin, segments 3, 9

These segments all qualify for a Use-Protected designation based on their present classifications. Specifically, Rio Grande segments 15a, 19, and 23, and Closed Basin segment 9 have no aquatic life classification. Rio Grande segments 15b and 25 and Closed Basin segment 3 have warm water class 2 classifications. Rio Grande segment 20 has a cold water class 2 classification. The existing standards are recommended to be retained because the segments have no metals standards or in the case of Rio Grande segment 20 have high ambient standards for some metals, exceeding table values, based on total recoverable metals data, and no dissolved metals data is available at this time.

In addition to these generally applicable changes, the description of segment 15a has been revised to correct a typographical error and make this segmentation compatible with segment 4. Also, as discussed further below, segment 19 has been divided into segments 19a and 19b.

D. New Use-Protected Designations; Revised Numeric Standards

Rio Grande, segments 2b, 11, 13, 21, 29, 33, 35, 37, 40
Closed Basin, segments 5, 6, new 7

These segments all qualify for a Use-Protected designation. Specifically, Rio Grande segments 2b, 11, 29, 33, 35, 37 and 40, and Closed Basin segments 5 and 6 and new segment 7 qualify as Use-Protected because they are classified aquatic life cold or warm water class 2. Rio Grande segment 13 is Use-Protected because existing quality for lead, mercury and silver is worse than that specified in Table III of the Basic Standards and Methodologies for Surface Water. Rio Grande segment 21 (Terrace Reservoir) is designated Use-Protected because it was identified in

the 1988 Section 305(b) Report as being impacted by a combination of metals loading and fluctuating reservoir levels.

The description of segment 11 has been revised to change the dividing line between segments 10 and 11, since the previous reference point is no longer in existence.

Numerical standards for metals for Rio Grande segments 2b, 11, 21, 29, 33, 35, 37 and 40 have in most instances previously been based on table values contained in Table III of the 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.

For Rio Grande segment 13, acute and chronic table value standards have been adopted except for lead, mercury, and silver. For lead and silver, ambient-quality-based standards are adopted based on the 85th percentile of available dissolved metals data. For mercury, a one-year temporary modification is established based on existing ambient quality, with an underlying standard based on the “final residual value” established in Table III of the Basic Standards and Methodologies for Surface Water, to protect human health from fish consumption. The temporary modification should allow time for collection and analyses of fish tissue for mercury. Should such analyses show no problems with mercury, the Commission will reconsider the appropriateness of the underlying standard in a subsequent hearing. Otherwise, the underlying standard will go into effect when the temporary modification expires. Also for segment 13, the recreation classification has been changed from class 2 to class 1, with a corresponding change in the fecal coliform standard, based on new information regarding existing quality.

For Closed Basin segment 5, acute and chronic table value standards have been adopted except for copper, iron, lead, mercury, silver, and zinc. For all except mercury, ambient quality-based standards have been adopted. These standards are based on the 85th percentile of available data, except for zinc which is based on the highest non-runoff value since there are only four data points. For mercury, a one-year temporary modification based on existing ambient quality and an underlying standard based on the “final residual value” have been established, in the same manner as described above for Rio Grande segment 13.

For Closed Basin segment 6, Head Lake has been removed and designated as a new segment 7. For segment 6, acute and chronic table value standards have been adopted except for iron, manganese, mercury, and selenium. For all except mercury, ambient quality-based standards have been adopted based on the 85th percentile of available data. For mercury, a one-year temporary modification based on existing ambient quality and an underlying standard based on the “final residual value” have been established, in the same manner as described above for Rio Grande segment 13.

For new Closed Basin segment 7, acute and chronic table value standards have been adopted except for iron, lead, and mercury. For all except mercury, ambient quality-based standards have been adopted based on the 85th percentile of available data. For mercury, a one-year temporary modification based on existing ambient quality and an underlying standard based on the “final residual value” have been established, in the same manner as described above for Rio Grande segment 13.

E. Other Revisions

1. Rio Grande, segment 12:

The recreation classification for this segment has been changed from class 2 to class 1, with a corresponding change in the fecal coliform standard, based on new information regarding existing quality and an existing use of this segment for swimming. In addition, acute and chronic table value standards have been adopted for this segment except for lead and mercury. For lead, an ambient quality-based standard has been adopted based on the 85th percentile of available data. For mercury, a one-year temporary modification based on existing ambient quality and an underlying standard based on the "final residual value" have been established, in the same manner as described above for Rio Grande segment 13. Based on current information, no water quality-based designation is being adopted for this segment at this time.

2. Rio Grande, segment 19:

This segment has been divided into segments 19a and 19b. Segment 19a is the same as the previous segment 19, with no change in classifications or standards, except that the upper portion of Wightman Fork has been removed from the segment. New segment 19b consists of the upper portion of the Wightman Fork, which is of better quality than the waters in segment 19a. Reproducing brook and cutthroat trout populations are present in segment 19b. A cold water aquatic life class 1 classification and corresponding acute and chronic table value standards have been added to this segment.

3. Closed Basin, new segment 10:

This new segment has been established for Sand Creek, in order to apply appropriate classifications and standards to these waters. The classifications for the new segment are the same as for Closed Basin segment 2, which previously included the upper portion of Sand Creek. Sand Creek supports trout populations throughout its entire length. Appropriate table value standards for applicable classifications have also been adopted.

Parties to the May, 1989 Hearing:

Colorado Division of Wildlife
Summitville Consolidated Mining Company, Inc.
Rio Grande Water Conservation District

36.13 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 3.6.6(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.

36.14 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.

36.15 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: NOVEMBER 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 the 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 revisions to the Classifications and Numeric Standards for Rio Grande River Basin (3.6.0) resulting from the November, 1993, rulemaking hearing represent the first comprehensive examination of the basin's water quality since the standards were first adopted in May, 1982. This comprehensive review was facilitated by the basin monitoring program of the Water Quality Control Division, the Rio Grande Basin being the first basin to be studied by the Division. The following is the basis and purpose for the changes made organized according to topics. The specific rationale for each segment change is contained in the Water Quality Control Division's Exhibit 2 introduced at the hearing.

A. Resegmentation, Renaming, and Consolidation of Segments.

The Basin was previously divided into two sub-basins, the Rio Grande and the Closed Basin. Because of the relatively large size of the Rio Grande sub-basin and the size and number of segments in the Conejos and Alamosa/La Jara sub-basins, the Division recommended creating an Alamosa/La Jara/Conejos sub-basin and renumbering the segments within them. The Commission noted that this recommendation would result in the separation of segment 15a, which is a very large segment representing a diverse geographic area and several different types of streams. The Commission felt that resegmentation of the large sub-basin would result in a more precise application of classifications and be more understandable by the casual reader. Similarly, the Commission considered the consolidation of segments proposed by the Division to be good housekeeping and better reflective of the nature of basin waters. The Commission was supportive of the deletion of the English term "River" when used with Spanish named streams, and consequently revised the title of the regulation to RIO GRANDE BASIN, 3.6.0, making similar changes in the segment descriptions for the Rio Grande and Rio San Antonio.

Alamosa Segments 2 and 3. Based on the evidence presented at the hearing, the Commission has adopted two changes to the definition of these segments of the Alamosa River. One change adopted is the expansion of segment 2 of the Alamosa to include the reach of existing segment 3 between Iron Creek and Alum Creek. Data collected by the USGS in 1993 indicates that the water quality of this reach is more similar to that found in segment 2 than to the water quality of segment 3 and is likely to meet the table value standards applicable to segment 2 at least 85% of the time. The inclusion of this reach in segment 2 will also provide additional protection to a fishery which, according to the Division of Wildlife, the reach currently supports.

The other change adopted by the Commission is the split of existing segment 3 into segments 3a and 3b immediately above the confluence of Wightman Fork. This split is logical given the presence of the Summitville mine site and its loading contribution to new segment 3b via the Wightman Fork. While the existing classifications for segment 3 will be retained in both newly created segments, temporary modifications for segment 3b must be adopted to reflect the segment's conditions while the Summitville site clean up proceeds. In addition, due to the past and ongoing treatment at the Summitville site, the hardness in the two segments is different, further justifying a split of the segment.

B. Creation of New Segments

As a complement to the resegmentation discussed above, it was necessary to establish several new segments in order to provide complete geographic coverage of the Basin. In addition, the Basin Wide Initiative identified several streams that are sufficiently different with regard to potential uses that they should be identified by their own segment descriptions. They are the mainstem of Cat Creek, the mainstem of the Rio San Antonio from Highway 285 to the Conejos River, and the mainstem of Hot Creek (a tributary to the La Jara Creek). The Division proposed separating the segment descriptions for the Alamosa and Monte Vista National Wildlife refuges because of their geographic separation and because the source of water to each is significantly different. The Commission concluded that all the Division recommendations related to the creation of new segments were justified and were necessary to provide complete geographic coverage of basin streams.

C. Incorporation of Wetlands into Segment Descriptions

With the adoption of revisions to 3.1.0, Basic Standards for Surface Water, incorporating wetlands into the classification and standards structure it became necessary to reflect those provisions in this first triennial rulemaking since 3.1.0 was revised. The Division proposed adding "wetlands" to every segment description where formerly the description read "tributaries, lakes, and reservoirs". The Division also proposed creating new segments solely for tributary wetlands where the existing "all tributaries" classification and standards were insufficient to protect wetlands. The Commission adopted these Division recommendations because they correctly implemented the recent changes to the Basic Standards. The Commission noted that it was appropriate to consider all tributary wetlands in the flood plain of a mainstem classified segment as having the segment's classifications and standards even though the description did not specifically include the term "wetland".

