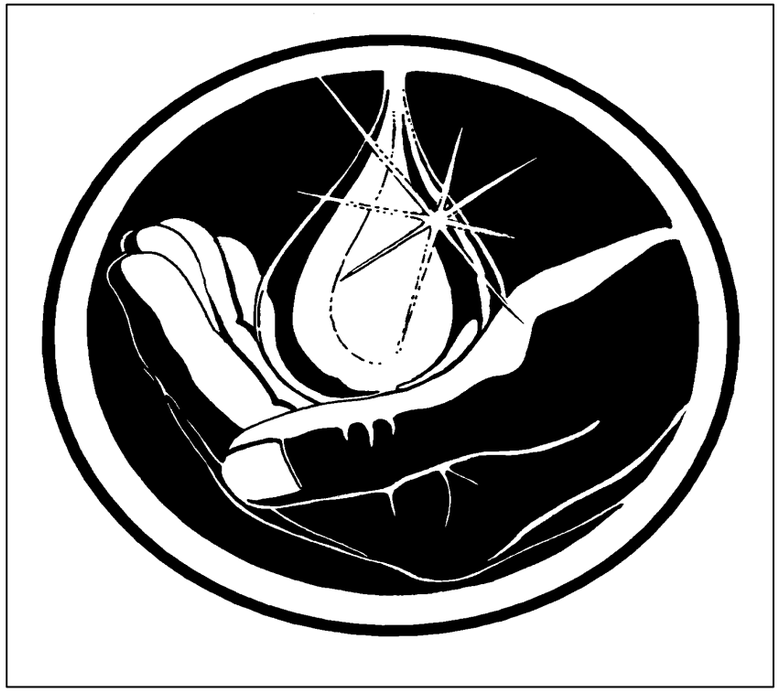
Appendix E

CIRCULAR DEQ-7

MONTANA
NUMERIC WATER QUALITY STANDARDS



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CIRCULAR DEQ-7

Introduction

This document contains numeric water quality standards for Montana's surface and ground waters. The standards were developed in compliance with Section 75-5-301, MCA of the Montana Water Quality Act and Section 303(c) of the Federal Clean Water Act (CWA). Together, those provisions of state and federal law require the adoption of standards that will protect the designated beneficial uses of state waters, such as the support of aquatic life, public water supplies, recreation, or agriculture. The numeric water quality standards in this Circular have been established for parameters (i.e., "pollutants") that are categorized as toxic, carcinogenic, bioconcentrating, radioactive, nutrient, or harmful. In addition, the Circular contains ground water standards for pesticides developed in compliance with the Montana Agricultural Chemical Ground Water Protection Act (80-15-201, MCA).

Montana's numeric water quality standards were developed using guidance from the U.S. Environmental Protection Agency (EPA). EPA's guidance for water quality standards includes criteria for priority pollutants (PP) and non-priority pollutants (NPP) developed under Section 304 of the CWA, health advisories (HA), National Recommended Water Quality Criteria (NRWQC), and drinking water criteria referred to as Maximum Contaminant Levels (MCL). Publications containing EPA guidance include: 1986 Quality Criteria for Water, EPA 440/5/86-001 (the "Gold Book") and numerous updates; Toxics Criteria for those States not Complying with Clean Water Act 303(c)(2)(B); (The National Toxics Rule [NTR]) which was published in the Code of Federal Regulations, 40 CFR 131.36 (1992); Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; (62 F.R. 42159 [1997]); National Recommended Water Quality Criteria :2002 (EPA 822-R-02-047); and 2004 Edition of the Drinking Water Standards and Health Advisories (EPA 822-R-04-005). In general, the most recent EPA guidance was used to develop the standards in this Circular.

CIRCULAR DEQ-7 is regularly updated as additional information or guidance from EPA becomes available. Accordingly, readers should ensure that they are using the edition incorporated into the Board's current rules regarding water quality standards.

CIRCULAR DEQ-7 is a complex document. In addition to providing the numeric water quality standards for each parameter, the Circular also contains the primary synonyms of each parameter, the Chemical Abstracts Service Registry Number (CASRN) number for each chemical, the categorization of each parameter according to the type of pollutant, the bioconcentration factor if known, trigger values used to determine "significance" under Montana's nondegradation policy, and required reporting values. The Department will provide electronic copies of this document upon request or the document may be retrieved from the Department WEB site at, http://www.deq.mt.gov/wqinfo/Circulars/DEQ-7.PDF. Use of an electronic copy will enable the reader to search for synonyms or CASRN numbers. Such searches will make this document easier to use. Parameters are listed in alphabetical order. In order to facilitate listing by alphabetical order, parameters that are normally written with the numbers first are listed with the numbers last. For example, 2,4-Dinitrophenol is listed as Dinitrophenol, 2,4-.

There are many explanatory notes following the table portion of CIRCULAR DEQ-7. Footnotes referencing the explanatory notes are found in both the table headings and in individual line items. The notes following the table explain various aspects of the standards. For example, the standards for some metals, ammonia, dissolved oxygen, and phenol, cover a range of values that are computed by using a complex formula, or depend upon special circumstances.

Rules Containing Montana's Water Quality Standards

The Administrative Rules of Montana (ARM), 17.30.620 through 17.30.670, contain numeric surface water quality standards that vary with each stream classification. Examples of numeric standards that change under each stream classification include Eschierichia coli bacteria, color, turbidity, pH, and temperature. Montana's surface water rules also contain narrative standards. Narrative standards are also contained in Montana's rules for ground water (ARM 17.30.1001 through 17.30.1045). The narrative standards cover a number of parameters, such as alkalinity, chloride, hardness, sediment, sulfate, total dissolved solids and nutrients (for surface water), for which sufficient information does not exist to develop specific numeric standards.

Statutory Basis and Assumptions Used to Develop Water Quality Standards

Carcinogens: The Montana Water Quality Act requires that human health standards for carcinogens be the more restrictive of either of the following: (1) the risk-based level of one in one hundred thousand [1x10-5] for all carcinogens except arsenic, which is based upon one in one thousand [1x10-3]; or, (2) the MCL. For surface water the risk-based levels given in EPA's NRWQC criteria were used or, if not available, health advisory (HA) information was used. In cases where a risk-based level was not available, the most recent RfD or cancer potency factor (q1*) in IRIS was used to compute the standard. In cases where no risk-based levels were available for known carcinogens, the standards in this Circular are based on toxic effects. Ground water standards are based on EPA Drinking Water Health Advisories, NRWQC or IRIS information.

Bio-concentrating: The human health standards for carcinogens and other parameters that exhibit bio-concentration properties were developed using the assumption that there are two routes of exposure: through consumption of water and fish. EPA’s water quality criteria are derived using an average fish consumption rate of 17.5 grams/day. Montana has not conducted its own fish consumption survey. The standards in this Circular use EPA's recommended average daily fish consumption value.

Pesticides: The Montana Agricultural Chemical Ground Water Protection Act requires that MCLs be adopted as ground water standards for pesticides if MCLs are available. If no MCLs or other federal criteria are available, standards must be developed using available data on health effects (reference dose, [RfD]) and standard assumptions. The standard assumptions used assume that 2 liters of water are consumed per day and adults weighing seventy kilograms are exposed for 70 years (life long exposure) to a single source of water. When information was available, a relative source contribution (RSC) factor was also applied. The RSC is the percentage of a parameter’s intake through drinking water versus other dietary sources. A RSC of 0.2 was used in most cases to develop ground water standards for pesticides. In some cases, no data was available to develop a water quality standard for a pesticide in surface water. In these cases, the ground water standard (developed for a pesticide according to the risk-base analysis provided above) was also adopted as a surface water standard. The Integrated Risk Information System (IRIS) or other federal data sources were used when the EPA's most recent drinking water regulations and health advisories did not include data for a pesticide.

Toxins: The surface water quality standards for human health toxins are the more restrictive of the MCL or the NRWQC criteria. The ground water standards for human health toxins are based on the drinking water MCL or if a MCL is not available the NRWQC criteria.

Aquatic life: The standards for aquatic life are based on the most recent National Recommended Water Quality Criteria (NRWQC) published by EPA.

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CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)

Except where indicated, values are listed as micro-grams-per-liter (µg/L). A '---' indicates that a Standard has not been adopted or information is currently unavailable. A '( )' indicates that a detailed note of explanation is provided.

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Acenaphthene §§--- § 3Acenaphthalene § Naphthyleneethylene § 1,8-Ethylenenaphthalene § 1,8-Ethylene Naphthalene § 1,2-Dihydroacenphthylene § Acenphthylene, 1,2-Dihydro-	83329 or 83-32-9 NIOSH: AB 1255500 SAX: AAE750	Toxic	---	---	242	670 PP	670 PP	N/A	10
Acifluorfen §§ Blazer § Tackle § Scepter § as sodium salt	62476-59-9	Carcinogen	---	---	---	10 HA	10 HA	N/A	---
Acrolein §§ Aqualine § Biocide § Crolean § Aqualin § Propenal § SHA 00701 § 2-propenal § Acraldehyde § Acrylaldehyde § Acrylic Aldehyde § Ethylene Aldehyde	107028 or 107-02-8 NIOSH: AS 1050000 SAX: ADR000	Carcinogen	---	---	215	190 PP	190 PP	0.7	20
Acrylamide §§ 2-Propenamide § Propenamide§ Acrylic Amide § Ethylenecarboxamide § RCRA Waste Number U007	79061 or 79-06-1 NIOSH: AS 3325000 SAX: ADS250	Carcinogen	---	---	---	0.08 HA	0.08 HA	---	---
Acrylonitrile §§ Fumigrain § Ventox § ENT 54 § TL 314 § Carbacryl § Cyanoethylene § Vinyl cyanide § Propenenitrile § 2-Propenenitrile § Acrylonitrile monomer § RCRA Waste Number U009	107131 or 107-13-1 also listed as 75-05-8 NIOSH: AT 5250000 SAX: ADX500 75-05-8	Carcinogen	---	---	30	0.51 PP	0.6 HA	N/A	20
Alachlor §§ Lasso § Lazo § Alator § Alanex § Alochlor § Pillarzo § Metachlor § Chimiclor § SHA 090501 § Methachlor § 2-Chloro-N-(2,6-Diethyl)Phenyl-N-Methoxymethylacetamide § 2-Chloro-2',6'-Diethyl-N-(Methoxymethyl)Acetanilide	15972608 or 15972-60-8 NIOSH: AE 1225000 SAX: CFX000	Carcinogen	---	---	---	2 MCL	2 MCL	N/A	0.4
Aldicarb §§ Temik § Temic § Ambush § OMS 771 § Temik G 10 § Aldecarb § Carbamyl § SHA 098301 § Carbanolate § Sulfone Aldoxycarb § Union Carbide 21149 § RCRA Waste Number P070 § Propanal, 2-Methyl-2-(Methylthio)-, O-[(Methylamino)Carbonyl]Oxime	116063 or 116-06-3 NIOSH: UE 2275000 SAX: CBM500	Toxic	---	---	---	3 MCL	3 MCL	1	1
Aldicarb Sulfone §§ Aldoxycarb § Standak § UC 21865 § Sulfocarb § SHA 110801 § Propionaldehyde, 2-Methyl-2-(Methylsulfonyl)-, O-(Methylcarbomoyl)Oxime § 2-Methyl-2-(Methylsulfonyl)Propanal O-[(Methylamino)Carbonyl]Oxime	1646884 or 1646-88-4 NIOSH: UE 2080000 SAX: AFK000	Toxic	---	---	---	3 MCL	3 MCL	2	1
Aldicarb Sulfoxide §§ ---	1646873 or 1646-87-3 NIOSH: --- SAX: ---	Toxic	---	---	---	4 MCL	4 MCL	2	1

