

APPENDIX 9
WATERSHED RESOURCES

CONTENTS:

Utah State Water Quality Standards for DMRA



STATE OF UTAH WATER QUALITY STANDARDS

The following information are excerpts from the current State of Utah water quality standards as they apply to waters within the boundaries of the Diamond Mountain Resource Area. These state regulations are provided under the authority of 26-1-1 through 20, Utah Code Annotated 1953, as amended, and most recently revised April, 1988.

R448-2 Standards of Quality for Waters of the State

R448-2-0 Public Policy

Whereas the pollution of the waters of this state constitute a menace to public health and welfare, creates public nuisances, is harmful to wildlife, fish, and aquatic life, and impairs domestic, agricultural, industrial, recreational, and other legitimate beneficial uses of water, and whereas such pollution is contrary to the best interests of the state and its policy for the conservation of the water resources of the state, it is hereby declared to be the public policy of this state to conserve the waters of the state and to protect, maintain and improve the quality thereof for public water supplies, for the propagation of wildlife, fish, and aquatic life, and for domestic, agricultural, industrial, recreational, and other legitimate beneficial uses; to provide that no waste be discharged into any waters of the state without first being given the degree of treatment necessary to protect the legitimate beneficial uses of such waters; to provide for the prevention, abatement, and control of new or existing water pollution; to place first in priority those control measures directed toward elimination of pollution which creates hazards to the public health; to insure due consideration of financial problems imposed on water polluters through pursuit of these objectives; and to cooperate with other agencies of the state, agencies of other states, and the federal government in carrying out these objectives.

R448-2-3 Antidegradation Policy

3.1 Maintenance of Water Quality

Waters whose existing quality is better than the established standards for the designated uses will be maintained at high quality unless it is determined by the committee, after appropriate intergovernmental coordination and public participation in concert with the Utah continuing planning process, that allowing lower water quality is necessary to accommodate important economic or social development in the area in

which the waters are located. However, existing instream water uses shall be maintained and protected. No water quality degradation is allowable which would interfere with or become injurious to existing instream water uses.

In those cases where potential water quality impairment associated with a thermal discharge is involved, the antidegradation policy and implementing method shall be consistent with Section 316 of the Federal Clean Water Act.

3.2 Antidegradation Segments

Waters of high quality which have been determined by the committee to be of exceptional recreational or ecological significance or have been determined to be a State or National resource requiring protection, shall be maintained at existing high quality through designation, by the Committee after public hearing, as antidegradation segments. New point source discharges of wastewater, treated or otherwise, are prohibited in such segments after the effective date of designation. Protection of such segments from pathogens in diffuse, underground sources is covered in R448-5 and R448-7 and the Regulations for Individual Wastewater Disposal Systems (R449-201). Other diffuse sources (nonpoint sources) of wastes shall be controlled to the extent feasible through implementation of best management practices or regulatory programs.

Projects such as, but not limited to, construction of dams or roads will be considered in antidegradation segments on a case-by-case basis where pollution will result only during the actual construction activity, and where best management practices will be employed to minimize pollution effects.

Waters of the state designated as antidegradation segments are listed in Section 2.12.

R448-2-4 Colorado River Salinity Standards

In addition to quality protection afforded by these regulations to waters of the Colorado River and its tributaries, such waters shall be protected also by requirements of "Proposed Water Quality Standards for Salinity including Numeric Criteria and Plan of Implementation for Salinity Control, Colorado River System, June 1975" and a supplement dated August 26, 1975, entitled "Supplement, including Modifications to Proposed Water Quality Standards for Salinity including

Numeric Criteria and Plan of Implementation for Salinity Control, Colorado River System, June 1975", as approved by the seven Colorado River Basin States and the U.S. Environmental Protection Agency, as updated by the 1978 Revision and the 1981, 1984, and 1987 Reviews of the above documents.

R448-2-6 Use Designations

The Committee as required by 26-11-6 Utah Code Annotated in 1953, as amended, shall group the waters of the state into classes so as to protect against controllable pollution the beneficial uses designated within each class as set forth below. Surface waters of the state are hereby classified as shown in Section 2.13.