D. Revision of Classifications to meet Fishable/Swimmable Goals of the Clean Water Act

Several segments within the Rio Grande basin did not have use classifications which met the fishable/swimmable goals of the Clean Water Act. The Commission, Division, and EPA Region VIII have been working on a strategy to address this problem, particularly on streams that have a recreation 2 classification and fecal coliform standards of 2000/100ml. Consistent with the approach recently adopted by the Commission, three segments were proposed for reclassification from recreation 2 to recreation 1. These changes were based on actual use of the segment. A change in the fecal coliform standard from 2000/100ml to 200/100ml was also recommended on recreation 2 segments that do not have point source discharges, or if there are dischargers to the segment, no adverse impact from the more restrictive standard is expected.

The Division also identified several segments where it was appropriate to modify the aquatic life classification. These modifications include adding an aquatic life classification to a segment that formerly had no aquatic life classification, changing the classification from class 2 to class 1, or changing the classification from warm to cold water. In each case, the Division recommended that appropriate numeric standards accompany each change in classification.

The Commission felt that the Division recommendations were appropriate and consistent with the Basic Standards for Surface Water, and consequently, adopted the recommendations.

E. Application of Numeric Standards for Organics to Class 2 Aquatic Life Segments where Fishing is a Significant Activity

Human health based organic standards (Basic Standards for Organic Chemicals, 3.1.11 (3) of the Basic Standards and Methodologies) apply to all segments which are classified aquatic life 1 and/or water supply. Human health based organic standards are also appropriate for class 2 aquatic life segments where fishing is a significant activity. The Division recommended that human health based organic standards be adopted for the following class 2 aquatic life segments:

La Jara Creek Segment 12
Conejos River Segment 15, 16
Rio San Antonio Segment 18

The Division testified that although these segments were appropriately classified Class 2 Aquatic Life, there was sufficient evidence that fishing is a significant activity of these segments to warrant the application of the "water and fish" organic standards. The Commission concurred with the Division position and adopted the recommendations by including the notation "water and fish organics" in the Qualifiers column.

F. Application of Numeric Standards for Inorganics for Certain Class 2 Aquatic Life Segments

Several aquatic life class 2 segments of the Rio Grande Basin lacked numeric standards for parameters contained in Tables II and III of the Basic Standards and Methodologies (3.1.16). These standards, or ambient based standards where appropriate, were recommended for application to all aquatic life class 2 segments which lacked those standards in the previous rule. The Commission agreed with the recommendation and adopted those standards as proposed by the Division.

G. Retention of Non-aquatic Life Classification for Several Basin Segments

Several segments in the Rio Grande Basin have not been classified for aquatic life. These include portions of Willow Creek, Kerber Creek, streams in the Summitville area, and tributaries to the Rio Grande in the lower, drier southern portion of the basin. The Division acquired information for this hearing indicating that most of those segments continue to fail to meet the criteria for an aquatic life classification. Exceptions include Cat Creek Hot Creek, lower Rio San Antonio, and wetlands in the lower basin, segments now recommended for an aquatic life classification. The Commission considered the data presented by the Division as the equivalent of a use attainability study for each segment, and, as a consequence, did not adopt the aquatic life classification for the segments listed because the use was currently non-existent and unlikely to be attainable within a twenty-year time frame.

H. Agriculture Classifications

At the hearing, Climax Molybdenum raised an issue regarding the appropriateness of an "agriculture" use classification for Rio Grande segments 7 and 9; Alamosa segments 3, 5, 6, 7 and 20; and Closed Basin segments 7 and 11, based on information introduced into the record indicating that existing agricultural uses may not be in place on these segments. The Commission notes that classifications may be established based on (1) existing uses, (2) adequate quality and reasonably expected future uses, or (3) uses for which water is to become suitable as a goal. All of the segments listed have an existing agricultural use classification, and no change in those classifications was proposed in this hearing. Therefore, the basis for the existing classifications was not specifically reviewed for these segments in this hearing. If a future issue should arise regarding the appropriateness of an agriculture classification for one or more of these segments, the Commission can review the available information to determine whether a classification should be deleted at that time.

I. Revisions to Water Quality Standards for Specific Segments

The Division presented extensive information on the chemical quality of basin streams gathered during the prior year of intensive basin monitoring or available from earlier monitoring. The net result of that information was a showing that the vast majority of Rio Grande basin streams meet Table Value Standards (TVS) for all parameters. For those segments that were exceptions to the general rule, the Division recommended either ambient based standards, site-specific standards, or temporary modifications with underlying TVS. Ambient standards were recommended for the

Alamosa River (iron), and Wightman Fork (cadmium and zinc). Site-specific standards for metals were recommended for portions of willow creek near Creede, and temporary modifications for the Alamosa River below Wightman Fork and Kerber Creek. The Commission concluded that the Division recommendations for revised standards were appropriate and consistent with the Basic Standards, and adopted them as proposed.

Alamosa River Segments 3a and 3b. For the newly created segments 3a and 3b, the Commission has adopted table value standards for all metals except iron, copper and aluminum. Ambient standards for iron were adopted for segments 3a and 3b, based on historic and recent data which indicates the presence of naturally elevated levels of these pollutants. The adopted ambient values for both segments are based on data obtained in segment 3a because the ambient conditions in segments 3b have been impacted by the Summitville site. Under the Basic Standards, the Commission may adopt ambient standards only where the ambient conditions are naturally-occurring or are the result of irreversible human impacts. At this point in time, it is too early to determine whether the Summitville site has irreversibly impacted segment 3b of the Alamosa River. Therefore, the iron ambient standard adopted for segment 3b is the same as applicable to segment 3a.

The Commission has also adopted an ambient standard for copper but only for segment 3b. A chronic, ambient standard for copper for segment 3a would be inappropriate because, given the low hardness of this segment, the chronic, ambient standard based on the 85th percentile of the copper data for segment 3a would exceed the acute table value standard for that parameter. This result is precluded by the Basic Standards. The Commission also adopted a temporary modification to the acute TVS for copper for segment 3b, effective for three years, which is based on preventing acute toxicity to brook trout.

Finally, evidence introduced at the hearing indicates that while no standard for aluminum is currently in place for existing segment 3, aluminum is a substantial problem in that segment. The 1993 USGS data introduced by the Division indicates that nonpoint source contributions of aluminum to segment 3a are extremely elevated during low flow conditions and when pH levels are below 5.0. To reflect these conditions, the Commission has adopted acute and chronic TVS standards for both segments but specified the chronic TVS would not be applicable between October 1 and April 30.

Alamosa River Segments 5 and 8. The noticed proposal recommended ambient standards for iron and zinc for segment 5 of the Alamosa River, based on recent data from that segment. The Division of Wildlife presented evidence which indicates that this segment met table value standards for these parameters in 1987. The evidence also shows that in 1987, there was an abundance of brook trout in the segment. The evidence indicates that the higher levels of zinc and iron and subsequent disappearance of the brook trout population is due to the dumping of waste work into or near the stream by Summitville's activities. Since the higher levels of those parameters are not naturally occurring but human induced, the Division has recommended and the Commission is adopting table value standards for zinc and iron with temporary modifications to reflect the segments' conditions while clean up continues.

The noticed proposal also recommends the adoption of a class 1 aquatic life classification for Segment 8 of the Alamosa. The Division subsequently recommended to withhold upgrading at this time pending the results of additional studies scheduled to be conducted in the reservoir, to determine its suitability for upgrade. Following the Division's recommendation, the Commission is not adopting the class 1 aquatic life classification for segment 8 at this time.

Kerber Creek - Closed Basin Segments 8, 9, and 11. Given the ongoing studies and voluntary clean up plans by ASARCO and the Colorado Department of Health for the Bonanza mining district, the Division and ASARCO jointly requested the Commission to segregate these segments for consideration in a separate rulemaking hearing. A joint stipulation was submitted to the Commission to this effect. The Commission has granted the Division and ASARCO

stipulation. A rulemaking hearing to consider these segments of the Closed Basin sub-basin has been scheduled for June of 1994.

PARTIES TO RULEMAKING HEARING NOVEMBER, 1993

1. Colorado Division of Wildlife
2. Metro Wastewater Reclamation District
3. Division of Minerals and Geology, Colorado Department of Natural Resources
4. ASARCO Inc.

36.16 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE, JUNE 6, 1994 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 Division proposes the following revisions to the segmentation, classification, and standard for segments 8, 9, and 11 of the Closed Basin (Kerber Creek and its tributaries). The Division proposes to revise the segment descriptions for segment 8, to divide segment 9 into segments 9a and 9b, and to amend the description for segment 11. Water quality standards based on dissolved criteria are proposed for segment 8. Water supply and agricultural use classifications and corresponding standards are added as goals for segment 9a. Cold water aquatic life class 1, water supply, and agriculture are proposed to be added as goals for segment 9b together with the corresponding standards. Temporary modifications based on the existing quality of segments 9a and 9b are proposed through June 30, 1997. Fecal coliform standards based on the 200/100ml criterion are proposed for segments 8, 9a, and 9b. The specific changes to the segment descriptions, use classifications, and water quality standards are shown in Table 1.

BASIS AND PURPOSE

The mainstem and tributaries to Kerber Creek in the Closed Basin portion of the Rio Grande Basin, including all or portions of segments 3, 8, 9, and 11 were withdrawn from consideration at the hearing for amendments to the water quality classifications and standards for the Rio Grande Basin, 3.6.0 (5 CCR 1002-8) held on November 1, 1993 in Alamosa Colorado. The Water Quality Control Division (Division) and ASARCO Incorporated (ASARCO) jointly stipulated to setting aside these segments for a later site-specific hearing because of efforts already underway by the Hazardous Materials and Waste Management Division (HMWMD) and ASARCO to collect additional samples which would better describe the water quality of Kerber Creek and several of its tributaries.

The description of segment 8, which formerly included the headwaters of Kerber Creek and Squirrel Creek, was modified to include all of the small streams, most of which are on National Forest land, that are unimpacted by the mining that has occurred in the Kerber Creek watershed. Water quality samples collected from several of these streams between 1990 and 1993 indicate that the quality is better than TVS for the existing classified uses.