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			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Aldrin §§ --- § HHDN § Altox § Drinox § Aldrex § Aldrite § Seedrin § Octalene § SHA 045101 § RCRA Waste Number P004 § Hexachlorohexahydro-endo-exo-Dimethanonaphthalene § 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8, 8a-Hexahydro-1,4,5,8-Dimethanonaphthalene § 1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-Hexahydro-endo,exo- § 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-Hexa-Hydro-1,4:5,8-Endo,Exo-Dimethanonaphthalene § 1,2,3,4,10,10-Hexachloro-1,4,4a,5,8,8a-Hexahydro-1,4-endo-exo-5,8-Dimethanonaphthalene	309002 or 309-00-2 NIOSH: IO 2100000 SAX: AFK250	Carcinogen	1.5 PP	---	4,670	0.00049 PP	0.02 HA	N/A	0.2
Alpha Emitters (11) §§ --- § Gross Alpha § Adjusted Gross Alpha	Multiple	Carcinogen / Radioactive	---	---	---	1.5 pico-curies/liter HA	1.5 pico-curies/liter HA	N/A	---
alpha-Chlordane §§ -Chlordane § cis-Chlordan § cis-Chlordane § c (cis)-Chlordane § Chlordane, cis-Isomer	5103719 or 5103-71-9 NIOSH: PB 9705000 SAX: CDR675	Carcinogen	---	---	14,100	0.0080 PP	1 HA	N/A	0.4
alpha-Hexachlorocyclohexane §§ --- § Benzene Hexachloride-§-isomer § a-BHC § alpha-BHC § HCH-alpha § alpha-HCH § alpha-Lindane § a Hexachlorocyclohexane § alpha-Benzenehexachloride § Hexachlorocyclohexane-alpha § alpha-Hexachlorocyclohexane § Benzene Hexachloride-alpha-isomer § alpha-1,2,3,4,5,6-Hexachlorocyclohexane § Cyclohexane, alpha-1,2,3,4,5,6-Hexachloro- § 1-alpha,2-alpha,3-beta,4-alpha,5-beta,6-beta-Hexachlorocyclohexane § Cyclohexane, alpha-1,2,3,4,5,6-Hexachloro-, (1-alpha, 2-alpha, 3-beta, 4-alpha, 5-beta, 6-beta)-	319846 or 319-84-6 NIOSH: GV 3500000 SAX: BBQ000	Carcinogen	---	---	130	0.026 PP	0.026 PP	N/A	0.1
Aluminum, dissolved, pH 6.5 to 9.0 only (9) §§ Al	7429905 or 7429-90-5 NIOSH: BD 0330000 SAX: AGX000	Toxic	750 NPP	87 NPP	---	---	---	30	30
Ametryn §§ Ametrex	834-12-8	Toxic	---	---	---	60 HA	60 HA	---	---
Ammonia [total ammonia nitrogen (NH3-N plus NH4-N)] as mg/l N §§ --- § Ammonia Anhydrous § Anhydrous Ammonia § Spirit of Hartshorn	7664417 or 7664-41-7 NIOSH: BO 0875000 SAX: AMY500	Toxic	(7)(8) NPP	(7)(8) NPP	---	---	---	10	50
Ammonium Sulfamate §§ ---	7773-06-0	Toxic	---	---	---	2,000 HA	2,000 HA	---	---
Anthracene (PAH) §§ Paranaphthalene § Green Oil § Anthracin § Tetra Olive N2G	120127 or 120-12-7 NIOSH: CA 9350000 SAX: APG500	Toxic	---	---	30	8,300 PP	2,100 HA	0.04	0.2

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			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Antimony §§ Sb § Antimony Black § Antimony Regulus § C.I. 77050 § Stibium	7440360 or 7440-36-0 NIOSH: CC 4025000 SAX: AQB750	Toxic	---	---	1	5.6 PP	6 MCL	0.4	3
Arsenic §§ As § Arsenicals § Arsenic-75 § Arsenic Black § Colloidal Arsenic § Grey Arsenic § Metallic Arsenic	7440382 or 7440-38-2 NIOSH: CG 0525000 SAX: ARA750	Carcinogen	340 PP	150 PP	44	see footnote 29	see footnote 29	N/A	3
Asbestos, fibers longer than 10 microns in length §§ --- § Amianthus § Amosite (Obs.) § Amphibole § Asbestos Fiber § Fibrous Grunerite § NCI CO8991 § Serpentine, includes Chrysotile, Actinolite, Aurosite, Anthophyllite, Crocidolite, and Tremolite	Multiple	Carcinogen	---	---	---	7,000,000 fibers/liter MCL	7,000,000 fibers/liter MCL	N/A	---
Atrazine §§ --- § Aatrex § Aktikon § Atrasine § Atred § Candex § Crisatrina § Crisazine § Cyazin § Fenamin § Fenamine § Zeaphos § Fenatrol § Gesaprim § Hungazin § Inakor § Primatol § Malermais § Radazin § Radizine § Shell Atrazine herbicide § Strazine § Zeazine § SHA 080803 § 1-Chloro-3-Ethylamino-5-Isopropylamino-2,4,6-Triazine § s-Triazine, 2-Chloro-4-Ethylamino-6-Isopropylamino- § 2-Chloro-4-Ethylamino-6-Isopropylamino-s-Triazine § 6-Chloro-N-Ethyl-N'-(1-Methylethyl)-1,3,5-Triazine-2, 4-Diamine	1912249 or 1912-24-9 NIOSH: XY 5600000 SAX: PMC325	Carcinogen	---	---	---	3 MCL	3 MCL	0.1	0.6
Barium §§ Ba	7440393 or 7440-39-3 NIOSH: CA 8370000 SAX: BAH250	Toxic	--- NPP	--- NPP	---	2,000 MCL	2,000 MCL	2	5
Bentazon Methyl §§ --- § Basagran	50723-80-3 25057-89-0	Toxic	---	---	---	200 HA	200 HA	---	---
Benzene §§ --- § Phene § Benzol § Benzolene § Pyrobenzol § Carbon Oil § SHA 109301 § Coal Naphtha § Motor Benzol § Phenyl hydride § Cyclohexatriene C § Caswell Number 077 § RCRA Waste Number U019 § EPA Pesticide Chemical Code 008801 § NCI C55276	71432 or 71-43-2 NIOSH: CY 1400000 SAX: BBL250	Carcinogen	---	---	5.2	5 MCL	5 MCL	N/A	0.5
Benzidine §§ --- § p,p'-Bianiline § 4,4'-Bianiline § 4,4'-Biphenyldiamine § p,p'-Diaminobiphenyl § 4,4'-Diaminodiphenyl § RCRA Waste Number U021 § 4,4'-Biphenylenediamine § 4,4'-Diphenylenediamine § Biphenyl, 4,4'-Diamino- § 4,4'-Diamino-1,1'-Biphenyl § (1,1'-Biphenyl)-4,4'-Diamine § NCI C03361	92875 or 92-87-5 NIOSH: DC 9625000 SAX: BBX000	Carcinogen	---	---	87.5	0.00086 PP	0.00086 PP	N/A	20

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			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Benzo(g,h,i)perylene (PAH) § 1,12-Benzoperylene § 1,12-Benzperylene § Benzo(ghi)Perylene	191242 or 191-24-2 NIOSH: DI 6200500 SAX: BCR000	Toxic	---	---	30	---	---	0.076	10
Benzo[a]Pyrene (PAH) §§ --- § BaP § 3,4-BP § Benz(a)Pyrene § Benzo-a-Pyrene § 3,4-Benzpyrene § 6,7-Benzopyrene § 3,4-Benzopyrene § 3,4-Benz(a)Pyrene § Benzo(d,e,f)Chrysene	50328 or 50-32-8 NIOSH: DJ 3675000 SAX: BCS750	Carcinogen	---	---	30	0.038 PP	0.05 HA	N/A	0.10
Benzo[b]Fluoranthene (PAH) §§ --- § B(b)F § Benzo(b)Fluoranthene § Benzo(e)Fluoranthene § 2,3-Benzfluoranthene § 3,4-Benzfluoranthene § 3,4-Benzofluoranthene § 2,3-Benzofluoranthene § 2,3-Benzofluoranthrene § Benz(e)Acephenanthrylene § 3,4-Benz(e)Acephenanthrylene	205992 or 205-99-2 NIOSH: CU 1400000 SAX: BAW250	Carcinogen	---	---	30	0.038 PP	0.5 (30) HA	N/A	0.10
Benzo[k]Fluoranthene (PAH) §§ --- § Benzo(k)Fluoranthene § 8,9-Benzofluoranthene § Dibenzo(b,jk)Fluorene § 2,3,1'8'-Binaphthylene § 11,12-Benzofluoranthene § 11,12-Benzo(k)Fluoranthene	207089 or 207-08-9 NIOSH: DF 6350000 SAX: BCJ750	Carcinogen	---	---	30	0.038 PP	5 (30) HA	N/A	0.10
Benz[a]anthracene (PAH) §§ --- § Tetraphene § Benzanthracene § Benzoanthracene § Naphthanthracene § 1,2-Benzanthrene § Benz(a)Anthracene § Benzo(a)Anthracene § 1,2-Benzanthracene § Benzo(b)Phenanthrene § 1,2-Benzoanthracene § Benzanthracene, 1,2- § 1,2-Benz(a)Anthracene § 2,3-Benzophenanthrene § RCRA Waste Number U018	56553 or 56-55-3 NIOSH: CV 9275000 SAX: BBC250	Carcinogen	---	---	30	0.038 PP	0.5 (30) HA	N/A	0.10
Beryllium §§ Be § Beryllium-9 § Glucinum § RCRA Waste Number P015	7440417 or 7440-41-7 NIOSH: DS 1750000 SAX: BFO750	Carcinogen	---	---	19	4 MCL	4 MCL	N/A	1
Beta Emitters (11) §§ --- § Gross Beta	Multiple	Carcinogen/ Radioactive	---	---	---	0.4 mrem /yr HA	0.4 mrem /yr HA	N/A	---
Beta-Chloronaphthalene §§ 2-Chloronaphthalene § ß-Chloronaphthalene § Naphthalene, 2-Chloro- § RCRA Waste Number U047	91587 or 91-58-7 NIOSH: QJ 2275000 SAX: CJA000	Toxic	---	---	202	1,000 PP	1,000 PP	0.94	10