6.1 Class 1 -- protected for use as a raw water source for domestic water systems.

- a. Class 1A -- Reserved
- b. Class 1B -- Reserved
- c. Class 1C -- protected for domestic purposes with prior treatment by treatment processes as required by the Utah Department of Health.

6.2 Class 2 -- protected for in-stream recreational use and aesthetics.

- a. Class 2A -- protected for recreational bathing (swimming).
- b. Class 2B -- protected for boating, water skiing, and similar uses, excluding recreational bathing (swimming).

6.3 Class 3 -- protected for in-stream use by aquatic wildlife.

- a. Class 3A -- protected for cold water species of game fish and other cold water aquatic life, including the necessary aquatic organisms in their food chain.
- b. Class 3B -- protected for warm water species of game fish and other warm water aquatic life, including the necessary aquatic organisms in their food chain.
- c. Class 3C -- protected for nongame fish and other aquatic life, including the necessary aquatic organisms in their food chain.
- d. Class 3D -- protected for waterfowl, shore birds, and other water-oriented wildlife not included in classes 3A, 3B, or 3C, including the necessary aquatic organisms in their food chain.

6.4 Class 4 -- protected for agricultural uses including irrigation of crops and stock watering.

6.5 Class 5 -- Reserved

6.6 Class 6 -- waters requiring protection when conventional uses as identified in Sections 2.6.1

through 2.6.5 do not apply. Standards for this class are determined on a case-by-case basis.

R448-2-7 Water Quality Standards

7.1 Application of Standards

The numeric criteria listed in Section 2.14 shall apply to each of the classes assigned to waters of the State as specified in Section 2.6 of these regulations. It shall be unlawful and a violation of these regulations for any person to discharge or place any wastes or other substances in such manner as may interfere with designated uses protected by assigned classes or to cause any of the applicable standards to be violated, except as provided in R448-1-3.1. The Committee may allow, on a case-by-case basis, site specific modifications based upon bioassay or other tests performed in accordance with standard procedures determined by the Committee.

7.2 Narrative Standards

It shall be unlawful, and a violation of these regulations, for any person to discharge or place any waste or other substance in such a way as will be or may become offensive such as unnatural deposits, floating debris, oil, scum, or other nuisances such as color, odor, or taste; or conditions which produce undesirable aquatic life or which produce objectionable tastes in edible aquatic organisms; or concentrations or combinations of substances which produce undesirable physiological responses in desirable resident fish, or other desirable aquatic life, as determined by bioassay or other tests performed in accordance with standard procedures determined by the Committee.

R448-2-8 Protection of Downstream Uses

All actions to control waste discharges under these regulations shall be modified as necessary to protect downstream designated uses.

R448-2-9 Intermittent Waters

Failure of a stream to meet water quality standards when stream flow is either unusually high or less than the 7-day, 10-year minimum flow shall not be cause for action against persons discharging wastes which meet both the requirements of R448-1 and the requirements of applicable permits.

Appendix 9 - Watershed

R448-2-12 Antidegradation Segments

In addition to assigned use classes, the following surface waters of the Diamond Resource Area are hereby designated as antidegradation segments:

- Strawberry River and tributaries, from confluence with Red Creek to headwaters.
- Avintaquin Creek, from confluence with Strawberry River to confluence with Cottonwood Creek.
- Ashley Creek and tributaries, from Steinaker diversion to headwaters.

- Jones Hole Creek and tributaries, from confluence with Green River to headwaters.
- Green River, from state line to Flaming Gorge Dam.
- Tollivers Creek, from confluence with Green River to headwaters.

12-13 Statewide

All surface waters geographically located within the outer boundaries of U.S. National Forests whether on public or private lands.

R448-2-13 Classification of Waters of the State of Utah Within DMRA.