The Division proposes to split segment 9, which includes the impacted mainstems of Kerber Creek, Squirrel Creek, Copper Gulch and Rawley Gulch, into two segments. Proposed segment 9a includes the portions of Squirrel Creek, Rawley Gulch, and Kerber Creek and their tributaries that have been impacted by mining. Major sources of metals and acid are from Squirrel Creek which includes mill tailings and adit drainage from the Rawley #12 mine, and from Rawley Gulch. Water supply and agricultural classifications and corresponding numeric standards were added as goals. Temporary modifications, which are based on the existing quality for cadmium, copper, lead, iron, manganese, and zinc, have been adopted for the period that remediation activities are expected to occur. Segment 9a currently does not have an aquatic life use classification, and as a result of a use attainability analysis performed by the

Division, one is not proposed. Human-caused conditions and sources of pollution likely prevent the attainment of an aquatic life use within a twenty year period.

The numeric standards adopted reflect the water supply classification and are intended to protect shallow wells drilled in the alluvium along Kerber Creek which may be used as a domestic source by residents of the community of Bonanza. Water from Kerber Creek is also used to water livestock. A site-specific standard for manganese (water supply) was adopted because it is unlikely than a 50 ug/l standard can be achieved; moreover, the manganese criterion is based on aesthetics and not human health. The Commission adopted a copper standard of 1,000 ug/l to protect drinking water, since no specific scientific support could be identified for the 500 ug/l standard proposed for livestock watering.

Proposed segment 9b begins at Brewery Creek, which is the largest tributary unimpacted by metals, and extends to the confluence with San Luis Creek. The upper end of segment 9b is seriously impacted by 9a and from several large piles of tailings deposited along Kerber Creek downstream of Brewery Creek. Cold water aquatic life 1, water supply and agricultural classifications were added as goals with corresponding numerical standards. Temporary modifications, based on the existing quality for cadmium, copper, lead, iron, manganese, and zinc, were adopted for the period that remediation activities are expected to occur. Numeric standards adopted will avoid chronic toxicity to brook trout.

The water hardness of segment 9b increases in a downstream direction and metal concentrations decrease. Dilution from Brewery Creek further reduces the metal concentrations. The Colorado Nonpoint Source program found that some aquatic life is already present in the lower reach of the segment, mainly between Little Kerber Creek and San Luis Creek. This 10 mile reach of Kerber Creek will significantly benefit from remediation activities undertaken in segment 9a and the upper portion of 9b. Because of the increasing hardness and precipitation of metals the lower end of the segment should support brown trout. Monitoring of San Luis Creek by the Division in 1992 found both brook and brown trout below the confluence of Kerber Creek. Water from this segment of Kerber Creek is used for watering livestock and irrigation.

It is recognized that segment 9b of Kerber Creek, which is more particularly described as the mainstem of Kerber Creek, from the confluence with Brewery Creek to the confluence with San Luis Creek, could not currently meet a cold water aquatic life class 1 classification. In addition to water quality, currently physical characteristics, such as stream bank erosion, sparse vegetation, and broad shallow morphology in some areas, may inhibit aquatic habitat. These have been caused by past and present land use practices. Therefore, this classification is placed on this segment as a goal qualifier. It is recognized that ASARCO will direct all remediation that effects segment 9b of Kerber Creek to the attainability of a classification of cold water aquatic life class 1. However, full aquatic life class 1 use on segment 9b may require additional efforts to improve the physical conditions of the stream by persons who are not parties to this rulemaking and on property over which ASARCO has no control. This classification is intended to encourage such efforts.

Waters in new segment 11 were contained in segment 2 prior to the November 1, 1993 rulemaking hearing and included all tributaries in the Closed Basin which are in the Rio Grande National Forest. Several streams in new segments 8 and 9a were in the former segment 2. New segment 11 is mostly comprised of streams from the east side of the Closed Basin that drain the Sangre de Cristo Range. Many are within the newly designated Sangre de Cristo Wilderness Area. No changes to the classifications are proposed, and TVS based on dissolved metals are already in place.

PARTIES TO THE RULEMAKING HEARING

1. Colorado Department of Health
2. ASARCO, Inc.

36.17 <u>STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE (1995 Silver hearing)</u>

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

36.18 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; MAY 12, 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 following revisions to the standards for segments 9a and 9b of the Closed Basin (Kerber Creek and its tributaries) were made. Changes to the water quality standards for cadmium and selenium in 9a are reflective of the changes to the Basic Standards made in 1994 (cadmium and 1995 (selenium). In addition, a change to the standard for sulfide in 9a was made because the existing standard was erroneously listed as the value for an aquatic life use which is not an adopted use for segment 9a. The expiration date for temporary modifications in both 9a and 9b were extended to June 30, 2000. In segment 9b the standards for selenium were also changed to reflect the 1995 changes to the Basic Standards and numeric temporary modifications for cadmium, copper, manganese and zinc were adopted along with a new expiration date. The numeric values for the temporary modifications were based on data collected during low flow in 1994, 95 and 96 by the Group at their station KC-6. The numeric values are intended to represent the existing quality in segment 9b as measured at one point (KC-6) in the segment. The numeric values at monitoring point KC-6 are based only on single measurements made during individual high-flow and low-flow sampling events during the years 1994, 1995 and 1996, and thus do not fully represent the range of metals concentrations that may be observed. Additional data will be collected in 1997 on a more frequent basis at KC-6 to further assess existing quality at KC-6 under a wider range of flow conditions. The expiration date was extended to allow the Group to continue their voluntary cleanup efforts in segments 9a and 9b which began in 1994 and are not expected to be completed until 2000.

It is recognized that the Bonanza Mining District Group (the Group) will direct remedial efforts toward attainment of long-term classification and numeric standard goals. However, attainment of long-term goals may require additional efforts by others to improve physical conditions of the stream and/or address

metals loading sources on property over which the Group has no control or responsibility. Long-term classification goals are intended to encourage such efforts.

36.19 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.

36.20 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; JUNE, 1998 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 the 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. Overview

As part of the CERCLA activities at the Summitville Mine site, the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division (HMWMD) was tasked by EPA to perform a Use Attainability Assessment (UAA) on the Alamosa River system. The HMWMD entered into a contractual arrangement with the Colorado Department of Natural Resources, Division of Minerals and Geology (DMG) and Division of Wildlife (DOW) for services to perform the UAA with the goal to determine the ambient conditions of the river system for two periods: 1) the period preceding Galactic Resources Limited's activities (approximately pre-1984), and; 2) the pre-mining period (approximately pre-1870). For this assessment, DMG and DOW were to use the EPA UAA protocols as guidance. Information developed in the UAA provides the primary scientific and technical basis for the revised water quality classifications and standards adopted by the Commission in this rulemaking.

The notice for this rulemaking included several proposals by the HMWMD and DMG that were later withdrawn from consideration. In particular, proposals for less stringent water quality classifications, standards and temporary modifications for several segments downstream of the Wightman Fork were withdrawn pending further analysis and discussion of the Summitville cleanup options. In this rulemaking, the Alamosa River Joint Objectors Group requested that the Commission take formal action to direct that a cooperative partnership be established for the future evaluation of issues related to water quality classifications and standards for the Alamosa River. While the Commission does not believe that it is necessary or appropriate for it to take formal action in this regard as a result of this rulemaking, the Commission does wish to encourage an open and inclusive public process for the further assessment of future water quality conditions in the Alamosa River basin. Such cooperative efforts can hopefully include data sharing and an opportunity for public input into the evaluation of Summitville cleanup alternatives. Interested parties are encouraged to request an opportunity to brief the Commission on the

progress of these future efforts at appropriate intervals, perhaps annually. The Commission also is encouraged that the Governor's Office has established a task force of state, federal and local interests to address broader Alamosa River watershed initiatives.

Finally, the Commission notes that during this proceeding parties raised potential revisions to water quality classifications and standards for Alamosa River segments 6 and 7. However, it was determined that revisions to the water quality classifications and standards for these segments were not within the scope of the notice for this rulemaking, and therefore could not be considered in this proceeding. Any proposed revisions to these segments can be raised in the next triennial review of Rio Grande classifications and standards.

B. Segment 3a

During this rulemaking it became apparent that there were errors in the water quality classifications and standards currently published in the Colorado Code of Regulations for Alamosa River segment 3a. Segment 3a was first established in its current configuration as the result of a November, 1993 rulemaking hearing. At that time, a class 1 aquatic life classification was adopted for this segment, along with a combination of table value and ambient quality-based numerical standards. That version of the classifications and standards for segment 3a carried through copies of the Rio Grande Basin classifications and standards regulation that reflected revisions adopted in 1995. However, it appears that when this regulation was refiled in 1997 as a part of an overall renumbering of Water Quality Control Commission regulations, an incorrect version of classifications and standards for segment 3a was included.

As a result of the current rulemaking, the Commission has decided to adopt a class 2 aquatic life classification for segment 3a. This classification is based on biological and chemical data indicating that this segment is not capable of sustaining a wide variety of cold water biota, including sensitive species, due to uncorrectable water quality conditions. The UAA indicates that prior to any mining in this area, the natural water quality for a number of pollutants would have exceeded concentrations needed to fully support an aquatic life class 1 use, due to the erosion of naturally exposed, mineralized rock and aggregate. There was very limited mining in the segment 3a watershed, which is upstream of any significant influence of the Summitville Mine. The biological assessment conducted as part of the UAA indicates that the aquatic life present in segment 3a consists only of limited numbers of macroinvertebrate taxa. The Commission does not believe that the Alamosa River Joint Objectors Group proposal to adopt a seasonal class 1 aquatic life classification for this segment is appropriate. Even though water quality generally improves for the summer months, due to water quality conditions in other months this segment is not "capable of sustaining a wide variety of cold water biota."