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			Acute (3)	Chronic (4)		Surface Water	Ground Water		
beta-Hexachlorocyclohexane §§ --- § ß-BHC § beta-BHC § HCH-beta § beta-HCH § ß-Lindane § beta-Lindane § beta-Hexachlorobenzene § ß Hexachlorocyclohexane § Hexachlorocyclohexane-beta § Hexachlorocyclohexane, beta- § trans-alpha-Benzenehexachloride § Cyclohexane, 1,2,3,4,5,6-Hexachloro-, beta- § 1-alpha,2-beta,3-alpha,4-beta,5-alpha,6-beta- Hexachlorocyclohexane § Cyclohexane, 1,2,3,4,5,6-Hexachloro-, (1-alpha, 2-beta, 3-alpha, 4- beta, 5-alpha, 6-beta)- § Benzenehexachloride, trans-alpha- § beta-1,2,3,4,5,6- Hexachlorocyclohexane	319857 or 319-85-7 NIOSH: GV 4375000 SAX: BBR000	Carcinogen	---	---	130	0.091 PP	0.091 PP	N/A	0.1
Bis(2-Chloroisopropyl) Ether §§ --- § DCIP § NCI C50044 § RCRA Waste Number U027 § Dichlorodiisopropyl Ether § 2,2'-Oxybis(1-Chloropropane) § Bis (2-Chloroisopropyl) ether § Propane, 2,2'-Oxybis(2-Chloro- § Propane, 2,2'-Oxybis[1-Chloro- § 2',2'-Dichlorodiisopropyl Ether § Dichlorodiisopropyl Ether (DOT) § Bis(2-Chloro-1-Methylethyl) Ether	108601 or 108-60-1 NIOSH: KN 1750000 SAX: BII250 39638-32-9	Toxic	---	---	2.47	1,400 PP	1,400 PP	0.8	10
Bis(2-Chloroethoxy)Methane §§ --- § Bis(ß-Chloroethyl)Formal	111911 or 111-91-1 NIOSH: PA 3675000 SAX: BID750	Toxic	---	---	0.64	---	---	0.5	---
Bis(Chloroethyl)Ether §§ --- § BCEE § DCEE § Clorex § Chlorex § Chloroethyl Ether § Dichloroethyl Ether § Dichloroethyl Oxide § RCRA Waste Number U025 § Bis(Chloroethyl) Ether § Di(2-Chloroethyl) Ether § Bis (Chloroethyl) Ether § Bis(2- Chloroethyl) Ether § Bis(ß-Chloroethyl) Ether § ß,ß'-Dichloroethyl Ether § 2,2'-Dichloroethyl Ether § Bis (2-Chloroethyl) Ether § 1,1'-Oxybis(2-Chloro)Ethane § Ethane, 1,1'-Oxybis[2-Chloro- § beta,beta'-Dichloroethyl Ether § 1-Chloro-2-(beta- Chloroethoxy)Ethane	111444 or 111-44-4 NIOSH: KN 0875000 SAX: BIC750	Carcinogen	---	---	6.9	0.30 PP	0.30 PP	N/A	10
Bis(Chloromethyl)Ether §§ --- § BCME § bis-CME § Chloromethyl Ether § Oxybis(Chloromethane) § RCRA Waste Number P016 § Bis (Chloromethyl) Ether § sym-Dichlorodimethyl Ether § 1,1'-Dichlorodimethyl Ether § Dimethyl-1,1'-Dichloroether § Chloro(Chloromethoxy) Methane	542881 or 542-88-1 NIOSH: 1575000 SAX: BIK000	Carcinogen	---	---	63	0.0010 NPP	0.0010 NPP	N/A	10
Bromacil §§ Hyvar § ---	314-40-9	Carcinogen	---	---	---	90 HA	90 HA	N/A	0.5
Bromodichloromethane (HM) §§ Dichlorobromomethane § BDCM § NCI C55243 § Methane, bromodichloro- § Dichloromonobromomethane § Monobromodichloromethane	75274 or 75-27-4 NIOSH: PA 5310000 SAX: BND500	Carcinogen	---	---	3.75	5.5 PP	10 HA	N/A	0.5

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			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Bromoform (HM) **§§ Tribromomethane** **§ NCI C55130 § Methane, Tribromo- § Methenyl Tribromide § RCRA Waste Number U225**	**75252 or 75-25-2** **NIOSH: PB 5600000** **SAX: BNL000**	**Carcinogen**	**---**	**---**	**3.75**	**43** **PP**	**80** **HA**	**N/A**	**0.5**
Bromomethane (HM) **§§ Methyl Bromide** **§ EDCO § Celfume § Dowfume § Methogas § SHA 053201 § Brom-O-Sol** **§ Brom-O-Gas § Terr-O-Gas § Halon 1001 § Terr-O-Cide § Bromo-O-Gas** **§ Bromo Methane § Methylbromide § Methyl Bromide § Methane, Bromo-** **§ Monobromomethane § RCRA Waste Number U029**	**74839 or 74-83-9** **NIOSH: PA 4900000** **SAX: BNM500**	**Toxic**	**---**	**---**	**3.75**	**47** **PP**	**10** **HA**	**0.11**	**0.5**
Bromoxynil	**1689-84-9**	**Carcinogen**	**---**	**---**	**---**	**3.4** **HA**	**3.4** **HA**	**---**	**---**
Butyl Benzyl Phthalate **§§ ---** **§ BBP § Sicol 160 § Unimoll BB § Palatinol BB § Santicizer 160** **§ Butylbenzylphthalate § Butylbenzyl Phthalate § Benzyl Butyl Phthalate § n-Benzyl Butyl Phthalate § Benzyl n-Butyl Phthalate § Phthalic Acid, Benzyl Butyl Ester § Butyl Phenylmethyl 1,2-Benzenedicarboxylate § 1,2-Benzenedicarboxylic Acid, Butyl Phenylmethyl**	**85687 or 85-68-7** **NIOSH: TH 9990000** **SAX: BEC500**	**Toxic with BCF >300**	**---**	**---**	**414**	**1,500** **PP**	**1,500** **PP**	**N/A**	**10**
Butylate **§§ Sutan** **§ ---**	**2008-41-5**	**Carcinogen**	**---**	**---**	**---**	**400** **HA**	**400** **HA**	**N/A**	**---**
Cadmium **§§ Cd** **§ C.I. 77180 § Colloidal Cadmium**	**7440439 or 7440-43-9** **NIOSH: EU 9800000** **SAX: CAD000**	**Toxic**	**0.52@25 mg/l hardness (12) PP**	**0.097@25 mg/l hardness (12) PP**	**64**	**5** **MCL**	**5** **MCL**	**0.1**	**0.08**
Carbaryl **§§ Sevin** **§ ---**	**63-25-2**	**Toxic**	**---**	**---**	**---**	**700** **HA**	**700** **HA**	**2**	**---**
Carbofuran **§§ ---** **§ Yaltox § Euradan § Furadan § Curaterr § Furacarb § SHA 090601** **§ Niagra 10242 § 2,2-Dimethyl-7-Coumaranyl N-Methylcarbamate § 2,2-Dimethyl-2,3-Dihydro-7-Benzofuranyl N-Methylcarbamate § Carbamic Acid, Methyl-, 2,3-Dihydro-2,2-Dimethyl-7-Benzofuranyl Ester**	**1563662 or 1563-66-2** **NIOSH: FB 9450000** **SAX: FPE000**	**Toxic**	**---**	**---**	**---**	**40** **MCL**	**40** **MCL**	**1**	**1**
Carbon Tetrachloride **§§ Freon 10** **§ R 10 § Univerm § Tetrasol § Fasciolin § Flukoids § Necatorina** **§ Necatorine § Halon 104 § Tetraform § Carbon Tet § Benzinoform** **§ Carbon Chloride § Perchloromethane § Tetrachloromethane** **§ Methane Tetrachloroide § RCRA Waste Number U211**	**56235 or 56-23-5** **NIOSH: FG 4900000** **SAX: CBY000**	**Carcinogen**	**---**	**---**	**18.75**	**2.3** **PP**	**3** **HA**	**N/A**	**0.5**

Appendix E

CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)

Except where indicated, values are listed as micro-grams-per-liter (µg/L). A '---' indicates that a Standard has not been adopted or information is currently unavailable. A '( )' indicates that a detailed note of explanation is provided.

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Carboxin §§ Vitavax § ---	5234-68-4	Toxic	---	---	---	700 HA	700 HA	1	---
Chloramben §§ Vegiben § ---	133-90-4	Toxic	---	---	---	100 HA	100 HA	---	---
Chlordane §§ Termex § Belt § Niran § Dowchlor § Chlortox § Chlordan § Clordano § Chlor Kil § Toxichlor § Octa-Klor § Ortho-Klor § SHA 058201 § Gold Crest C-100 § Chlordane, Technical § RCRA Waste Number U036 § Octachloro-4, 7-Methanohydroindane § Octachlorodihydrodicyclopentadiene § 1,2,4,5,6,7,8,8-Octachloro-3a,4,7,7a-Hexahydro § Octachloro-4,7-Methanotetrahydroindane-4,7-Methylene Indane § 4,7-Methanoindan, 1,2,4,5,6,7,8,8-Octachloro-3a,4,7,7a-tetrahydro- § 1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-Hexahydro-4,7-Methano-Indene § 4,7-Methano-1H-Indene 1,2,4,5,6,7,8,8-Octachloro-2,3,3a,4,7,7a-Hexahydro-	57749 or 57-74-9 NIOSH: PB 9800000 SAX: CDR750	Carcinogen	2.4 PP	0.0043 PP	14,100	0.0080 PP	1 HA	N/A	0.4
Chlorimuron Ethyl §§ Classic § ---	90982-32-4	Toxic	---	---	---	700 HA	700 HA	0.1	---
Chlorine, total residual §§ Cl § Bertholite § Chlorine, molecular § Molecular Chlorine	7782505 or 7782-50-5 NIOSH: FO 2100000 SAX: CDV750	Toxic	19 NPP	11 NPP	---	4,000 MCL	4,000 MCL	--- ---	---
Chlorobenzene §§ Monochlorobenzene § MCB § Chlorobenzol § Chlorbenzene § Phenyl Chloride § Benzene Chloride § Benzene, Chloro- § Monochlorbenzene § RCRA Waste Number U037 § NCI C54886	108907 or 108-90-7 NIOSH: CZ 0175000 SAX: BBM750	Toxic	---	---	10.3	100 MCL	100 MCL	0.5	0.5
Chloroethane §§ Ethyl Chloride § Aethylis § Aethylis Chloridum § Anodynon § Chelen § Chlorethyl § Chloridum § Chloryl § Chloryl Anesthetic § Ether Chloratus § Ether Hydrochloric § Ether Muriatic § Hydrochloric Ether § Kelene § Monochlorethane § Muriatic Ether § Narcotile § NCI C06224	75003 or 75-00-3 NIOSH: KH 7525000 SAX: EHH000	Toxic	---	---	---	---	---	0.52	---
Chloroform (HM) §§ Trichloromethane § TCM § Freon 20 § Trichloroform § R-20 Refrigerant § Methenyl Chloride § Formyl Trichloride § Methyl Trichloride § Methane Trichloride § Methane, Trichloro- § Methenyl Trichloride § RCRA Waste Number U044 § NCI CO2686	67663 or 67-66-3 NIOSH: FS 9100000 SAX: CHJ500	Carcinogen	---	---	3.75	57 PP	70 HA	N/A	0.5
Chlorophenol, 2- §§ Phenol, 2-Chloro § o-Chlorophenol § 2-Chlorophenol § Phenol, o-Chloro- § RCRA Waste Number U048	95578 or 95-57-8 NIOSH: SK 2625000 SAX: CJK250	Toxic	---	---	134	81 PP	81 PP	0.3	10