UPPER COLORADO RIVER BASIN GREEN RIVER DRAINAGE			
AREA	STATE CLASSIFICATION		
Nine Mile Creek and tributaries, from confluence with Green River to headwaters	1C	3A	4
Pariette Draw and tributaries, from confluence with Green River to headwaters		3B, 3D	4
Duchesne River and tributaries, from confluence with Green River to Myton Water Treatment Plant intake		3B	4
Duchesne River and tributaries, from Myton Water Treatment Plant intake to headwaters	1C	3A	4
Uinta River and tributaries, from confluence with Duchesne River to Highway US-40 crossing		3B	4
Uinta River and tributaries, from Highway US-40 crossing to headwaters		3A	4
Power House Canal from confluence with Uinta River to headwaters		3A	4
Lake Fork River and tributaries, from confluence with Duchesne River to headwaters	1C	3A	4
Lake Fork Canal from Dry Gulch Canal diversion to Moon Lake	1C		4
Dry Gulch Canal, from Myton Water Treatment Plant to Lake Fork Canal	1C		4
Whiterocks River and Canal, from Tridell Water Treatment Plant to headwaters	1C	3A	4
Ashley Creek and tributaries, from confluence with Green River to Steinaker diversion		3B	4
Ashley Creek and tributaries, from Steinaker diversion to headwaters	1C	3A	4
Big Brush Creek and tributaries, from confluence with Green River to Tyzack (Red Fleet) Dam		3B	4

R448-2-13 Classification of Waters of the State of Utah Within DMRA.

UPPER COLORADO RIVER BASIN GREEN RIVER DRAINAGE			
AREA	STATE CLASSIFICATION		
Big Brush Creek and tributaries, from Tyzack (Red Fleet) Dam to headwaters	1C	3A	4
Jones Hole Creek and tributaries, from confluence with Green River to headwaters		3A	
Diamond Gulch Creek and tributaries, from confluence with Green River to headwaters		3A	4
Pot Creek and tributaries, from Crouse Reservoir to headwaters		3A	4
Green River and tributaries, from state line to Flaming Gorge Dam except as listed below:	2B	3A	4
Crouse Creek and tributaries, from confluence with Green River to headwaters		3A	4
Willow Creek and tributaries, from confluence with Green River (Daggett County) to headwaters		3A	4
Sears Creek and tributaries, Daggett County		3A	
Tollivers Creek and tributaries, Daggett County		3A	
Red Creek and tributaries, from confluence with Green River to state line		3C	4
Jackson Creek and tributaries, Daggett County		3A	
Davenport Creek and tributaries, Daggett County		3A	
Goslin Creek and tributaries, Daggett County		3A	
Gorge Creek and tributaries, Daggett County		3A	
Beaver Creek and tributaries, Daggett County		3A	
O-Wi-Yu-Kuts Creek and tributaries, County		3A	
Cart Creek and tributaries, from Flaming Gorge Reservoir to headwaters		3A	
Eagle Creek and tributaries, from Flaming Gorge Reservoir to headwaters		3A	
Carter Creek and tributaries, from Flaming Gorge Reservoir to headwaters		3A	

R448-2-13 Classification of Waters of the State of Utah Within DMRA.

UPPER COLORADO RIVER BASIN GREEN RIVER DRAINAGE				
AREA	STATE CLASSIFICATION			
Sheep Creek and tributaries, from Flaming Gorge Reservoir to headwaters			3A	4
Birch Spring Draw and tributaries, from Flaming Gorge Reservoir to headwaters			3C	4
Spring Creek and tributaries, from Flaming Gorge Reservoir to headwaters			3A	
Birch Creek and tributaries, from state line to headwaters			3A	4
Burnt Fork and tributaries, from state line to headwaters			3A	4
Middle Fork Beaver Creek and tributaries, from state line to headwaters			3A	4
West Fork Beaver Creek and tributaries, from state line to headwaters			3A	4
Henry's Fork and tributaries, from state line to headwaters			3A	4
NATIONAL WILDLIFE REFUGES AND STATE WATERFOWL MANAGEMENT AREAS				
Browns Park Waterfowl Management Area, Daggett County			3A, 3D	
Ouray National Wildlife Refuge, Uintah County			3B, 3D	
Stewart Lake Waterfowl Management Area, Uintah County			3B, 3D	
UINTAH COUNTY				
Brough Reservoir		2B	3A	4
Calder Reservoir		2B	3A	4
Crouse Reservoir		2B	3A	4
Pelican Lake		2B	3B	4
Red Fleet Reservoir	1C	2B	3A	4
Steinaker Reservoir	1C	2B	3A	4