Data collected for the UAA were sufficient to determine the 85th percentile value of in-stream water quality levels for each of the four seasons of the year. The chemical analysis indicates that the pre-mining 85th percentile concentration for aluminum is chronically and acutely toxic to trout in each of the seasons. Therefore, the Commission has retained the Al(ac) =750 standard for all seasons. The lower 15th percentile for pH ranges from 3.52 in the winter to a pH of 4.73 in the summer. The Commission has adopted seasonal pH standards reflecting the current data. Finally, revised manganese standards have been adopted (Mn(ac/ch)=TVS) based on revised aquatic life table values for manganese adopted in the Basic Standards and Methodologies for Surface Water in a November, 1997 rulemaking hearing.

C. New Segments 3b and 3c

Observational data collected in the 1970s and presented in the UAA indicates that a reproducing fish population may have been present in the portion of the Alamosa River below Fern Creek to the inlet of Terrace Reservoir. Based on this information and other data presented in the UAA, the Commission has split segment 3b into two segments, an upstream segment 3b and a downstream segment 3c. Segment 3b includes the Alamosa River reach between Wightman

Fork and Fern Creek. Segment 3c includes the Alamosa River from a point just above the confluence with Fern Creek to the inlet of Terrace Reservoir. It is expected that improved water quality following the Summitville cleanup will again support a fishery, and a reestablished, reproducing fishery is the remediation goal for segment 3c.

In view of the HMWMD and DMG withdrawal of their proposal for a revised classification for segment 3b, and considering the input from other parties and interested persons, the Commission has not made any changes to the water quality classifications for this segment. The numerical water quality standards for segment 3b are also being left unchanged at this time, with two exceptions. The Commission has adopted Mn(ac/ch) = TVS standards, based on the aquatic life table value criteria for manganese recently adopted in the Basic Standards, as noted above. In addition, corrections were made to the arsenic standards for segment 3b, to reflect the fact that no water supply classification exists for this segment.

The Commission has also retained the existing aquatic life class 1 use for the new segment 3c. This classification is supported by the UAA's chemical data and geochemical modeling of pre-mining (pre-1870) conditions. These data and the modeling indicate that, with the exception of iron, the long-term water quality in segment 3c will be better than table value standards. Therefore, the Commission has adopted table value standards for this new segment, with the exception of iron, for which the previous 12000 ug/l standard has been retained. The information presented in this hearing does not demonstrate that the 1000 ug/l table value for iron is attainable in this segment.

Finally, the Commission was not persuaded by the Alamosa River Joint Objectors Group argument that a 200 ug/l manganese standard should be adopted for segments 3b and 3c, since the downstream agricultural use is protected by the manganese standards in effect for segments 8, 9 and 10.

D. New Segments 4a and 4b

The Commission has adopted the proposed resegmentation of segment 4 into two segments, 4a and 4b. With the exception of segment 4b described below, the remaining parts of the previous segment 4 are renamed as segment 4a and will retain the current water quality classifications and standards. The Commission was not persuaded by the Alamosa River Group Objectors Group argument that numerical standards for metals and more restrictive pH standards should be adopted for segment 4a, since this segment is not classified to support aquatic life.

The new segment 4b consist of that portion of Iron Creek from its source to immediately above the confluence with Tributary G. The Commission has adopted an aquatic life class 1 use for this new segment with table value standards. The classification and standards are based on the UAA biological and chemical assessment, which demonstrates that the upper reaches of Iron Creek supported a reproducing fishery.

E. Segments 8, 9 and 10

The Commission has retained the existing water quality classifications for segments 8, 9 and 10. The Commission declined to adopt the Alamosa River Joint Objectors Group proposal to upgrade segment 8 (Terrace Reservoir) to aquatic life class 1. There was insufficient evidence submitted that a class 1 use is attainable for Terrace Reservoir, in view of fluctuations in the reservoir level due to irrigation use.

Only limited revisions to the numerical standards for these segments have been adopted by the Commission. Corrections were made to the arsenic standards for segments 8 and 10, to reflect the fact that no water supply classification exists for those segments. In addition, acute and

chronic table value standards for aluminum were adopted for these segments, based on chemical and modeling information indicating that they should be attainable following Summitville cleanup.

F. Other Issues

The Alamosa River Joint Objectors Group also proposed in this rulemaking that the Commission take action to direct completion Alamosa River total maximum daily loads (TMDLs) by a specified date. Issues concerning priorities for and timing of completion of TMDLs are beyond the scope of this rulemaking, and the Commission is therefore taking no formal action with respect to TMDLs at this time. However, in view of the obvious importance of these issues to the downstream community, the Commission encourages the completion of Alamosa River TMDLs by those agencies involved with Alamosa River cleanup and water quality standards attainment issues.

Finally, in this hearing the Commission has corrected typographical errors in the chemical symbols for NH3, Cl2, NO2, NO3, and SO4 in the tables for segments throughout the basin.

PARTIES/MAILING LIST STATUS FOR THE JUNE 10, 1998 RULEMAKING HEARING

1. Hazardous Materials and Waste Management Division and Division of Minerals and Geology
2. Alamosa River Joint Objectors Group: Summitville TAG Group, Rio Grande Water Conservation District, Alamosa/LaJara Water Conservancy District, Alamosa River Water Shed Project, Capulin Community Center (Valle de sol), Restore Our Alamosa River Group, SLV Chapter of Trout Unlimited, Citizen's for San Luis Valley Water and the Conejos County Commissioners
3. San Juan-Rio Grande National Forest Service
4. US Fish & Wildlife Service
5. A.O. Smith Corporation
6. Colorado Mining Association
7. Colorado Geological Survey
8. US EPA Region VIII

36.21 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; NOVEMBER, 1998 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 Commission has recently approved a new schedule for triennial reviews of water quality classifications and standards for all river basins in Colorado. In this hearing the Commission has extended the expiration dates of temporary modifications [and, for the Animas Basin, the effective dates of underlying standards] without substantive review, so that the next substantive review of the temporary modifications can occur as part of the overall triennial review of water quality standards for the particular watershed. This will avoid the need for multiple individual hearings that would take staff resources away from implementation of the new triennial review schedule.

For segments 9a and 9b of the Closed Basin (Kerber Creek) the Commission has readopted water quality standards revisions approved as a result of a May, 1997 rulemaking hearing, along with its Statement of Basis, Specific Statutory Authority and Purpose, that were inadvertently excluded from the current published version of this regulation.

36.22 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; MAY, 2001 RULEMAKING

The provisions of sections 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 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

As a result of a July, 2000 rulemaking hearing the Commission adopted numerous revisions to the Basic Standards and Methodologies for Surface Water, Regulation #31 (5 CCR 1002-31). These revisions included revisions to the table values in Tables II and III, which are intended to apply to site-specific waters in the various river basins wherever the Commission has adopted "table value standards". In this current rulemaking, the Commission adopted revisions to section 36.6(3) of this regulation to conform with the revisions to the Basic Standards.

36.23 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE, DECEMBER, 2001 RULEMAKING

The provisions of sections 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 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

In the spring of 2001, the Commission established a new schedule for major rulemaking hearings for each of its water quality classifications and standards regulations, as part of the triennial review process. As part of the transition to this new schedule, in order to facilitate an efficient and coordinated review of all water quality standards issues in this basin, in this hearing the Commission decided to extend the existing temporary modifications of water quality standards previously adopted for segments in this basin, so that such temporary modifications will not expire prior to the next scheduled major rulemaking hearing for this basin.

36.24 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

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

Rio Grande segment 7: The upper end of East Willow Creek in the segment was moved to Whited Creek, because the Town of Creede no longer has a diversion on Willow Creek.

Rio Grande segment 15: The segment description wording was changed for clarification to read; All tributaries to the Rio Grande from State Highway 112 bridge in Del Norte to the CO-NM state line, except for specific listings in 16 through 30.

Rio Grande segment 30: The segment description was amended to include the mainstem of East Fork Costilla Creek and West Fork Costilla Creek from 7 Road to the Colorado/New Mexico border.

Alamosa River segment 3c: The segment description was changed to read; the Alamosa River from Fern Creek to Ranger Creek.

Alamosa segment 3d: This new segment, formerly part of segment 3c, is the Alamosa River from Ranger Creek to Terrace Reservoir.

Alamosa segments 11 and 12: The demarcation point between the two segments was moved downstream to the confluence with Hot Creek for clarification.

Alamosa segment 21: The segment description wording was changed for clarification to read; All tributaries to the Alamosa River, La Jara Creek, and the Conejos River from the confluence with Fox Creek to the Rio Grande except for specific listings in segments 22.

Closed Basin segment 4: The reference to segment 9 was changed to 9a and 9b to reflect changes in the regulation made a previous rulemaking hearing.

B. Outstanding Waters Designations

The following segments, which already included wilderness areas in their description, were designated outstanding waters (OW). The water quality of the following segments met the 12 parameter test and other requirements of 31.8(2)(a):

Rio Grande segment 1
Alamosa segment 1
Closed Basin segment 1

C. 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. To maintain the existing Recreation Class 2 with the 2000/100 ml standard on a segment, it must be shown that there is minimal chance that a Recreation Class 1

activity could exist (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 a 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

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

Rio Grande segments 1, 2, 4, 5, 8, 9, 10, 11, 12, 13, 19, 21, 23, 25, 27, 28, and 30
Alamosa segments 11, 14, 15, 17, and 19
Closed Basin segments 1, 2, 4, 6, 11, 12

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:

Rio Grande segments 3, 6, 7, 14, 16, 17, 18, 20, 22, 24, 26, and 29
Alamosa segments 1, 2, 3a, 3b, 3c, 4a, 4b, 5, 6, 7, 8, 9, 10, 12, 13, 16, 18, 20 and 22
Closed Basin segments 3, 5, 7, 8. 9a, 9b, 10, 13, and 14

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.