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Chlorophenyl Phenyl Ether, 4- §§ --- § 4- Chlorophenyl Phenyl Ether	7005723 or 7005-72-3 NIOSH: --- SAX: ---	Toxic with BCF >300	---	---	1,200	---	---	---	---
Chlorsulfuron §§ Glean §§ Telar	64902-72-3	Toxic	---	---	---	1750 HA	1750 HA	---	---
Chlorothalonil §§ Bravo § ---	1897-45-6	Carcinogen	---	---	---	15 HA	15 HA	N/A	---
Chlorpyrifos §§ Dursban § Ethion § Brodan § Eradex § Lorsban § Pyrinex § NA 2783 § Piridane § DowCo 179 § SHA 059101 § Ethion, dry § Chlorothalonil § Chlorpyrifos-Ethyl § O,O-Diethyl O-3,5,6-Trichloro-2-Pyridyl Phosphorothioate § Phosphorothioic Acid, O,O-Diethyl O-(3,5,6-Trichloro-2-Pyridyl) Ester	2921882 or 2921-88-2 NIOSH: TF 6300000 SAX: DYE000	Toxic	0.083 NPP	0.041 NPP	---	20 HA	20 HA	0.25	1
Chromium, all forms §§ Cr § Chrome	7440473 or 7440-47-3 NIOSH: GB 4200000 SAX: CMI750	Toxic	---	---	---	100 MCL	100 MCL	1	1
Chromium, hexavalent §§ Chromium (VI) § ---	18540299 or 18540-29-9 NIOSH: --- SAX: ---	Toxic	16 PP	11 PP	16	---	---	---	5
Chromium, trivalent §§ Chromium (III) § ---	16065831 or 16065-83-1 NIOSH: --- SAX: ---	Toxic	579@25mg/l hardness(12) PP	27.7 @ 25 mg/l hardness (12) PP	16	---	---	1	---
Chrysene (PAH) §§ --- § Benz(a)Phenanthrene § Benzo(a)Phenanthrene § 1,2-Benzphenanthrene § 1,2-Benzophenanthrene § RCRA Waste Number U050 § 1,2,5,6-Dibenzonaphthalene	218019 or 218-01-9 NIOSH: GC0700000 SAX: CML810	Carcinogen	---	---	30	0.038 PP	50 (30) HA	N/A	0.10
cis-1,2-Dichloroethylene §§ --- § 1,2-Dichloroethylene § cis-Dichloroethylene § cis-1,2-Dichloroethene § 1,2,cis-Dichloroethylene § ethylene, 1,2-Dichloro-, (z)-	156592 or 156-59-2 NIOSH: KV 9420000 SAX: DFI200	Toxic	---	---	---	70 MCL	70 MCL	0.002	0.5
cis-1,3-Dichloropropene §§ Telone II § 1,3-Dichloropropene § 1,3-Dichloropropylene § (Z)-1,3-Dichloropropene § cis-1,3-Dichloropropylene § 1-Propene, 1,3-Dichloro-, (Z)-	10061015 or 10061-01-5 NIOSH: UC 8325000 SAX: DGH200	Carcinogen	---	---	1.91	3.4 PP	4 HA	N/A	0.5
Clopyralid §§ Stinger § ---	1702-17-6	Toxic	---	---	---	3,500 I	3,500 I	1	---

Appendix E

CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)									
Except where indicated, values are listed as micro-grams-per-liter (µg/L). A '---' indicates that a Standard has not been adopted or information is currently unavailable. A '( )' indicates that a detailed note of explanation is provided.									
Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Color §§ ---	N/A	Harmful	---	---	---	(18)	(18)	---	5 UNITS
Copper §§ Cu § Allbri Natural Copper § ANAC 110 § Arwood Copper § Bronze Powder § CDA 101 § CDA 102 § CDA 110 § CDA 122 § C.I. 77400 § C.I. Pigment Metal 2 § Copper Bronze § 1721 Gold § Gold Bronze § Kafar Copper § M1 (Copper) § M2 (Copper) § OFHC Cu § Raney Copper	7440508 or 7440-50-8 NIOSH: GL 5325000 SAX: CNI000	Toxic	3.79@25mg/l hardness(12) PP	2.85@25 mg/l hardness (12) PP	36	1,300 PP	1,300 PP	0.5	1
Cyanazine §§ Bladex § ---	21725-46-2	Toxic	---	---	---	1.0 HA	1.0 HA	N/A	---
Cyanide, total §§ --- § Cyanide § Isocyanide § RCRA Waste Number P030 § Cyanides, includes soluble salts and complexes	57125 or 57-12-5 NIOSH: GS 7175000 SAX: COI500	Toxic	22 PP	5.2 PP	1	140 PP	200 MCL	---	5
Dacthal §§ DCPA § ---	1861-32-1	Toxic	---	---	---	70 HA	70 HA	0.025	---
Dalapon §§ Revenge § Dalpon § Unipon § Dowpon § Radapon § Basinex § Ded-Weed § Dalacide § Gramevin § Crisapon § Dalpon Sodium § 2,2-Dichloropropionic Acid § SHA 28902, for sodium salt § SHA 28901, for dalapon only Propionic Acid, 2,2-Dichloro- § Sodium 2,2-Dichloropropionate § a-Dichloropropionic Acid § a,a-Dichloropropionic Acid § alpha-alpha-Dichloropropionic Acid	75990 or 75-99-0 NIOSH: UF 0690000 SAX: DGI400	Toxic	---	---	---	200 MCL	200 MCL	1.3	3
Dalapon, sodium salt §§ Dalpon § Unipon § Dowpon § Radapon § Revenge § Basinex § Ded-Weed § Dalacide § Gramevin § Crisapon § Dalpon Sodium § Sodium Dalapon § 2,2-Dichloropropionic Acid § SHA 28902, for sodium salt § SHA 28901, for dalapon only § Propionic Acid, 2,2-Dichloro- § Sodium 2,2-Dichloropropionate § alpha-alpha-Dichloropropionic Acid	127208 or 127-20-8 NIOSH: UF 1225000 SAX: DGI600	Toxic	---	---	---	200 MCL	200 MCL	1.3	3
delta-Hexachlorocyclohexane §§ --- § -BHC § delta-BHC § HCH-delta § delta-HCH § -BHC § -Lindane § delta-Lindane § Hexachlorocyclohexane § delta-Benzenehexachloride § Hexachlorocyclohexane-delta § Hexachlorocyclohexane, delta- § Cyclohexane, delta-1,2,3,4,5,6-Hexachloro- § delta-1,2,3,4,5,6-Hexachlorocyclohexane § 1-alpha,2-alpha,3-alpha, 4-beta,5-alpha,6-beta-Hexachlorocyclohexane § Cyclohexane, delta-1,2,3,4,5,6-Hexachloro-, (1-alpha, 2-alpha, 3-alpha, 4-beta, 5-alpha, 6-beta)-	319868 or 319-86-8 NIOSH: GV 4550000 SAX: BFW500	Carcinogen	---	---	130	--- PP	--- PP	N/A	0.1

Appendix E

CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Demeton §§ Systox § Bay 10756 § Bayer 8169 § Demox § Diethoxy Thiophosphoric Acid Ester of 2-Ethylmercaptoethanol § O,O-Diethyl 2-Ethylmercaptoethyl Thiophosphate § O,O-Diethyl O(and S)-2-(Ethyl-Thio)Ethyl Phosphorothioate Mixture § E 1059 § ENT 17,295 § Mercaptophos § Systemox § Systox § ULV § Demeton-O + Demeton-S	8065483 or 8065-48-3 NIOSH: TF 3150000 SAX: DAO600	Toxic	---	0.1 NPP	---	1.4 HA	1.4 HA	0.25	---
Di(2-Ethylhexyl)Phthalate (PAE) §§ Bis(2-Ethylhexyl)Phthalate § BEHP § DEHP § Octoil § Fleximel § Flexol DOP § Kodaflex DOP § Ethylhexyl Phthalate § Diethylhexyl Phthalate § 2-Ethylhexyl Phthalate § Di(Ethylhexyl)phthalate § Di(2-Ethylhexyl)phthalate § Bis (2-Ethylhexyl) Phthalate § Bis(2-Ethylhexyl)-1,2-Benzene-Dicarboxylate § 1,2-Benzenedicarboxylic Acid, Bis(2-Ethylhexyl)Ester	117817 or 117-81-7 NIOSH: TI 0350000 SAX: BJS000	Carcinogen	---	---	130	6 MCL	6 MCL	---	6
Di(2-Ethylhexyl)Adipate §§ Hexanedioic Acid § DEHA § BEHA § Bisoflex DOA § Effemoll DOA § Ergoplast AdDO § Flexol A 26 § PX-238 § Reomol DOA § Vestinol OA § Wickenol 158 § Kodaflex DOA § Monoplex DOA § NCI C54386 § Octyl Adipate § Dioctyl Adipate § Di-2-Ethylhexyl Adipate § Di (2-Ethylhexyl) Adipate § Bis(2-Ethylhexyl) Adipate § Adipic Acid, Bis(2-Ethylhexyl) Ester § Hexanedioic Acid, Bis(2-Ethylhexyl) Ester	103231 or 103-23-1 NIOSH: AU 9700000 SAX: AEO000	Carcinogen	---	---	---	300 HA	300 HA	N/A	6
Diazinon §§ ---	333-41-5	Toxic	---	---	---	0.6 HA	0.6 HA	0.25	---
Dibenz[a,h]Anthracene (PAH) §§ --- § DBA § DB(a,h)A § Dibenz(a,h)Anthracene § RCRA Waste Number U063 § Dibenzo(a,h)anthracene § 1,2:5,6-Benzanthracene § Dibenzo (a,h) Anthracene § 1,2,5,6-Dibenzanthracene § 1,2:5,6-Dibenz(a)Anthracene	53703 or 53-70-3 NIOSH: HN 2625000 SAX: DCT400	Carcinogen	---	---	30	0.038 PP	0.05 (30) HA	N/A	0.10
Dibromochloromethane (THM) §§ Monochlorodibromomethane § CDBM § NCI C55254 § Chlorodibromomethane § Methane, Dibromochloro-	124481 or 124-48-1 NIOSH: PA 6360000 SAX: CFK500	Carcinogen	---	---	3.75	4.0 PP	4.0 PP	N/A	0.5
Dibromoethane, 1,2- §§ Ethylene Dibromide § DBE § EDB § Nephis § Kopfume § Celmide § E-D-Bee § Soilfume § Bromofume § Dowfume 40 § SHA 042002 § Pestmaster § Soilbrom-40 § Dibromoethane § Ethylene Bromide § Glycol Dibromide § 1,2-Dibromoethane § 1,2-Ethylene Dibromide § RCRA Waste Number U067	106934 or 106-93-4 NIOSH: KH 9275000 SAX: EIY500	Carcinogen	---	---	---	0.004 HA	0.004 HA	N/A	0.5