**TABLE 2.14.1
NUMERIC CRITERIA FOR DOMESTIC, RECREATION, AND
AGRICULTURAL USES**

PARAMETER	DOMESTIC SOURCE 1C	RECREATION AND AESTHETICS		AGRICULTURE 4														
		2A	2B															
BACTERIOLOGICAL (30-day geometric mean) (No.)/100 ML Max. total coliforms Max. fecal coliforms	5000 2000	1000 200	5000 200															
PHYSICAL MIN. DISSOLVED OXYGEN (MG/L) (1) pH (Range) Turbidity Increase (NTU)	5.5 6.5-9.0	5.5 6.5-9.0 10	5.5 6.5-9.0 10	6.5-9.0														
METALS (Acid soluble, maximum MG/L)(2): Arsenic Barium Cadmium Chromium Copper Lead Mercury Selenium Silver	0.05 1.0 0.01 0.05 0.05 0.002 0.01 0.05			0.1 0.01 0.10 0.2 0.1 0.05														
INORGANICS (Maximum MG/L) Boron Fluoride (3) Nitrates as N Total dissolved solids (4)	1.4-2.4 10			0.75 1200														
RADIOLOGICAL (Maximum pCi/L) Gross Alpha Radium 226, 228 (Combined) Strontium 90 Tritium	15 5 8 20000			15														
ORGANICS (Maximum UG/L) Chlorophenoxy Herbicides 2,4-D 2,4,5-TP Endrin Hexachlorocyclohexane (Lindane) Methoxychlor Toxaphene	100 10 0.2 4 100 5																	
POLLUTION INDICATORS (5) Gross Beta (pCi/L) Bod (MG/L) Nitrate as N (MG/L) Phosphate as P (MG/L)	50	5 4 0.05	5 4 0.05	50 5														
FOOTNOTES:																		
(1) These limits are not applicable to lower water levels in deep impoundments.																		
(2) The acid soluble method as used by the State Health Laboratory involves acidification of the sample in the field, no digestion process in the laboratory, filtration, and analysis by atomic absorption spectrophotometry.																		
(3) Maximum concentration varies according to the daily maximum mean air temperature.																		
<table border="0"> <tr> <td><u>Temp (C)</u></td> <td><u>MG/L</u></td> </tr> <tr> <td>12.0</td> <td>2.4</td> </tr> <tr> <td>12.1-14.6</td> <td>2.2</td> </tr> <tr> <td>14.7-17.6</td> <td>2.0</td> </tr> <tr> <td>17.7-21.4</td> <td>1.8</td> </tr> <tr> <td>21.5-26.2</td> <td>1.6</td> </tr> <tr> <td>26.3-32.5</td> <td>1.4</td> </tr> </table>					<u>Temp (C)</u>	<u>MG/L</u>	12.0	2.4	12.1-14.6	2.2	14.7-17.6	2.0	17.7-21.4	1.8	21.5-26.2	1.6	26.3-32.5	1.4
<u>Temp (C)</u>	<u>MG/L</u>																	
12.0	2.4																	
12.1-14.6	2.2																	
14.7-17.6	2.0																	
17.7-21.4	1.8																	
21.5-26.2	1.6																	
26.3-32.5	1.4																	
(4) Total dissolved solids (TDS) limits may be adjusted on a case-by-case basis.																		
(5) Investigations should be conducted to develop more information where these pollution indicator levels are exceeded.																		