Rio Grande segment 15
Alamosa segment 21

D. Ambient Quality-Based Standards

There are several segments in the Rio Grande Basin that contain ambient standards. Ambient standards are adopted where natural or irreversible man-induced conditions result in water quality levels higher 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 retaining or revising the following ambient standards:

Alamosa segment 3a: Fe, pH
Alamosa segment 3b: Cu, Fe
Alamosa segments 3c and 3d: Fe
Alamosa segment 7: Ag, Cd, Cu, Fe, Mn, Ni, Pb, and Zn

Ambient standards were replaced by TVS in the following segment, due to new data and/or changes to the basic standards which indicated ambient standards were no longer appropriate:

Closed Basin segment 7: Cu(ac/ch)

E. Temporary Modifications

There were several segments where temporary modifications that reflect current ambient conditions were adopted. Temporary modifications were set to expire on 12/31/07 to coincide with the next triennial review. The segments are:

Rio Grande segment 7
Closed Basin segments 9a and 9b

F. Organic Standards

The organic standards were updated to include changes adopted by the Commission in the 2000 revisions to the Basic Standards (see 31.11 in Regulation No. 31). "Water + Fish" organic 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 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, along with the segments water supply classification. The following segments were changed from Water + Fish to Fish Ingestion:

Rio Grande segments 3 and 18
Alamosa segments 12, 15, 17 and 18

G. Water Supply Classification

Water Supply classification and associated water supply standards were added to Closed Basin segment 3.

H. Modification of Water Supply Standards

Water supply standards were modified to conform to 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 SO4 = 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 (g/L (dissolved); Manganese = 50 (g/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.

I. Agriculture Standards

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

Rio Grande segments 15 and 20
Alamosa segment 21
Closed Basin segment 3

J. Other Site-Specific Revisions

The Commission corrected several typographical and spelling errors, and clarified segment descriptions. In addition, the following site-specific revisions were made:

Rio Grande segment 6: The Use Protected designation was removed from this aquatic life class 1 water.

Closed Basin segment 9a: The site-specific standard for Cd was changed to the value to protect the water supply use; the secondary drinking water standards for iron, manganese and sulfate were changed to read WS.

Closed Basin segment 9b: The secondary drinking water standards for iron, manganese and sulfate were changed to read WS.

PARTIES/MAILING LIST STATUS FOR THE JULY, 2002 RULEMAKING HEARING

1. Willow Creek Reclamation Committee
2. Alamosa Riverkeeper
3. ASARCO Incorporated
4. Sierra Club and Mineral Policy Center
5. U.S. EPA Region VIII

36.25 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: January 2007 Rulemaking Hearing; Final Action February 12, 2007; Revisions effective July 1, 2007

The provisions of section 25-8-202(1)(b), 25-8-204; 25-8-402, C.R.S., provide the specific statutory authority for adoption. 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 revised the basin-wide temperature standards as part of the 2007 rulemaking hearing. These changes clarify the numeric temperature standards that will be in effect until the basin-wide rulemaking hearing in June of 2012. At that time, the Commission intends to consider segment specific temperature standards for all segments with aquatic life uses.

The Commission applied 17 ºC as an interim chronic standard for small, high elevation streams that are likely to be habitat for brook trout and cutthroat trout. First, second and third order streams are defined at section 31.5 in the Basic Standards.

The Commission also applied 18.2 ºC as an interim chronic standard to waters designated by the Colorado Wildlife Commission as “Gold Medal Fisheries”. The Commission agrees that it is important to

protect these fisheries that provide important recreational and tourism opportunities in the headwaters of Colorado. This standard is based on a criterion to protect rainbow trout. The Colorado Division of Wildlife presented evidence that rainbow trout thrive in Gold Medal fisheries because they are provided the necessary forage base and thermal conditions to maximize their consumption and growth. Because these thermal conditions also represent the upper temperature tolerance range for this species, it was determined that an interim standard of 20°C would not be adequate to protect these fisheries.

For the remainder of the cold water segments, the Commission left the current 20 ºC in place as an interim standard with the clarification that it is a chronic standard. The existing 30 ºC criterion for warm water segments was left in place as an interim standard with the clarification that is also to be applied as a chronic standard.

PARTIES TO THE RULEMAKING HEARING

1. The Temperature Group (City of Aurora, City of Boulder, Colorado Springs Utilities, Littleton/Englewood Wastewater Treatment, The Metro Wastewater Reclamation District, Colorado Mining Association, Colorado Rock Products Association, Tri-State Generation & Transmission Assn., Xcel Energy, Denver Water, Northern Colorado Water Conservancy District, Southeastern Colorado Water Conservancy District)
2. City of Grand Junction
3. City of Loveland
4. City of Pueblo
5. Metro Wastewater Reclamation District
6. City of Aurora
7. City of Boulder
8. Colorado River Water Conservation District
9. Colorado Wastewater Utility Council
10. Bear Creek Watershed Association
11. Chatfield Watershed Authority
12. Mountain Coal Company, L.L.C.
13. Northern Colorado Water Conservancy District
14. Colorado Rock Products Association
15. Littleton/Englewood Wastewater Treatment Plant
16. Northwest Colorado Council of Governments
17. Southeastern Colorado Water Conservancy District
18. Colorado Mining Association
19. Colorado Division of Wildlife
20. South Platte Coalition for Urban River Evaluation
21. City and County of Denver
22. City of Colorado Springs and Colorado Springs Utilities
23. City of Westminster
24. Board of Water Works of Pueblo
25. Coors Brewing Company
26. City and County of Broomfield
27. Centennial Water and Sanitation District
28. Plum Creek Wastewater Authority
29. Climax Molybdenum Company
30. Cripple Creek & Victor Gold Mining Company
31. Tri-State Generation and Transmission Association
32. Xcel Energy
33. Sky Ranch Metropolitan District No. 2
34. Parker Water and Sanitation District
35. CAM-Colorado and CAM Mining LLC
36. Aggregate Industries – WCR, Inc.
37. Grand County Water and Sanitation District #1, Winter Park Water and Sanitation District, Winter Park West Water and Sanitation District and Fraser Sanitation District

38. Trout Unlimited and Colorado Trout Unlimited
39. Colorado Contractors Association
40. United States Environmental Protection Agency, Region 8
41. Hot Springs Lodge and Pool
42. Denver Regional Council of Governments

36.26 STATEMENT OF BASIN SPECIFIC STATUTORY AUTHORITY AND PURPOSE MARCH 2007 RULEMAKING REGARDING AMMONIA STANDARDS, EFFECTIVE DATE OF SEPTEMBER 1, 2007

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:

At the June 2005 Basic Standards rulemaking, the Commission adopted the 1999 Update of Ambient Water Quality Criteria for Ammonia (US EPA, Office of Water, EPA-822-R-99-014, December 1999) as the numeric ammonia criteria for Colorado. These new criteria are in the form of total ammonia rather than un-ionized ammonia. The Commission modified the ammonia equations in 35.6(3) and footnotes to conform to Regulation # 31.

Consistent with the approach outlined in the Basic Standards statement of basis and purpose, the Commission provided flexibility for dischargers faced with the possibility of new, more stringent effluent limits.

Temporary modifications were generally set to expire on 12/31/11. This date is set far enough in the future to allow facilities to consider their specific circumstances and to develop a plan regarding how to proceed, yet soon enough to assure that facilities are making progress in developing facility plans. For those that feel the underlying standards are inappropriate, time is allowed to study the receiving water and develop a proposal for an alternate standard. For those that need time to plan, finance or construct new facilities, time is allowed to develop that facility improvement plan.

The intent of the Commission is that in general, the permits for dischargers to warm water segments, that need time to achieve compliance, will contain schedules of compliance in the next renewal. The Commission understands that such a compliance schedule may include time to complete necessary sub-tasks or milestones. For example, this might include time to do facility planning, make financing arrangements, pre-design, design, construction, startup and commissioning.

There are several opportunities to revisit the duration of the temporary modifications before they expire on 12/31/2011. For those segments in the Upper and Lower Colorado Basins (Regulations # 33 and 37), persons can come forward at the Issues Formulation hearing in November 2007 with their intent to seek a site-specific adjustment in the June 2008 hearing. For those segments in the South Platte Basin (Regulation # 38), persons can come forward at the Issues Formulation hearing in November 2008 with their intent to seek a site-specific adjustment in the June 2009 hearing. In addition, all of these temporary modifications will be subject to the Annual Temporary Review process which will have hearings in December 2009 and 2010.

The Commission intends that the temporary modifications adopted in this rulemaking are “type i” temporary modifications.

The issues raised in this rulemaking hearing have highlighted the need to clarify the relationship between the temporary modification tool and the compliance schedule tool in Colorado’s water quality management program. The Commission requests that the Division consider this issue further, with input

from interested stakeholders, and bring forth any suggested revisions/clarifications for the 2010 Basic Standards rulemaking.

In the meantime, because of the Commission's previously expressed concerns regarding the unique and widespread challenges associated with compliance with the new ammonia standards, the Commission's intent with respect to temporary modifications and compliance schedules regarding these new ammonia standards is as follows:

- Where a demonstration has been made that a period of time longer than the end of 2011 will be required for compliance with the new ammonia standards, the Commission has approved an appropriate site-specific temporary modification expiration date.
- For segments where the 12/31/11 expiration date applies, and for which discharge permit renewals may be issued prior to that date, it is the Commission's intent, consistent with section 31.14(15)(a), that the Division have the authority to issue compliance schedules that may not result in full attainment of the ammonia standard prior to expiration of the renewal permit. Such compliance schedules should be issued only where the Division determines that a specific demonstration has been made that additional time is needed to attain the standard. In such cases, the Commission anticipates that permits would include milestones that assure reasonable progress toward attainment of the standard.