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Dibutyl Phthalate §§ --- § DPB § Celluflex DPB § Elaol § Hexaplas M/B § Palatinol C§ Polycizer DBP § PX 104 § Staflex DBP § Witcizer § SHA 028001 § Butylphthalate § N-Butylphthalate § Di-n-Butylphthalate § Di-n-Butylphthalate § Dibutyl-o-Phthalate § Di-n-Butyl Phthalate § RCRA Waste Number U069 § Phthalic Acid Dibutyl Ester § Dibutyl 1,2-Benzene Dicarboxylate § 1,2-Benzenedicarboxylic Acid Dibutyl Ester § 1,2-Benzenedicarboxylic Acid, Dibutyl Ester § Benzene-o-Dicarboxylic Acid Di-n-Butyl Ester	84742 or 84-74-2 NIOSH: TI 0875000 SAX: DEH200	Toxic	---	---	89	2,000 PP	2,000 PP	0.25	10
Dicamba §§ Banvel § ---	1918-00-9	Toxic	---	---	---	200 HA	200 HA	0.28	---
Dichlorobenzene, 1,2- §§ DCB § ODB § ODCB § Dizene § Cloroben § Chloroben § Chloroden § Termitkil § Dilatin DB § Dowtherm E § Dilantin DB § o-Dichlorobenzene § Orthodichlorobenzene § ortho-Dichlorobenzene § Special Termite Fluid § Benzene, 1,2-Dichloro- § RCRA Waste Number U070	95501 or 95-50-1 NIOSH: CZ 4500000 SAX: DEP600	Toxic	---	---	55.6	420 PP	600 MCL	0.02	10
Dichlorobenzene, 1,3- §§ Benzene, 1,3-Dichloro § M-Dichlorobenzene § m-Dichlorobenzene § meta-Dichlorobenzene § 1,3-Dichlorobenzene-	541731 or 541-73-1 NIOSH: CZ 4499000 SAX: DEP699	Toxic	---	---	55.6	320 PP	600 HA	0.006	10
Dichlorobenzene, 1,4- §§ Benzene, 1,4-Dichloro- § 1,4- Dichlorobenzene § PDB § PDCB § NCI C54955 § Evola § Paradi § Paradow§ Persia-Perazol § Paracide § Parazene § Paramoth § Santochlor § Paranuggets § di-Chloricide § Para Chrystals § p-Dichlorobenzene § Caswell Number 632 § Paradichlorobenzene § para-Dichlorobenzene- § RCRA Waste Number U070 § RCRA Waste Number U071 § RCRA Waste Number U072 § p-Chlorophenyl Chloride § EPA Pesticide Chemical Code 061501	106467 or 106-46-7 NIOSH: CZ 4550000 SAX: DEP800	Carcinogen	---	---	55.6	75 MCL	75 MCL	N/A	10
Dichlorobenzidine, 3,3'- §§ DCB § C.I. 23060 § Curithane C126 § Dichlorobenzidine § o,o'-Dichlorobenzidine § Dichlorobenzidine Base § Benzidine, 3,3'-Dichloro- § RCRA Waste Number U073 § 3,3'-Dichloro-4,4'-Diaminodiphenyl § 3,3'-Dichloro-(1,1'-Biphenyl)-4,4'-Diamine § 1,1'-Biphenyl-4,4'-Diamine, 3,3'-Dichloro-	91941 or 91-94-1 NIOSH: DD 0524000 SAX: DEQ400	Carcinogen	---	---	312	0.21 PP	0.21 PP	N/A	20
Dichlorodifluoromethane (HM) §§ Freon 12 § F 12 § R 12 § FC 12 § Halon § CFC-12 § Arcton 6 § Electro-CF 12 § Eskimon 12 § Frigen 12 § Gentron 12 § Isceon 122 § Kaiser Chemicals 12 § Ledon 12 § Ucon 12 § Propellant 12 § Refrigerant 12 § Fluorcarbon-12 § RCRA Waste Number U075 § Difluorodichloromethane § Methane, dichlorodifluoro-	75718 or 75-71-8 NIOSH: PA 8200000 SAX: DFA600	Toxic	---	---	3.75	1,000 HA	1,000 HA	0.05	0.5

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Dichloroethane, 1,2- §§ Ethylene Chloride § EDC § Brocide § 1,2-DCE § NCI C00511 § Dutch Oil § Dutch Liquid § Dichloremulsion § Di-Chlor-Mulsion § 1,2-Bichlorethane § 1,2-Dichlorethane § Ethane Dichloride § 1,2-Bichloroethane § Ethylene Dichloride § 1,2-Dichloroethane § Ethane, 1,2-Dichloro- § RCRA Waste Number U077§ 1,2-Ethylene Dichloride § alpha,beta-Dichloroethane	107062 or 107-06-2 NIOSH: KI 0525000 SAX: DFF900	Carcinogen	---	---	1.2	3.8 PP	4 HA	N/A	0.5
Dichloroethene, 1,1- §§ Vinylidene Chloride § VDC § 1,1-DCE § Sconatex § NCI C54262 § 1,1-Dichloroethene § Vinylidene Chloride § 1,1-Dichloroethylene § Vinylidene Dichloride § Ethene, 1,1-Dichloro- § Vinylidene Chloride II § RCRA Waste Number U078 § Dichloroethylene, 1,1- § Ethylene, 1,1-Dichloro-	75354 or 75-35-4 NIOSH: KV 9275000 SAX: DFI000	Carcinogen	---	---	5.6	0.57 PP	0.6 HA	N/A	0.5
Dichloromethane (HM) §§ Methylene Chloride § R 30 § DCM § Freon 30 § Aerothene MM § NCI C50102 § Solmethine § Methylene Chloride § Methane Dichloride § Methane, Dichloro- § 1,1-Dichloromethane § Methylene Bichloride § Methylene Dichloride	75092 or 75-09-2 NIOSH: PA 8050000 SAX: MDR000	Carcinogen	---	---	0.9	5 MCL	5 MCL	N/A	0.5
Dichlorophenol, 2,4- §§ Phenol, 2,4-Dichloro § DCP § 2,4-DCP § NCI C55345 § 2,4-Dichlorophenol § RCRA Waste Number U081	120832 or 120-83-2 NIOSH: SK 8575000 SAX: DFX800	Toxic	---	---	40.7	77 PP	77 PP	10	10
Dichlorophenoxyacetic Acid, 2,4- §§ Dichlorophenoxyacetic Acid § 2,4-D § Salvo § Phenox § Farmco § Amidox § Miracle § Agrotect § Weedtrol § Herbidal § Ded-Weed § Lawn-Keep § Fernimine § Crop Rider § Aqua-Kleen § 2,4-Dichlorophenoxy Acetic Acid § Dichlorophenoxyacetic Acid, 2,4- § Acetic Acid, (2,4-Dichlorophenoxy)- § 2,4-Dichlorophenoxyacetic Acid, salts and esters	94757 or 94-75-7 NIOSH: AG 6825000 SAX: DFY600	Toxic	---	---	---	70 MCL	70 MCL	0.02 N/A	1
Dichloropropane, 1,2- §§ Propylene Chloride § 1,2-Dichloropropane § NCI C55141 § Propylene Dichloride § Caswell Number 324 § Propane, 1,2-Dichloro- § a,ß-Propylene Dichloride § alpha,beta-Dichloropropane § RCRA Waste Number U083 § EPA Pesticide Chemical Code 029002	78875 or 78-87-5 NIOSH: TX 9625000 SAX: DGF600	Carcinogen	---	---	4.11	5.0 PP	5 MCL		0.5
Dichloropropene, 1,3- §§ Telone II § Telone § NCI C03985 § Vidden D § Dichloropropene § a-Chloroallyl Chloride § g-Chloroallyl Chloride § 1,3-Dichloropropene § 1,3-Dichloropropylene § 1,3-Dichloro-2-Propene § Propene, 1,3-Dichloro- § Telone II Soil Fumigant § 3-Chloropropenyl Chloride § alpha,gamma-Dichloropropylene	542756 or 542-75-6 NIOSH: UC 8310000 SAX: CEF750	Carcinogen	---	---	1.91	3.4 PP	4 HA	N/A	0.5

Appendix E

CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)

Except where indicated, values are listed as micro-grams-per-liter (µg/L). A '---' indicates that a Standard has not been adopted or information is currently unavailable. A '( )' indicates that a detailed note of explanation is provided.