**TABLE 2.14.2
NUMERIC CRITERIA FOR AQUATIC WILDLIFE**

PARAMETER	AQUATIC WILDLIFE			
	3A	3B	3C	3D
PHYSICAL				
Total dissolved gases	(1)	(1)		
Dissolved oxygen (MG/L) (2)				
30 day average	6.5	5.5	5.0	5.0
7 day average	9.5/5.0	6.0/4.0		
1 day average	8.0/4.0	5.0/3.0	3.0	3.0
Max. temperature (C)	20	27	27	
Max. temperature change (C)	2	4	4	
pH (range)	6.5-9.0	6.5-9.0	6.5-9.0	6.5-9.0
Turbidity increase (NTU)	10	10	15	15
METALS (3)				
(Acid Soluble, UG/L) (4)				
Arsenic (trivalent)				
4 day average	190	190	190	190
1 hour average	360	360	360	360
Cadmium (5)				
4 day average	1.1	1.1	1.1	1.1
1 hour average	3.9	3.9	3.9	3.9
Chromium (hexavalent)				
4 day average	11	11	11	11
1 hour average	16	16	16	16
Chromium (trivalent) (5)				
4 day average	210	210	210	210
1 hour average	1700	1700	1700	1700
Copper (5)				
4 day average	12	12	12	
1 hour average	18	18	18	18
Cyanide (free)				
4 day average	5.2	5.2	5.2	
1 hour average	22	22	22	22
Iron (maximum)	1000	1000	1000	1000
Lead (5)				
4 day average	3.2	3.2	3.2	3.2
1 hour average	82	82	82	82
Mercury				
4 day average	0.012	0.012	0.012	0.012
1 hour average	2.4	2.4	2.4	2.4
Nickel (5)				
4 day average	160	160	160	160
1 hour average	1400	1400	1400	1400
Selenium				
4 day average	5.0	5.0	5.0	5.0
1 hour average	20	20	20	20
Silver				
4 day average	0.12	0.12	0.12	
1 hour average	4.1	4.1	4.1	4.1
Zinc (5)				
4 day average	110	110	110	110
1 hour average	120	120	120	120
INORGANICS (MG/L) (3)				
Ammonia as N (un-ionized) (6)				
4 day average	(6a)	(6a)		
1 hour average	(6b)	(6b)	(6b)	(6b)
Chlorine (total residual) (7)				
4 day average	0.011	0.011		
1 hour average	0.019	0.019	0.2	(8)
Hydrogen Sulfide (undissociated, max, UG/L)	2.0	2.0	2.0	2.0
Phenol (maximum)	0.01	0.01	0.01	0.01
RADIOLOGICAL (maximum pCi/L)				
Gross Alpha (9)	15	15	15	15

**TABLE 2.14.2 (Continued)
NUMERIC CRITERIA FOR AQUATIC WILDLIFE**

PARAMETER	3A	3B	3C	3D
ORGANICS (UG/L) (3)				
Aldrin (maximum)	3.0	3.0	3.0	3.0
Chlordane				
4 day average	0.0043	0.0043	0.0043	0.0043
1 hour average	2.4	2.4	2.4	2.4
Endosulfan				
4 day average	0.056	0.056	0.056	0.056
1 hour average	0.18	0.18	0.18	0.18
Endrin				
4 day average	0.0023	0.0023	0.0023	0.0023
1 hour average	0.18	0.18	0.18	0.18
Guthion (maximum)	0.01	0.01	0.01	0.01
Heptachlor				
4 day average	0.0038	0.0038	0.0038	0.0038
1 hour average	0.52	0.52	0.52	0.52
Hexachlorocyclohexane (Lindane)				
4 day average	0.08	0.08	0.08	0.08
1 hour average	2.0	2.0	2.0	2.0
Methoxychlor (maximum)	0.03	0.03	0.03	0.03
Mirex (maximum)	0.001	0.001	0.001	0.001
Parathion (maximum)	0.04	0.04	0.04	0.04
PCB's				
4 day average	0.014	0.014	0.014	0.014
1 hour average	2.0	2.0	2.0	2.0
Pentachlorophenol (10)				
4 day average	13	13	13	13
1 hour average	20	20	20	20
Toxaphene				
4 day average	0.0002	0.0002	0.0002	0.0002
1 hour average	0.73	0.73	0.73	0.73
POLLUTION INDICATORS (9)				
Gross Beta (pCi/L)	50	50	50	50
Bod (MG/L)	5	5	5	5
Nitrate as N (MG/L)	4	4	4	
Phosphate as P (MG/L) (11)	0.05	0.05		