PARTIES TO THE RULEMAKING

1. Boxelder Sanitation District
2. Estes Park Sanitation District
3. City of Pueblo
4. The City of Boulder
5. The Metro Wastewater Reclamation District
6. The Colorado Wastewater Utility Council
7. The Paint Brush Hills Metropolitan District
8. The Grand County Water & Sanitation District #1, the Winter Park West Water & Sanitation District, the Fraser Sanitation District and the Winter Park Water & Sanitation District
9. Mountain Water & Sanitation District
10. The Town of Gypsum
11. The City of Grand Junction
12. City and County of Broomfield
13. Centennial Water & Sanitation District
14. Town of Erie
15. The City of Fort Collins
16. Plum Creek Wastewater Authority
17. The City of Sterling
18. Eastern Adams County Metropolitan District
19. The City of Littleton
20. Two River Metro District
21. H Lazy F Mobile Home Park
22. Rock Gardens Mobile Home
23. Blue Creek Ranch
24. The City of Greeley
25. US EPA

36.27 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; (JUNE 2007 RULEMAKING; ADOPTED AUGUST 13, 2007; EFFECTIVE 12/31/07)

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. Waterbody Segmentation

Some renumbering and/or creation of new segments in the basin was made due to information which showed that the original reason for segmentation no longer applied. The following changes were made:

> Closed Basin-San Luis Valley segment 13b: This segment was created for the North Branch of Saguache Creek and its tributaries. This segment was formerly included in Closed Basin-San Luis Valley segment 3 (All tributaries to the Closed Basin except for segment 2, segments 4-13). The Town of Saguache WWTF discharges to the North Branch of Saguache Creek, and intends to propose site-specific standards for this segment.
>
> Closed Basin-San Luis Valley segment 13a: Segment 13 was changed to segment 13a to reflect the creation of segment 13b.

B. Revised Aquatic Life Use Classifications

The Commission reviewed information regarding existing aquatic communities, and made the following change.

> Rio Grande River Basin segment 20: The Aquatic Life Use classification was changed from Cold 2 to Cold 1 based on the presence of Rio Grande cutthroat trout, a DOW species of special concern. Appropriate Aquatic-Life based standards were adopted to reflect the change in Use Classification.

C. Recreation Classifications and Standards

As part of the Basic Standards hearing of 2005, recreation classifications were revised into four new classifications. The Commission reviewed the previous classifications (1a, 1b and 2) and determined the appropriate new classifications based on criteria presented as part of the Basic Standards Hearing, use attainability analyses or other basis. In addition, during the 2005 Basic Standards Hearing, the transition from the use of the fecal coliform standard to *E. coli* standard was completed. Fecal coliform criteria were deleted from the numeric standards.

Based on the information that showed existing primary contact recreation use is in place in at least a portion of the segment, the Commission converted the following segments from Recreation Class 1a to Recreation Class E with a 126/100 ml *E. coli* standard:

> Rio Grande segments: 1-14, and 16-30.
> Alamosa River/La Jara Creek/Conejos River segments: 1-2, 3a-3d, 4a-4b, 5-20, and 22.
> Closed Basin- San Luis Valley segments: 1-8, 9a-9b, and 10-14.

Based on review of existing Use Attainability Analyses showing that primary contact recreation is not attainable, the following segments were converted to Recreation Class N classification with 630/100 ml E. coli standard:

> Rio Grande segment: 15.
> Alamosa River/La Jara Creek/Conejos River segment: 21.

D. Addition of Water Supply Use Classification and Standards

Based on review of information regarding the location of public water supplies, no additional WS classifications and standards were added to Regulation No. 36.

E. Changes to Antidegradation Designation

Outstanding Waters Designation: Based on evidence that shows the water quality meets the requirements of 31.8(2)a, the OW designation was added to Closed Basin-San Luis Valley segment 10, which includes Sand and Medano Creeks located in the Great Sand Dunes National Park and Preserve. Outstanding waters designation was supported by the National Park Service.

Decoupling Cold 2 and UP: As part of the Basic Standards hearing of 2005, the Commission eliminated the direct linkage between cold-water Aquatic Life Class 2 and the Use-Protected designation. Therefore, all cold-water Aquatic Life Class 2 segments that are Use-Protected were reviewed to determine if that designation is still warranted. The following segments are now Reviewable:

Rio Grande segments: 3, 20, 22, 24, 26, and 29.
Alamosa River/La Jara Creek/Conejos River segment: 15.
Closed Basin - San Luis Valley segments: 5 and 7.

Decoupling Aquatic Life Warm 2 and UP Also as part of the Basic Standards hearing of 2005, the Commission decided that the presence of a warm-water Aquatic Life Class 2 classification would still be a presumptive basis for applying a Use-Protected designation; however, that presumption can be overcome if there is data showing that the water is of high quality. Therefore, the Commission reviewed all warm water class 2 segments to determine if the use protected designation is still warranted. The following segment(s) are now Reviewable:

Alamosa River/La Jara Creek/Conejos River segments: 12 and 18

F. Ambient Quality-Based Standards

There are several segments in the Rio Grande Basin that are assigned ambient standards. Ambient standards are adopted where natural or irreversible man-induced conditions result in exceedances of table value standards. The Commission reviewed 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 Commission did not adopt any changes to the ambient quality-based standards. The following segments have ambient based standards:

Alamosa segment 3a: pH and Fe
Alamosa segment 3b: Cu and Fe
Alamosa segment 3c: Fe
Alamosa segment 3d: Fe
Alamosa segment 7: Ag, Cd, Cu, Fe, Mn, Ni, Pb, and Zn

G. Aquatic Life Metals Standards

New Table Value Standards: As part of the Basic Standards hearing of 2005, new zinc and cadmium table values were adopted. The acute and chronic zinc and cadmium equations in 36.6(3) were modified to conform to Regulation No. 31.

H. Arsenic Standards

For arsenic, each use (except recreation) has a different arsenic ("As") value, including Fish Ingestion (FI) and Water Plus Fish (W+F). In different combinations of uses, different values become the most limiting. In order to eliminate the confusion, the Commission added the operative value to the individual segments. The following matrix displays the most limiting arsenic criteria.

Most Limiting Arsenic Criteria

Depending on the Possible Combinations of Uses and Qualifiers

If the Use Classifications were:	**These Arsenic Standards were Applied (dissolved unless otherwise noted)**
Class 1 aquatic life, water supply	As(ac) = 340, As(ch) = 0.02(Trec)
Class 2 aquatic life (water + fish standards), water supply	As(ac) = 340, As(ch) = 0.02(Trec)
Class 2 aquatic life (no fish ingestion standards), water supply	As(ac) = 340, As(ch) = 0.02 – 10(Trec)
Class 1 aquatic life	As(ac) = 340, As(ch) = 7.6(Trec)
Class 2 aquatic life (fish ingestion standards)	As(ac) = 340, As(ch) = 7.6(Trec)
Class 2 aquatic life (no fish ingestion standards), agriculture	As(ac) = 340, As(ch) = 100(Trec)
Agriculture only	As(ch) = 100 (Trec)
Water supply only	As(ch) = 0.02 – 10(Trec)

I. Uranium Standards

At the 2005 Basic Standards rulemaking hearing, the Commission changed the drinking water supply table value for uranium from 40 pCi/L to 30 μg/L.

J. Temporary Modifications

Language was added to subsection 32.6(2) [or 36.6(2)] to explain the terms “type i” and “type iii” temporary modifications.

All temporary modifications were re-examined to determine whether to delete the temporary modification or to extend them, either as existing or with modifications of the numeric standards. Because of the June 2005 changes to Regulation No. 31, temporary modifications were not automatically extended if non-attainment persisted.

The following segment had temporary modifications removed because current ambient conditions meet the underlying standards:

Rio Grande segment 7

The following segments had temporary modifications removed because there are no permitted discharges on this segment:

Closed Basin-San Luis Valley segments 9a and 9b

The following segments have new or extended temporary modifications. As specified in 61.8(2)(c)(iii) (the Permit Rules, Regulation No 61), where a temporary modification has been adopted, limits in permits are to be set based on the temporary modification and the provision strictly limiting the loading from the facility does not apply. These temporary modifications will be subject to review and rulemaking for the two years before their scheduled expiration in order to track progress towards the full attainment of water body standards and uses.

Rio Grande segment 4: As(ch)=existing quality, Cd(ch)=existing quality, Cu(ch)=existing quality, Pb(ch)=existing quality, Zn(ch)=existing quality, expiration date of 12/31/2012. Exceedances of the arsenic, cadmium, copper, lead and zinc standards were measured in this segment. A type iii Temporary Modification was adopted based on section 31.7(3)(a)(iii) which states that the Commission may grant a temporary modification “where there is significant uncertainty regarding the appropriate long-term underlying standard – e.g. due to the need for additional information regarding the extent to which existing quality is the result of natural or irreversible human-induced conditions or regarding the level of water quality necessary to protect current and/or future uses –

and the adoption of a temporary modification recognizes current conditions while providing an opportunity to resolve the uncertainty". The Willow Creek Reclamation Committee has ongoing projects to reduce metal pollution from Willow Creek to the Rio Grande, and the final effect of these projects is currently unknown. Natural sources also need to be identified and characterized before appropriate underlying standards can be determined. The need for this temporary modification will be reviewed in 2010 and 2011. Where temporary modifications are in effect, the Division is to include effluent limits and (potentially) compliance schedules in discharge permits, consistent with Section 31.14(15).

Alamosa/La Jara/Conejos segment 3b: Se(ch)=existing quality, expiration date of 12/31/2012. Until a revised national criteria is promulgated for selenium, these Temporary Modifications should be based on section 31.7(3)(a)(iii). The need for this temporary modification will be reviewed in 2010 and 2011. Where temporary modifications are in effect, the Division is to include effluent limits and (potentially) compliance schedules in discharge permits, consistent with Section 31.14(15).