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Dieldrin §§ --- § Alvit § Quintox § Octalox § Illoxol § Dieldrex § NCI C00124 § Dieldrite § SHA 045001 § RCRA Waste Number P037 § 1,4:5,8-Dimethanonaphthalene § Hexachloroepoxyoctahydro-endo,exo-Dimethanonaphthalene § 3,4,5,6,9,9-Hexachloro-1a,2,2a,3,6,6a,7,7a-Octahydro-2,7:3,6-Dimethanonaphth(2,3-b)Oxirene § 2,7:3,6-Dimethanonaphth(2,3-b)Oxirene, 3,4,5,6,9,9-Hexachloro-1a,2,2a,3,6,6a,7,7a-Octahydro- § 1,2,3,4,10,10-Hexachloro-6,7-Epoxy-1,4,4a,5,6,7,8,8a-Octahydro-Endo, Exo-1,4:5,8-Dimethanonaphthalene	60571 or 60-57-1 NIOSH: IO 1750000 SAX: DHB400	Carcinogen	0.24 PP	0.056 PP	4,670	0.00052 PP	0.02 HA	N/A	0.02
Diethyl Phthalate §§ --- § Anozol § Neantine § Solvanol § NCI C60048 § Placidole E § Ethyl Phthalate § Diethylphthalate § Diethyl-o-Phthalate § RCRA WAste Number U088 § 1,2-Benzenedicarboxylic Acid, Diethyl Ester	84662 or 84-66-2 NIOSH: TI 1050000 SAX: DJX000	Toxic	--- 	--- 	73	17,000 PP	17,000 PP	0.25	10
Dimethoate §§ ---	60-51-5	Toxic	--- 	--- 	---	7 HA	7 HA	---	---
Dimethrin §§ ---	70-38-2	Toxic	--- 	--- 	---	2,000 HA	2,000 HA	---	---
Dimethyl Phthalate §§ --- § DMP § NTM § ENT 262 § Mipax § Avolin § Fermine § Solvanom § Solvarone § Palatinol M § Methyl Phthalate § Dimethylphthalate § Phthalic Acid, Dimethyl Ester § Dimethyl Benzene-o-Dicarboxylate § Dimethyl 1,2-Benzenedicarboxylate § 1,2-Benzenedicarboxylic Acid, Dimethyl Ester	131113 or 131-11-3 NIOSH: TI 1575000 SAX: DTR200	Toxic	--- 	--- 	36	270,000 PP	270,000 PP	0.04	10
Dimethylphenol, 2,4- §§ Phenol, 2,4-Dimethyl- § m-Xylenol § 2,4-Xylenol § 4,6-Dimethylphenol § Caswell Number 907A § 2,4-Dimethyl Phenol § RCRA Waste Number U101 § 1-Hydroxy-2,4-Dimethylbenzene § 4-Hydroxy-1,3-Dimethylbenzene § EPA Pesticide Chemical Code 086804	105679 or 105-67-9 NIOSH: ZE 5600000 SAX: XKJ500	Toxic	--- 	--- 	93.8	380 PP	380 PP	10	10
Dinitro-o-Cresol, 4,6- §§ Dinitrocresol § Detal § Sinox § DNOC § Arborol § Capsine § Dinitrol § Trifocide § Antinonin § Winterwash § Dinitro-o-Cresol § Caswell Number 390 § 2,4-Dinitro-o-Cresol § 4,6-Dinitro-o-Cresol § o-Cresol, 4,6-dinitro- § RCRA Waste Number P047 § 2-Methyl-4,6-Dinitrophenol § 4,6-Dinitro-2-Methylphenol § 2,4-Dinitro-6-Methylphenol § 3,5-Dinitro-2-Hydroxytoluene § Phenol, 2-Methyl-4,6-Dinitro-	534521 or 534-52-1 NIOSH: GO 9625000 SAX: DUT400	Toxic	--- 	--- 	5.5	13 PP	13 PP	---	50
Dinitrophenol, 2,4- §§ Phenol, 2,4-Dinitro § Nitro § Kleenup § Aldifen § 2,4-Dinitrophenol § 2,4-DNP § Chemox PE § Maroxol-50 § Solfo Black B § alpha-Dinitrophenol § Dinitrophenol, 2,4- § Tertrosulphur Black PB § RCRA Waste Number P048 § 1-Hydroxy-2,4-Dinitrobenzene	51285 or 51-28-5 NIOSH: SL 2800000 SAX: DUZ000	Toxic	--- 	--- 	1.5	69 PP	69 PP	13	50

Appendix E

CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Dinitrotoluene, 2,4- §§ Toluene, 2,4-Dinitro § 2,4-DNT § NCI C01865 § 2,4-Dinitrotoluol - § RCRA Waste Number U105 § Benzene, 1-Methyl-2,4-Dinitro-	121142 or 121-14-2 NIOSH: XT 1575000 SAX: DVH000	Carcinogen	---	---	3.8	0.5 HA	0.5 HA	N/A	10
Dinitotoluene, 2,6- §§ Toluene-dinitro § 2,4-DNT § Methyl-1,3-Dinitrobenzene § RCRA Waste Number U106	606202 or 606-20-2 NIOSH: XT 1925000 SAX: DVH400	Carcinogen	---	---	---	0.5 HA	0.5 HA	0.01	---
Dinoseb §§ --- § DNBP § DBNF § Aretit § Basanite § Caldon § Sparic § Kiloseb § Spurge § Premerge § Dinitro § Hel-Fire § SHA 037505 § Dow General § Sinox General § RCRA Waste Number P020 § Dow General Weed Killer § Vertac General Weed Killer § 2-sec-Butyl-4,6-Dinitrophenol § Dinitro-Ortho-Sec-Butyl Phenol § 2-(1-Methylpropyl)-4,6-Dinitrophenol § 4,6-Dinitro-2-(1-Methyl-n-Propyl)Phenol§ Phenol, 2-(1-Methylpropyl)-4,6-Dinitro-	88857 or 88-85-7 NIOSH: SJ 9800000 SAX: BRE500	Toxic	---	---	---	7 MCL	7 MCL	0.19	1.5
Dioxin --Chlorinated Dibenzo-p-dioxins and Chlorinated Dibenzofurans Dioxins and congeners expressed as equivalent concentration of 2,3,7,8, Tetrochlorodibenzo-p-dioxin (TCDD) based on the method described in Table 5, page 787, of van den Berg, M: Bosveld, ATC: et al. (1998) Toxicity equivalency factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. Environ Health Perspect 106(12):775-792.	Various	Carcinogen	---	---	5,000	0.00000005 (10) PP	0.000002 (10) HA	N/A	footnote 10
Diphenamid §§ ---	957-51-7	Carcinogen	---	---	---	200 HA	200 HA	N/A	---
Diphenylhydrazine, 1,2- §§ Hydrazine, 1,2-Diphenyl- § Hydrazobenzene § NCI C01854 § N,N'-Bianiline § Benzene, Hydrazodi- § RCRA Waste Number U109 § (sym)-Diphenylhydrazine § 1,2-Diphenylhydrazine	122667 or 122-66-7 NIOSH: MW 2625000 SAX: HHG000	Carcinogen	---	---	24.9	0.36 PP	0.36 PP	N/A	10
Diquat §§ --- § Actor § Feglox § Deiquat § Reglone § Aquacide § Dextrone § Paraquat § Preeglove § SHA 032201 § Weedtrine-D § Diquat Dibromide § Ethylene Dipyridylium Dibromide § 1,1-Ethylene 2,2-Dipyridylium Dibromide § 5,6-Dihydro-Dipyrido(1,2a,1c)Pyrazinium Dibromide § 9,10-Dihydro-8a,10a-Diazoniaphenanthrene(1,1'-Ethylene-2,'-Bipyridylium)Dibromide	85007 or 85-00-7 NIOSH: JM 5690000 SAX: DWX800	Toxic	---	---	---	20 MCL	20 MCL	0.44	10
Disulfoton §§ --- § Disyston	298-04-4	Toxic	---	---	---	0.3 HA	0.3 HA	0.07	---
Diuron §§ --- § Karmex	330-54-1	Toxic	---	---	---	10 HA	10 HA	1	---

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Endosulfan §§ --- § NCI C00566 § Malixv § Ensure § Beosit § Endocel § Thiodan § Cyclodan § Crisulfan § Benzoepin § Thiosulfan § SHA 079401 § Chlorthiepin § RCRA Waste Number P050 § Endosulfan (mixed isomers) § Hexachlorohexahydromethano 2,4,3-Benzodioxathiepin-3-Oxide § 1,4,5,6,7,7-Hexachloro-5-Norbornene-2,3-Dimethanol Cyclic Sulfite § 5-Norbornene-2, 3-Dimethanol, 1,4,5,6,7,7-Hexachloro Cyclic Sulfite § 6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-Hexahydro-6,9-Methano-2,4,3-Benzodioxathiepin-3-Oxide § 6,9-Methano-2,4,3-Benzodioxathiepin, 6,7,8,9,10,10-Hexachloro-1,5,5a,6,9,9a-Hexahydro-, 3-Oxide	115297 or 115-29-7 NIOSH: RB 9275000 SAX: BCJ250	Toxic	0.11 PP	0.056 PP	270	110 PP	110 PP	0.014	see Cis and trans isomers
Endosulfan, I §§ --- § Thiodan I § Endosulfan-I § Alpha-Endosulfan § alpha-Endosulfan	959988 or 959-98-8 NIOSH: --- SAX: ---	Toxic	0.22 PP	0.056 PP	270	62 PP	62 PP	---	0.015
Endosulfan, II §§ --- § Thiodan II § Endosulfan-II § Beta-Endosulfan § beta-Endosulfan	33213659 or 33213-65-9 NIOSH: --- SAX: ---	Toxic	0.22 PP	0.056 PP	270	62 PP	62 PP	0.004	0.024
Endosulfan Sulfate §§ --- § 6,9-Methano-2,3,4-Benzodioxathiepin, 6,7	1031078 or 1031-07-8 NIOSH: --- SAX: ---	Toxic	0.22 PP	0.056 PP	270	62 PP	62 PP	0.05	0.05
Endothall §§ --- § Hydout § Hydrothal-47 § Aquathol § SHA 038901 § Accelerate § Tri-Endothal § Endothal Hydout § RCRA Waste Number P088 § 3,6-Endooxohexahydrophthalic Acid § Phthalic Acid, Hexahydro-3,6-endo-Oxy- § 7-Oxabicyclo(2,2,1)Heptane-2,3-Dicarboxylic Acid § 1,2-Cyclohexanedicarboxylic Acid, 3,6-endo-Epoxy-	145733 or 145-73-3 NIOSH: RN 7875000 SAX: EAR000	Toxic	---	---	---	100 MCL	100 MCL	1	8
Endrin §§ --- § NCI C00157 § Endrex § Mendrin § Nendrin § Hexadrin § SHA 041601 § Compound 269 § RCRA Waste Number P051 § 1,2,3,4,10,10-Hexachloro-6,7-Epoxy-1,4,4(a)5,6,7,8,8a-Octahydro-endo § 3,4,5,6,9,9-Hexachloro-1a,2,2a,3,6,6a,7,7a-Octahydro-2,7:3,6-Dimethanonaphth[2,3-b]oxirene § 1,4:5,8-Dimethanonaphthalene, 1,2,3,4,10,10-Hexachloro 6,7-Epoxy-1,4,4a,5,6,7,8,8a-Octahydro-Endo,Endo-	72208 or 72-20-8 NIOSH: IO 1575000 SAX: EAT500	Toxic with BCF >300	0.086 PP	0.0036 PP	3,970	0.059 PP	2 MCL	N/A	0.3
Endrin Aldehyde §§ ---	7421934 or 7421-93-4 NIOSH: --- SAX: ---	Toxic with BCF >300	---	---	3,970	0.29 PP	0.29 PP	N/A	0.025
Epichlorohydrin §§ --- § ECH § Epoxy Propane § -Epichlorohydrin § Chloromethyloxirane § RCRA Waste Number U041 § y-Chloropropyleneoxide § 2-Chloropropylene Oxide § Glycerol Epichlorhydrin § 2,3-Epoxypropyl Chloride § 1-Chlor-2,3-Epoxypropane§ 3-Chlor-1,2-Epoxypropane	106898 or 106-89-8 NIOSH: TX 4900000 SAX: CGN750	Carcinogen	---	---	---	30 HA	30 HA	N/A	---
Escherichia coli **(Bacteria)**	N/A	Harmful	---	---	---	(13)	Less than 1 (6)	1 per 100ml	1 per 100ml