FOOTNOTES:

- (1) Not to exceed 110% of saturation
 - (2) These limits are not applicable to lower water levels in deep impoundments. First number in column is for when early life stages are present, second number is for when all other life stages present.
 - (3) Where criteria are listed as 4-day average and 1-hour average concentration, these concentrations should not be exceeded more often than once every three years on the average.
 - (4) The acid soluble method as used by the State Health Laboratory involves acidification of the sample in the field, no digestion process in the laboratory, filtration, and analysis by atomic absorption spectrophotometry.
 - (5) Hardness dependent criteria. 100 mg/l used. See Table 2.14.3 for complete equation.
 - (6) Un-ionized ammonia toxicity is dependent upon the temperature and pH of the waterbody. For detailed explanation refer to Federal Register, Vol. 50, 30784, July 29, 1985.
 - (6a) The 4-day average concentration of un-ionized ammonia in mg/l as N: $(0.80/FT/FPH/Ratio) * 0.822$
 - (6b) The 1-hour average concentration of un-ionized ammonia in mg/l as N: $(0.52/FT/FPH/2) * 0.822$
 Where: FT is a function of temperature which adjusts the criteria concentration for the ambient temperature.
 $FT = 10^{0.03(20-TCAP)}$; $TCAP \leq T \leq 30$.
 $FT = 10^{0.03(20-T)}$; $0 \leq T < TCAP$
- and FPH is a function of pH which adjusts the criteria concentration for ambient pH.
 $FPH = 1$; $8.0 \leq pH \leq 9.0$
 $= (1 + 10^{7.4-pH/1.25})$; $6.5 \leq pH < 8.0$
- and RATIO is the ratio between acute and chronic criteria and is dependent upon pH.
 $RATIO = 16$; $7.7 \leq pH \leq 9.0$
 $= 24(10^{7.7-pH}/(1 + 10^{7.4-pH}))$; $6.5 \leq pH < 7.7$
- and TCAP is the maximum temperature that the criteria can be applied and is dependent upon the aquatic community present (i.e., warm water or cold water).
 For Class 3A only: TCAP = 15C in equation 6a
 For Class 3A only: = 20C in equation 6b
 For Class 3B: TCAP = 20C in equation 6a
 For Class 3B, 3C, and 3D: TCAP = 25C in equation 6b
- For Tables of Values, see following page. (FOOTNOTES CONTINUED ON BOTTOM OF NEXT PAGE.)