Closed Basin-San Luis Valley segment 13b: NH_3(ac/ch)=existing quality, expiration date of 12/31/2011. There is uncertainty as to what the appropriate underlying standard for ammonia should be in this segment, because the North Branch is frequently dry, and the extent that this segment supports aquatic life is unknown. A type iii Temporary Modification was adopted based on section 31.7(3)(a)(iii). This Temporary Modification has been adopted to allow the Town of Saguache adequate time to determine the appropriate ammonia standards for this segment by completing an aquatic life survey particularly for the presence of fish and early life stages. The need for this temporary modification will be reviewed in 2010 and 2011. Where temporary modifications are in effect, the Division is to include effluent limits and (potentially) compliance schedules in discharge permits, consistent with Section 31.14(15).

K. Other Site-Specific Revisions

Rio Grande segment 16: The Mn=WS was removed because there is no Water Supply use classification for this segment. Mn(ac/ch)=TVS was added to reflect the Aquatic Life use classification for this segment.

Alamosa River/La Jara Creek/Conejos River segment 5: The pH=6.0-9.0 standard was changed to pH=6.5-9.0 to reflect the Aquatic Life use classification. D.O.=6.0 mg/l and D.O.(sp)=7.0 mg/L were added to reflect the Aquatic Life use classification.

Alamosa River/La Jara Creek/Conejos River segment 12: The E. coli=630/100ml was changed to E. coli=126/100ml to reflect the Recreation 1a use classification.

Alamosa River/La Jara Creek/Conejos River segment 18: The E. coli=630/100ml was changed to E. coli=126/100ml to reflect the Recreation 1a use classification.

L. Other changes

The Commission corrected several typographical and spelling errors, and clarified segment descriptions.

The reference to "Water+Fish *Organics*" was corrected to "Water+Fish *Standards*" to incorporate the appropriate standards from both the organics table and the metal parameter table in Regulation No. 31.

Rio Grande segment 18: The segment description was amended to reference segment 30 instead of segment 31. There is currently no segment designated as 31.

Rio Grande segment 30: The segment description was amended to correct an inaccurate reference to Road 7 which crosses the mainstem of Costilla Creek instead of West Fork Costilla Creek. The reference

to the New Mexico/Colorado border was removed since this creek crosses the state-line three times, and was reworded to include only those portions within Colorado.

Alamosa River/La Jara Creek/Conejos River segment 4b: In the site description, the reference to Tributary G was changed to South Mountain Creek, because the name Tributary G does not appear on USGS or commercial maps readily available to the public.

Alamosa River/La Jara Creek/Conejos River segment 3c: In the site description, the reference to the confluence with Ranger Creek was changed to "*below* the confluence with Ranger Creek" so that the segment description is consistent with the segment description of Alamosa segment 3d.

Alamosa River/La Jara Creek/Conejos River segments 8-12: The Mn(ch)=200 standard was changed to Mn(ch)=200(Trec) to clarify that the standard refers to total recoverable manganese.

Alamosa River/La Jara Creek/Conejos River segment 19: A typographical error was corrected such that NO_2=0.0 was changed to NO_2=0.05.

M. Proposal by Hazardous Materials and Waste Management Division

HMWMD prepared a Use Attainability Assessment (UAA, updated from the 1998 UAA) on the Alamosa River system, specifically assessing the aluminum sources and resulting levels in segments 3a, 3b, 3c, 3d and 8. The goal of the updated UAA was to evaluate the current and attainable conditions of the river system with respect to aluminum for snowmelt and non-snow-melt periods from 1999 to 2006. This time frame was chosen because it exhibits improved water quality, compared to the preceding years. The improved conditions are attributable to a significant decline in metal concentrations in Wightman Fork due to stability of the chemistry and the effectiveness of remedial activities at the Summitville Mine Superfund Site ("SMSS").

The 2007 UAA Update identified the natural, irreversible man-induced and reversible sources of aluminum. Three conditions were modeled that differ by the amount of human-induced sources that are removed in the calculation. In addition, three remedial scenarios were then modeled which investigated the resulting aluminum concentrations based on water treatment scenarios at the SMSS.

The Commission agrees with the conclusions of the 2007 UAA Update that even if all reversible and irreversible human-induced aluminum sources were completely removed from the Alamosa River basin (Updated Condition 2), attainment of the current aluminum standards in the Alamosa River would not be achieved (2007 UAA Update Table 28). Loading from natural sources located in the Stunner, Summitville and Jasper Hydrothermal Altered Areas is of a large enough magnitude to result in elevated aluminum concentrations in the Alamosa River segments considered in this UAA. These natural aluminum loading sources have existed since well before mining in the basin and will continue to negatively impact the Alamosa River in the foreseeable future (i.e., longer than 20 years).

Based on review of the UAA and other information in the record, the Commission agrees that the only feasible reduction in aluminum that can be expected in the next 20 years will result from elimination of the loading from legacy mines identified in the UAA as reversible, control of the SMSS SDI seepage and construction of a new single stage plant at the SMSS. Consequently, the Commission has adopted site-specific standards.

Dissolved and Total Recoverable Aluminum Standards

In ambient waters, aluminum can exist in different forms and particle size as a function of pH. In addition, the aquatic toxicology of aluminum is complex. It is likely that total recoverable versus the dissolved forms of aluminum have dissimilar potentials to adversely affect aquatic life. In this situation where attainability-based standards have been adopted, the Commission established standards in both the dissolved and total recoverable form. These dual standards more completely characterize the different

forms and particle size in which aluminum currently exists in the Alamosa River. This dual standard will be useful in maintaining and protecting the existing condition while also mandating controls that are feasible to achieve. The Commission has adopted the following site-specific changes:

Segment 3a Alamosa River above Wightman Fork: The Commission has adopted a seasonal aluminum ambient-based standard for segment 3a, which is above the influence of the SMSS. The 85th percentile ambient standards for Al(Trec) = 3,100 ug/L(5/1 to 6/30) and 6,200 ug/L (7/1 to 4/30) and 95th percentile ambient standards for Al(Trec) = 4,000 ug/L(5/1 to 6/30) and 19,900 ug/L (7/1 to 4/30). The 85th percentile ambient standards for Al(Dis) = 98 ug/L(5/1 to 6/30) and 903 ug/L (7/1 to 4/30) and 95th percentile ambient standards for Al(Dis) = 161 ug/L(5/1 to 6/30) and 6,005 ug/L (7/1 to 4/30). These standards were derived from the 85th and 95th percentile concentration of aluminum (Trec and Dis), chronic and acute respectively, of the data collected from 1981 through 2006.

Segment 3b Alamosa River from Wightman Fork to Fern Creek: The Commission adopted a seasonal aluminum technology-based standard for segment 3b. This is derived from monitoring and modeling of chemical data. The 85th percentile 1999-2006 conditions indicate that aluminum, due to naturally occurring conditions, will exceed the existing aluminum acute standard. The Commission has adopted 85th percentile seasonal technology-based standards for Al(Trec) = 3,000 ug/L(5/1 to 6/30) and 3,000 ug/L (7/1 to 4/30) and 95th percentile seasonal technology-based standards for Al(Trec) = 4,300 ug/L(5/1 to 6/30) and 3,100 ug/L (7/1 to 4/30). The 85th percentile seasonal technology-based standards for Al(Dis) = 41 ug/L(5/1 to 6/30) and 317 ug/L (7/1 to 4/30) and 95th percentile seasonal technology-based for Al(Dis) = 41 ug/L(5/1 to 6/30) and 756 ug/L (7/1 to 4/30). These standards represent the expected 85th and 95th percentile concentration of aluminum (Trec and Dis), chronic and acute respectively, once the new single stage plant is installed and operating at the SMSS.

Segment 3c Alamosa River from Fern Creek to Ranger Creek: The Commission has adopted a seasonal aluminum technology-based standard for segment 3c. This is derived from monitoring and modeling of chemical data. The 85th percentile 1999-2006 conditions indicate that aluminum, due to naturally occurring conditions, will exceed the existing aluminum acute standard. The Commission has adopted 85th percentile seasonal technology-based standards for Al(Trec) = 4,600 ug/L(5/1 to 6/30) and 3,700 ug/L (7/1 to 4/30) and 95th percentile seasonal technology-based standards for Al(Trec) = 6,200 ug/L(5/1 to 6/30) and 6,700 ug/L (7/1 to 4/30). The 85th percentile seasonal technology-based standards for Al(Dis) = 42 ug/L(5/1 to 6/30) and 137 ug/L (7/1 to 4/30) and 95th percentile seasonal technology-based standards for Al(Dis) = 87 ug/L(5/1 to 6/30) and 645 ug/L (7/1 to 4/30). These standards represent the expected 85th and 95th percentile concentration of aluminum (Trec and Dis), chronic and acute respectively, once the new single stage plant is installed and operating at the SMSS.

Segment 3d Alamosa River from Ranger Creek to Terrace Reservoir: The Commission has adopted a seasonal aluminum technology-based standard for segment 3d. This is derived from monitoring and modeling of chemical data. The 85th percentile 1999-2006 conditions indicate that aluminum, due to naturally occurring conditions, will exceed the existing aluminum acute standard. The Commission has adopted 85th percentile seasonal technology-based standards for Al(Trec) = 3,500 ug/L(5/1 to 6/30) and 3,100 ug/L (7/1 to 4/30) and 95th percentile seasonal technology-based standards for Al(Trec) = 5,200 ug/L(5/1 to 6/30) and 3,700 ug/L (7/1 to 4/30). The 85th percentile seasonal technology-based standards for Al(Dis) = 87 ug/L(5/1 to 6/30) and 56 ug/L (7/1 to 4/30) and 95th percentile seasonal technology-based standards for Al(Dis) = 90 ug/L(5/1 to 6/30) and 559 ug/L (7/1 to 4/30). These standards represent the expected 85th and 95th percentile concentration of aluminum (Trec and Dis), chronic and acute respectively, once the new single stage plant is installed and operating at the SMSS.