Appendix E

CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Ethylbenzene §§ --- § EB § NCI C56393 § Ethylbenzol § Phenylethane § Ethyl Benzene § Benzene, Ethyl	100414 or 100-41-4 NIOSH: DA 0700000 SAX: EGP500	Toxic	---	---	37.5	530 PP	700 MCL	0.002	0.5
Fenamiphos §§ --- § Nemacur	22224-92-6	Toxic	---	---	---	2 HA	2 HA	N/A	---
Fluometuron §§ --- § Flo-Met	2164-17-2	Carcinogen	---	---	---	90 HA	90 HA	N/A	---
Fluoranthene §§ --- § Idryl § Benzo(jk)Fluorene § Benzo(j,k)Fluorene § 1,2-Benzacenaphthene § RCRA Waste Number U120 § 1,2-(1,8-Naphthylene)Benzene § Benzene, 1,2-(1,8-Naphthalenediyl)-	206440 or 206-44-0 NIOSH: LL 4025000 SAX: FDF000	Toxic with BCF >300	---	---	1,150	130 PP	130 PP	N/A	10
Fluorene (PAH) §§ --- § 9H-Fluorene § Diphenylenemethane § o-Biphenylenemethane § 2,2'-Methylenebiphenyl	86737 or 86-73-7 NIOSH: --- SAX: ---	Toxic	---	---	30	1,100 PP	1,100 PP	0.25	0.25
Fluoride §§ Flourine § Fluoride § Fluoride(1-) § Perfluoride § Fluoride Ion § Fluorine, Ion § Soluable§ Fluoride § RCRA Waste Number P056 § Hydrofluoric Acid, Ion(1-)	16984488 or 16984-48-8 NIOSH: LM 6290000 SAX: FEX875	Toxic	---	---	---	4,000 MCL	4,000 MCL	5	100
Fonofos §§ --- § Dyfonate	944-22-9	Toxic	---	---	---	10 HA	10 HA	---	---
Gamma Emitters (11) §§ ---	Multiple	Carcinogen / Radioactive	---	---	---	0.4 mrem /yr MCL	0.4 mrem /yr MCL	N/A	---
gamma-Chlordane §§ --- § Chlordane, beta-Isomer	5103742 or 5103-74-2 NIOSH: --- SAX: ---	Carcinogen	---	---	14,100	0.0080 PP	1 HA	N/A	0.4
gamma-hexachlorocyclohexane §§ Lindane § BHC § -BHC § Gamene § Lintox § Lentox § Hexcide § Aparsin § Agrocide § Afcide § BHC-gamma § gamma-BHC § HCH-gamma § gamma-HCH § Hexachlorocyclohexane § gamma-Hexachlorobenzene § gamma-Benzenehexachloride § gamma-Benzene Hexachloride § Hexachlorocyclohexane-gamma § Hexachlorocyclohexane (gamma) § Benzene Hexachloride-gamma-isomer § gamma-1,2,3,4,5,6-Hexachlorocyclohexane § Cyclohexane, 1,2,3,4,5,6-Hexachloro-, gamma-isomer § 1,2,3,4,5,6-Hexachlorocyclohexane, gamma-isomer § 1-alpha,2-alpha,3-beta,4-alpha, 5-alpha,6-beta-Hexachlorocyclohexane § Cyclohexane, 1,2,3,4,5,6-Hexachloro-, (1-alpha, 2-alpha, 3-beta, 4-alpha, 5-alpha, 6-beta)	58899 or 58-89-9 NIOSH: GV 4900000 SAX: BBQ500	Carcinogen	0.95 PP	---	130	0.2 HA	0.2 HA	N/A	0.1
Gases, dissolved, total-pressure (20) §§ ---	Multiple	Toxic	110% of saturation	---	---	---	---	---	---

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			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Glyphosate §§ --- § Jury § Honcho § Rattler § Weedoff § Roundup § Glifonox § n-(Phosphonomethyl)-Glycine § Glycine, n-(Phosphonomrthyl)- § Glyphosate plus inert ingrediants § MON 0573	1071836 or 1071-83-6 NIOSH: MC 1075000 SAX: PHA500	Toxic	---	---	---	700 MCL	700 MCL	6	50
Glyphosate Isopropylamine Salt §§ --- § SHA 103601	38641940 or 38641-94-0 NIOSH: --- SAX: ---	Toxic	---	---	---	700 HA	700 HA	6	50
Guthion §§ --- § DBD § NCI C00066 § Carfene § Gothnion § Azinphos § Crysthyon § Gusathion § Bay 17147 § Methylazinphos § Methyl Guthion § Methyl-Guthion § Azinphos-Methyl § Azinphos Methyl § Caswell Number 374 § EPA Pesticide Chemical Code 058001 § o,o-Dimethylphosphorodithioate S-Ester § 3-Mercaptomethyl)-1,2,3-Benzotriazin-4(3H)-One § Benzotriazinedithiophosphoric Acid Dimethoxy Ester § 3-Dimethoxyphosphinothiomethyl-1,2,3-Benzotriazin-4(3H)-One § Phosphorodithioic Acid, O,O-Dimethyl Ester, S-Ester with 3-(Mercaptomethyl)-1,2,3-Benzotriazin-4(3H)-One	86500 or 86-50-0 NIOSH: TE 1925000 SAX: ASH500	Toxic	---	0.01 NPP	---	---	---	---	---
Heptachlor §§ --- § NCI C00180 § Drinox § Heptamul § Agroceris § Heptagran § SHA 04481 § Rhodiachlor § Velsicol-104 § RCRA Waste Number P059 § 3,4,5,6,7,8,8a-heptachlorodicyclopentadiene § Dicyclopentadiene, 3,4,5,6,7,8,8a-Heptachloro- § 1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-Tetrahydro-4,7-Methanol-1H-Indene § 4,7-Methano-1H-Indene, 1,4,5,6,7,8,8-Heptachloro-3a,4,7,7a-Tetrahydro- § 1(3a),4,5,6,7,8,8-Heptachloro-3a(1),4,7,7a-Tetrahydro-4,7-Methanoindene	76448 or 76-44-8 NIOSH: PC 0700000 SAX: HAR000	Carcinogen	0.52 PP	0.0038 PP	11,200	0.00079 PP	0.08 HA	N/A	0.2
Heptachlor Epoxide §§ --- § HCE § Velsicol 53-CS-17 § Epoxyheptachlor § 1,4,5,6,7,8,8-Heptachloro-2,3-Epoxy-2,3,3a,4,7,7a-Hexahydro-4,7-Methanoindene § 2,5-Methano-2H-Indeno[1,2b]Oxirene, 2,3,4,5,6,7,7-Heptachloro-1a,1b,5,5a,6,6a-Hexahydro- (alpha, beta, and gamma isomers)	1024573 or 1024-57-3 NIOSH: PB 9450000 SAX: EBW500	Carcinogen	0.26 PP	0.0038 PP	11,200	0.00039 PP	0.04 HA	N/A	0.1
Hexachlorobenzene §§ --- § HCB § Amatin § Smut-Go § Sanocide § Anticarie § Bunt-Cure § Bunt-No-More § Perchlorobenzene § Phenyl Perchloryl § No Bunt Liquid § Julin's Carbon Chloride § Co-op Hexa § Hexa C.B. § Benzene, Hexachloro-	118741 or 118-74-1 NIOSH: DA 2975000 SAX: HCC500	Carcinogen	---	---	8,690	0.0028 PP	0.2 HA	N/A	0.2
Hexachlorobutadiene §§ --- § HCBD § Dolan-Pur § Perchlorobutadiene § RCRA Waste Number U128 § 1,3-Hexachlorobutadiene § 1,3-Butadiene, Hexachloro- § 1,1,2,3,4,4-Hexachloro-1,3-Butadiene § 1,3-Butadiene, 1,1,2,3,4,4-Hexachloro-	87683 or 87-68-3 NIOSH: EJ 0700000 SAX: PCF000	Carcinogen	---	---	2.78	4.4 PP	5 HA	N/A	10

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			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Hexachlorocyclohexane §§ --- § BHC § DBH § HCH § HCCH § HEXA § Hexylan § Hexachlor § Gammexane § Hexachloran § Compound 666 § Benzenehexachloride § Benzene Hexachloride	608731 or 608-73-1 NIOSH: GV 3150000 SAX: BBP750	Carcinogen	---	---	130	0.039 PP	0.039 PP	N/A	0.1
Hexachlorocyclopentadiene §§ --- § HEX § HCP § PCL § C-56 § HCCPD § NCI C55607 § Hexachloropentadiene § RCRA Waste Number U130 § Perchlorocyclopentadiene § 1,3-Cyclopentadiene, 1,2,3,4,5,5-Hexachloro-	77474 or 77-47-4 NIOSH: GY 1225000 SAX: HCE500	Toxic	---	---	4.34	40 PP	50 MCL	1	5
Hexachloroethane §§ --- § Avlotane § Distokal § Distopan § Distopin § Egitol § Falkitol § Fasciolin § NCI C04604 § Phenohep § Mottenhexe § Perchloroethane § Hexachloroethylene § Ethane, Hexachloro- § Carbon Hexachloride § Ethane Hexachloride § Ethylene Hexachloride § RCRA Waste Number U131 § 1,1,1,2,2,2-Hexachloroethane	67721 or 67-72-1 NIOSH: KI 4025000 SAX: HCI000	Carcinogen	---	---	86.9	14 PP	30 HA	N/A	10
Hexazinone §§ ---	51235-04-2	Toxic	---	---	---	400 HA	400 HA	1	---
Hydrogen Sulfide §§ --- § Stink Damp § Sulfur Hydride § Hydrogen Sulphide § Dihydrogen Sulfide § Hydrosulfuric Acid § Sulfurated Hydrogen § RCRA Waste Number U135 § Dihydrogen Monosulfide § Hydrogen Sulfuric Acid	7783064 or 7783-06-4 NIOSH: MX 1225000 SAX: HIC500	Toxic	---	2 NPP	---	---	---	NA	---
Imazamethabenz-methyl §§ Assert § ---	81405-85-8	Toxic	---	---	---	400 I	400 I	N/A	---
Imazapyr §§ Arsenal § ---	81334-34-1	Toxic	---	---	---	21,000 I	21,000 I	N/A	---
Indeno(l,2,3-cd)pyrene (PAH) §§ --- § o-Phenylenepyrene § 2,3-Phenylenepyrene § 2,3-o-Phenylenepyrene § RCRA Waste Number U137 § Indeno (l,2,3-cd) Pyrene § 1,10-(o-Phenylene)Pyrene § 1,10-(1,2-Phenylene)Pyrene	193395 or 193-39-5 NIOSH: NK 9300000 SAX: IBZ000	Carcinogen	---	---	30	0.038 PP	0.5 (30) HA	N/A	0.10
Iron §§ Fe § Ancor EN 80/150 § Carbonyl Iron § Armco Iron	7439896 or 7439-89-6 NIOSH: NO 4565500 SAX: IGK800	Harmful (aquatic life)	---	1,000 NPP	---	(23)	(23)	N/A	50
Isophorone §§ --- § Isoforon § NCI C55618 § Isoacetophorone § alpha-Isophorone § 1,1,3-Trimethyl-3-Cyclohexene-5-One § 3,5,5-Trimethyl-2-Cyclohexene-1-One § 3,5,5-Trimethyl-2-Cyclohexone	78591 or 78-59-1 NIOSH:GW 7700000 SAX: IHO000	Carcinogen	---	---	4.38	350 PP	400 HA	N/A	10

Appendix E

CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)

Except where indicated, values are listed as micro-grams-per-liter (µg/L). A '---' indicates that a Standard has not been adopted or information is currently unavailable. A '( )' indicates that a detailed note of explanation is provided.