TABLE 2.14.2 (Continued)
NUMERIC CRITERIA FOR AQUATIC WILDLIFE

1-HOUR AVERAGE CONCENTRATION OF UN-IONIZED AMMONIA AS N (MG/L) FOR CLASS 3A WATERS TEMPERATURE (C)							
pH	0.00	5.00	10.00	15.00	20.00	25.00	30.00
6.50	0.008	0.011	0.015	0.021	0.030	0.030	0.030
7.00	0.019	0.027	0.038	0.054	0.076	0.076	0.076
4.50	0.037	0.053	0.075	0.105	0.149	0.149	0.149
8.00	0.054	0.076	0.107	0.151	0.214	0.214	0.214
8.50	0.054	0.076	0.107	0.151	0.214	0.214	0.214
9.00	0.054	0.076	0.107	0.151	0.214	0.214	0.214
4-DAY AVERAGE CONCENTRATION OF UN-IONIZED AMMONIA AS N (MG/L) FOR CLASS 3A WATERS TEMPERATURE (C)							
6.50	0.001	0.001	0.001	0.002	0.002	0.002	0.002
7.00	0.002	0.002	0.003	0.005	0.005	0.005	0.005
7.50	0.005	0.008	0.011	0.015	0.015	0.015	0.015
8.00	0.010	0.015	0.021	0.029	0.029	0.029	0.029
8.50	0.010	0.015	0.021	0.029	0.029	0.029	0.029
9.00	0.010	0.015	0.021	0.029	0.029	0.029	0.029
1-HOUR AVERAGE CONCENTRATION OF UN-IONIZED AMMONIA AS N (MG/L) FOR CLASS 3B, 3C, AND 3D WATERS TEMPERATURE (C)							
6.50	0.008	0.011	0.015	0.021	0.030	0.042	0.042
7.00	0.019	0.027	0.038	0.054	0.076	0.107	0.107
7.50	0.037	0.053	0.075	0.105	0.149	0.210	0.210
8.00	0.054	0.076	0.107	0.151	0.214	0.302	0.302
8.50	0.054	0.076	0.107	0.151	0.214	0.302	0.302
9.00	0.054	0.076	0.107	0.151	0.214	0.302	0.302
4-DAY AVERAGE CONCENTRATION OF UN-IONIZED AMMONIA AS N (MG/L) FOR CLASS 3B WATERS TEMPERATURE (C)							
6.50	0.001	0.001	0.001	0.002	0.002	0.002	0.002
7.00	0.002	0.002	0.003	0.005	0.007	0.007	0.007
7.50	0.005	0.008	0.011	0.015	0.022	0.041	0.041
8.00	0.010	0.015	0.021	0.029	0.041	0.041	0.041
8.50	0.010	0.015	0.021	0.029	0.041	0.041	0.041
9.00	0.010	0.015	0.021	0.029	0.041	0.041	0.041
<p>(7) Special case segments and maximum TRC concentrations as follows: Mill Race from Interstate Highway 15 to the Provo City wastewater treatment plant discharge: 0.2 mg/l. Ironton Canal (Utah County), from Utah Lake (Provo Bay) to east boundary of Denver and Rio Grande Western Railroad right-of-way: 0.05 mg/l. Beer Creek (Utah County) from 4850 West (in NE1/4NE1/4 sec. 36, T.8 S., R.1 E.) to headwaters: 0.3 mg/l</p> <p>(8) Numeric criteria determined on a case-by-case basis.</p> <p>(9) Investigations should be conducted to develop more information where these levels are exceeded.</p> <p>(10) pH dependent criteria. pH 7.8 used in table. See Table 2.14.4 for equation.</p> <p>(11) Phosphate as P (mg/l) limit for lakes and reservoirs shall be 0.025.</p>							

**TABLE 2.14.3
EQUATIONS FOR PARAMETERS WITH
HARDNESS (1) DEPENDENCE**

PARAMETER	4-DAY AVERAGE CONCENTRATION (UG/L)	1-HOUR AVERAGE CONCENTRATION (UG/L)
Cadmium	$e(0.7852[1n(\text{hardness})]-3.490)$	$e(1.128[1n(\text{hardness})]-3.828)$
Chromium (Trivalent)	$e(0.8190[1n(\text{hardness})]+1.561)$	$e(0.8190[1n(\text{hardness})]+3.688)$
Copper	$e(0.8545[1n(\text{hardness})]-1.465)$	$e(0.9422[1n(\text{hardness})]-1.464)$
Lead	$e(1.273[1n(\text{hardness})]-4.705)$	$e(1.273[1n(\text{hardness})]-1.460)$
Nickel	$e(0.8460[1n(\text{hardness})]+1.1645)$	$e(0.8460[1n(\text{hardness})]+3.3612)$
Silver	N/A	$e(1.72[1n(\text{hardness})]-6.52)$
Zinc	$e(0.8473[1n(\text{hardness})]+0.7614)$	$e(0.8473[1n(\text{hardness})]+0.8604)$
FOOTNOTE: (1) Hardness as mg/1 CaCO ₃		

**TABLE 2.14.4
EQUATIONS FOR
PENTACHLOROPHENOL
(pH DEPENDENT)**

4-DAY AVERAGE CONCENTRATION (UG/L)	1-HOUR AVERAGE CONCENTRATION (UG/L)
$e[1.005(\text{pH})]-5.290$	$e[1.005(\text{pH})]-4.830$