Segment 8 Terrace Reservoir: The Commission has adopted a seasonal aluminum technology-based standard for segment 8. This is derived from monitoring and modeling of chemical data. The 85th percentile 1999-2006 conditions indicate that aluminum, due to naturally occurring

conditions, will exceed the existing aluminum acute standard. The Commission has adopted 85th percentile seasonal technology-based standards near surface/near bottom for Al(Trec) = 1,800/4,800 ug/L (5/1 to 6/30) and 200/400 ug/L (7/1 to 4/30) and 95th percentile seasonal technology-based standards for Al(Trec) = 1,800/5,600 ug/L(5/1 to 6/30) and 200/600 ug/L (7/1 to 4/30). The Commission has adopted 85th percentile technology-based standards for Al(Dis) = 28 ug/L and 95th percentile technology-based standards for Al(Dis) = 77 ug/L. These standards represent the expected 85th and 95th percentile concentration of aluminum (Trec and Dis), chronic and acute respectively, once the new single stage plant is installed and operating at the SMSS.

The "near surface" layer represents that part of the reservoir that is well mixed by wind action and can be expected to have relatively homogenous physical and chemical conditions. Prior to sample collection, a vertical thermal profile is gathered from the reservoir. When the reservoir is thermally stratified during the summer months, the 'near surface' layer corresponds to the epilimnion and the 'near bottom' corresponds to the hypolimnion. When the reservoir is unstratified, the 'near surface' of Terrace Reservoir is defined as the upper 10 feet of the water column and the 'near bottom' is defined as lower 20 feet of the water column. Because the Terrace Reservoir serves as a settling basin for particulates, and thus there is a gradient from near surface to near bottom, the stratified sampling technique will be used to collect total recoverable aluminum data. A single standard for the entire reservoir is proposed for dissolved aluminum because based on current data, there is no such stratification of dissolved aluminum concentrations.

Future Monitoring and Review of the Standards

The Alamosa Riverkeeper, Colorado Trout Unlimited, the Water Quality Control Division and EPA expressed concern regarding the size of the water quality dataset for aluminum and whether it accurately characterizes existing conditions from which the attainable conditions are calculated. Therefore, it is the intent of the Commission that these proposed 85th and 95th percentile standards shall be reassessed for each segment during each triennial review for the Rio Grande Basin, Regulation 36. The monitoring data that has been collected in the interim will be used to recalculate the standards for segments 3a, 3b, 3c, 3d and 8 as the database increases in size. In this way, the attainability–based numeric standards for aluminum can be refined.

The HMWMD has agreed to be responsible for collecting and analyzing samples during the snowmelt (generally May of each year) and non-snowmelt (generally September of each year) periods at the currently established monitoring stations for Alamosa River segments 3a, 3b, 3c, 3d and 8. In addition, the Alamosa Riverkeepers, community based groups, or other entities may collect and analyze additional samples data (in accordance with the Field Sampling Plan and Quality Assurance Project Plan for the Summitville Mine Superfund Site, prepared by Tetra Tech RMC and dated May 2003) for the accessible monitoring stations during other portions of the year such as mid-summer and mid-winter. These data shall become part of the master database and will be evaluated during future WQCC hearings on Regulation 36.

In the 2012 hearing, the calculations for the 2007 UAA conditions and remedial scenarios will be updated for the purpose of reviewing the aluminum concentrations that are feasible to achieve in each segment using the 1999 through 2011 data. The 85th and 95th percentile standards will be re-calculated for both the total recoverable and dissolved forms of aluminum. If it is determined that revisions to the standards adopted in this rulemaking are appropriate; that is, there are changes from the current values, then the Commission expects that a proposal shall be presented for inclusion in the public notice for the 2012 rulemaking hearing and a revision to Regulation 36, Alamosa River segment 3a, 3b, 3c, 3d and 8.

PARTIES TO THE RULEMAKING

1. Hazardous Materials and Waste Management Division
2. Hazardous Materials and Waste Management Division
3. State of Kansas

4. City of Pueblo
5. Tri-Lakes Wastewater Treatment Facility
6. Cripple Creek and Victor Gold Mining Company
7. Climax Molybdenum Company
8. Security Sanitation District
9. Pueblo West Metro District
10. The Paint Brush Hill Metropolitan District
11. Colorado Trout Unlimited
12. Homestake Mining Company of California
13. City of Cripple Creek Water/Wastewater Department
14. Colorado Wild
15. The National Park Service at Great Sand Dunes National Park and Preserve
16. Park Center Water District
17. Xcel Energy
18. Alamosa Riverkeeper
19. The City of La Junta
20. Corrections Corporation of America
21. Rocky Mountain Steel Mills.
22. Colorado Division of Wildlife
23. The City of Colorado Springs
24. The Board of Water Works of Pueblo, Colorado
25. U.S. Environmental Protection Agency
26. Pikes Peak Area Council of Governments

36.28 STATEMENT OF BASIS SPECIFIC STATUTORY AUTHORITY AND PURPOSE DECEMBER 2009 RULEMAKING REGARDING TEMPORARY MODIFICATIONS; FINAL ACTION FEBRUARY 8, 2010; EFFECTIVE DATE JUNE 30, 2010

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

Pursuant to the requirements in the Basic Standards (at 31.7(3)), the Commission reviewed the status of temporary modifications to determine whether the temporary modification should be modified, eliminated or extended.

Ammonia: Temporary modifications of ammonia standards on five segments were reviewed.

Deleted: Ammonia temporary modifications were deleted on the following segments because in most cases permits had recently been reissued for dischargers on the segments. Compliance schedules in the permits are adequate to address any necessary treatment plant upgrade issues. In other cases, no permits now discharge to this segment.

Rio Grande segment 12
Alamosa River segment 18
Closed Basin segments 13b and 14

Detail added: The chronic ammonia temporary modification for Closed Basin segment 3 was modified to clarify that the chronic standard's value is 0.06 mg/l, rather than just "TVS old."

This temporary modification will expire 12/31/2011 and will be reviewed again in the December 2010 Temporary Modification hearing.

PARTIES TO THE RULEMAKING

1. City of Grand Junction
2. City of Colorado Springs and Colorado Springs Utilities
3. Tri-Lakes, Upper Monument, Security and Fountain Wastewater Treatment Facilities
4. Paint Brush Hills Metropolitan District
5. Pueblo West Metropolitan District
6. City of La Junta
7. Seneca Coal Company
8. Tri-State Generation and Transmission Association
9. Plum Creek Wastewater Authority
10. Centennial Water and Sanitation District
11. City and County of Broomfield
12. City of Fort Collins
13. Metro Wastewater Reclamation District
14. City of Black Hawk and the Black Hawk/Central City Sanitation District
15. Colorado Division of Wildlife
16. U.S. Environmental Protection Agency

36.29 STATEMENT OF BASIS SPECIFIC STATUTORY AUTHORITY AND PURPOSE JULY 2010 RULEMAKING REGARDING TEMPORARY MODIFICATIONS; EFFECTIVE DATE NOVEMBER 30, 2010

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 Commission has decided to delay the basin-wide review of water quality classifications and standards for this basin until June 2013, to accommodate an issue-specific rulemaking for nutrient criteria in June 2011. Consistent with that decision, the expiration dates of the temporary modifications on the following segments that are currently scheduled to expire on 12/31/2012 are extended to 12/31/2013. These will be reviewed again in a Temporary Modification hearing prior to the June 2013 basin-wide hearing.

Rio Grande	4
Alamosa	3b.

The Commission would like to emphasize that its intent and expectation is that the issues that necessitated adoption of these temporary modification should be resolved as soon as possible and in a manner that takes full advantage of the opportunities provided by the December 2011 review of temporary modifications. The Commission recognizes that it is important to resolve uncertainty regarding the underlying standards so that temporary modifications can be eliminated and any needed pollution controls can be put in place in a timely manner.

PARTIES TO THE RULEMAKING HEARING

1. Town of Avon
2. City of Black Hawk and Black Hawk/Central City Sanitation District
3. Northern Colorado Water Conservancy District and the Municipal Subdistrict, Northern Colorado Water Conservancy District
4. City of La Junta
5. XTO Energy, Inc.
6. City of Pueblo

7. City of Colorado Springs and Colorado Springs Utilities
8. U.S. Environmental Protection Agency

36.30 STATEMENT OF BASIS SPECIFIC STATUTORY AUTHORITY AND PURPOSE DECEMBER 2010 RULEMAKING REGARDING TEMPORARY MODIFICATIONS; FINAL ACTION JANUARY 10, 2011; EFFECTIVE DATE JUNE 30, 2011

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

Pursuant to the requirements in the Basic Standards (at 31.7(3)), the Commission reviewed the status of temporary modifications to determine whether the temporary modification should be modified, eliminated or extended.

The type i temporary modification of ammonia standard on Closed Basin segment 3 was reviewed. The Commission took no action on this temporary modification, it will expire on 12/31/2011.

PARTIES TO THE RULEMAKING HEARING

1. Paint Brush Hills Metropolitan District
2. Tri-State Generation and Transmission Association
3. Seneca Coal Company
4. Mountain Water and Sanitation District
5. City of Grand Junction
6. Colorado Division of Wildlife
7. City of Boulder
8. U. S. Environmental Protection Agency
9. City of Colorado Springs and Colorado Springs Utilities

36.31 STATEMENT OF BASIS SPECIFIC STATUTORY AUTHORITY AND PURPOSE JUNE 13, 2011 RULEMAKING REGARDING TEMPORARY MODIFICATIONS; EFFECTIVE DATE JANUARY 1, 2012

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 Commission's decision to delay consideration of nutrient criteria until March 2012 resulted in cancelation of the December 2011 review of temporary modifications. Accordingly, the Commission considered the expiration dates of all the temporary modifications expiring on or before December 31, 2012 in a written comment rulemaking. The following temporary modification was deleted because it will have expired as of the effective date of this revision:

Closed Basin segment 3 (NH_3).