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Lead §§ Pb § C.I. 77575 § C.I. Pigment Metal 4 § Glover § Lead Flake § Lead 22 § Omaha § Omaha & Grant § SI § SO	7439921 or 7439-92-1 NIOSH: OF 7525000 SAX: LCF000	Toxic	13.98 @ 25 mg/l hardness (12) PP	0.545 @ 25 mg/l hardness (12) PP	49	15 PP	15 PP	0.1	0.5
m-Xylene §§ --- § m-Xylol § 1,3-Xylene § meta-Xylene § m-Dimethylbenzene § m-Methyltoluene § 1,3-Dimethylbenzene § 1,3-Dimethyl Benzene	108383 or 108-38-3 NIOSH: ZE 2275000 SAX: XHA000	Toxic	---	---	1.17	10,000 MCL	10,000 MCL	0.5	1.5
Malathion §§ --- § Formal § Sumitox § Emmatos § Celthion § Forthion § Malacide § Kop-Thion § Calmathion § Carbethoxy § NCI C00215 § Carbethoxy Malathion § SHA 057701 § Phosphothion § S-1,2-Bis(Ethoxycarbonyl)Ethyl-O,O-Dimethyl Thiophosphate § O, O-Dimethyl-S-(1,2-Dicarbethoxyethyl) Dithiophosphate § O,O-Dimethyl S-1,2-Di(Ethoxycarbamyl)Ethyl Phosphorodithioate § Succinic Acid, mercapto-, diethyl ester, S-Ester with O,O-Dimethyl Phosphorodithioate	121755 or 121-75-5 NIOSH: WM 8400000 SAX: CBP000	Toxic	---	0.1 NPP	---	100 HA	100 HA	---	---
Manganese §§ Mn § Colloidal Manganese § Magnacat § Tronamang	7439965 or 7439-96-5 NIOSH: OO 9275000 SAX: MAP750	Harmful	---	---	---	(24)	(24)	N/A	5
MCPA §§ 4-chloro-2 methylphenoxy acetic acid	94-74-6	Toxic	---	---	---	4 HA	4 HA	N/A	---
MCPP §§ Mecoprop § (+)-2-(4-chloro-2-methylphenoxy)-propanoic acid	7085-19-0	Toxic	---	---	---	7 I	7 I	---	---
Mercury §§ Hg § Colloidal Mercury § Mercury, Metallic § NCI C60399 § Quick Silver § RCRA Waste Number U151	7439976 or 7439-97-6 NIOSH: OV 4550000 SAX: MCW250	Toxic with BCF >300	1.7 PP	0.91 PP	5,500	0.05 PP	2 MCL	N/A	0.01
Metalaxyl § Ridomil § ---	57837-19-1	Toxic	---	---	---	420 I	420 I	3.5	---
Methamidophos §§ Monitor § ---	10265-92-6	Toxic	---	---	---	0.35 I	0.35 I	---	---
Methomyl §§ Lannate § ---	16752-77-5	Toxic	---	---	---	200 HA	200 HA	1	---
Methoxychlor §§ --- § DMDT § Metox § Moxie § Methoxcide § NCI C00497 § Methoxy-DDT § Dimethoxy-DDT § RCRA Waste Number U247 § 1,1,1-Trichloro-2,2-Bis(p-Methoxyphenyl)Ethane § Benzene, 1,1'-(2,2,2-Trichloroethylidene)Bis[4-Methoxy- § 1,1'-(2,2,2-Trichloroethylidene)Bis[4-Methoxybenzene] § Ethane, 1,1,1-Trichloro-2,2-Bis(p-Methoxyphenyl)-	72435 or 72-43-5 NIOSH: KJ 3675000 SAX: DOB400	Toxic	---	0.03 NPP	---	40 MCL	40 MCL	---	1

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Metsulfuron Methyl §§ Ally § ---	74223-64-6	Toxic	---	---	---	1,750 I	1,750 I	0.1	---
Methyl Chloride §§ Chloromethane § Arctic § Monochloromethane § RCRA Waste Number U045	74873 or 74-87-3 NIOSH: PA 6300000 SAX: CHX500	Toxic	---	---	3.75	30 HA	30 HA	0.08	---
Metolachlor §§ Dual § ---	51218-45-2	Carcinogen	---	---	---	100 HA	100 HA	N/A	---
Metribuzin §§ Sencor § ---	21087-64-9	Toxic	---	---	---	200 HA	200 HA	10	---
Mirex §§ --- § NCI C06428 § Dechlorane § Bichlorendo § Ferriamicide § Perchloropentacyclodecane § Dodecachloropentacyclodecane § Hexachlorocyclopentadiene Dimer § Cyclopentadiene, Hexachloro-, Dimer § Perchloropentacyclo(5.2.1.0[sup 2,6].0[sup 3,9].0[sup 5,8])Decane § Dodecachlorooctahydro-1,3,4-Metheno-2H-Cyclobuta (c,d)Pentalene § 1,1a,2,2,3,3a,4,5,5,5a,5b,6-Dodecachlorooctahydro-1,3,4-Metheno-1H-Cyclobuta(cd) Pentalene § 1,3,4-Metheno-1H-Cyclobuta[cd]Pentalene, 1,1a,2,2,3,3a,4,5,5,5a,5b,6,-Dodecachlorooctahydro-	2385855 or 2385-85-5 NIOSH: PC 8225000 SAX: MQW500	Carcinogen	---	0.001 NPP	---	14 I	14 I	0.01	0.1
MTBE §§ Methyl Tertiary-Butyl Ether	1634-04-4	Harmful	---	---	---	30 (21)	30 (21)	---	---
N-Nitrosodimethylamine §§ Dimethylnitrosamine A707 § DMN § NDMA § DMNA § Nitrosodimethylamine § Dimethylnitrosoamine § N-Nitrosodimethylamine § RCRA Waste Number P082 § N,N-Dimethylnitrosamine § Methylamine, N-Nitrosodi- § Dimethylamine, N-Nitroso- § N-Methyl-N-Nitrosomethanamine § Methamine, N-Methyl-N-Nitroso- § Methanamine, N-Methyl-N-Nitroso-	62759 or 62-75-9 NIOSH: IQ 0525000 SAX: DSY400	Carcinogen	---	---	0.026	0.0069 PP	0.0069 PP	N/A	10
N-Nitrosodiphenylamine §§ --- § NDPA § NDPhA § Vultrol § Curetard A § NCI C02880 § Redax § TJP § Retarder J § Vulcalent A § Vulcatard § Vultrol § Nitrosodiphenylamine § Diphenylnitrosamine § N,N-Diphenylnitrosamine § N-Nitroso-N-Phenylaniline § Diphenylamine, N-Nitroso- § Benzenamine, N-Nitroso-N-Phenyl-	86306 or 86-30-6 NIOSH: JJ 9800000 SAX: DWI000	Carcinogen	---	---	136	33 PP	33 PP	N/A	10
n-Dioctyl Phthalate §§ --- § DNOP § PX-138 § Vinicizer 85 § Dinopol NOP § n-Octyl Phthalate § Octyl Phthalate § Dioctyl Phthalate § Di-n-Octyl Phthalate § Di-sec-Octyl Phthalate § RCRA Waste Number U107 § 1,2-Benzenedicarboxylic Acid, Dioctyl Ester	117840 or 117-84-0 NIOSH: TI 1925000 SAX: DVL600	Carcinogen	---	---	---	---	---	N/A	10

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
N-Nitrosodi-N-Propylamine §§ --- § DPN § DPNA § NDPA § Dipropylnitrosamine § N-Nitrosodipropylamine § Di-n-Propylnitrosamine § RCRA WAste Number U111 § Dipropylamine, N-Nitroso- § N-Nitrosodi-n-propylamine § N-Nitroso-di-n-propylamine § 1-Propanamine, N-Nitroso-n-Propyl-	621647 or 621-64-7 NIOSH: JL 9700000 SAX: DWU600	Carcinogen	---	---	1.13	0.05 PP	0.05 PP	N/A	10
N-Nitrosopyrrolidene §§ --- § NPYR § NO-pyr § N-N-pyr § 1-Nitrosopyrrolidene § Pyrrolidine, 1-Nitroso- § RCRA Waste Number U180 § Tetrahydro-N-Nitrosopyrrole § Pyrrole, Tetrahydro-N-Nitroso-	930552 or 930-55-2 NIOSH: UY 1575000 SAX: NLP500	Carcinogen	---	---	0.055	0.16 PP	0.16 PP	N/A	10
Naphthalene §§ Moth Balls § Mighty 150 § NCI C52904 § Naphthene § White Tar§ Naphthalin § Tar Camphor § Caswell Number 587 § RCRA Waste Number U165 § EPA Pesticide Chemical Code 055801	91203 or 91-20-3 NIOSH: QJ 0525000 SAX: NAJ500	Carcinogen	---	---	10.5	100 HA	100 HA	0.04	10
Nickel §§ Ni § C.I. 77775 § Ni 270 § Nickel 270 § Ni 0901-S § Ni 4303T § NP 2 § Raney Alloy § Raney Nickel	7440020 or 7440-02-0 NIOSH: QR 5950000 SAX: NCW500	Toxic	145@25mg/l hardness (12) PP	16.1 @ 25 mg/l hardness (12) PP	47	100 HA	100 HA	0.5	10
Nicosulfuron §§ Accent § ---	111991-09-4	Toxic	---	---	---	8,750 I	8,750 I	0.01	---
Nitrate (as Nitrogen[N]) §§ NO3	14797558 or 14797-55-8 NIOSH: --- SAX: ---	Toxic	(8)	(8)	---	10,000 MCL	10,000 MCL	10, surface water 5000, ground water, see ARM 17.30.715	10
Nitrate plus nitrite (as Nitrogen[N]) §§ $NO_3 + NO_2$	See nitrate and nitrite NIOSH: --- SAX: ---	Toxic	(8)	(8)	---	10,000 MCL	10,000 MCL	10, surface water 5000, ground water, see ARM 17.30. 715	10
Nitrite (as Nitrogen[N]) §§ NO_2	14797650 or 14797-65-0 NIOSH: --- SAX: ---	Toxic	(8)	(8)	---	1,000 MCL	1,000 MCL	4	10
Nitrobenzene §§ --- § NCI C60082 § Mirbane Oil § Nitrobenzol § Oil of Mirbane § Benzene, Nitro- § Essence of Myrbane § RCRA Waste Number U169	98953 or 98-95-3 NIOSH: DA 6475000 SAX: NEX000	Toxic	---	---	2.89	17 PP	17 PP	1.9	10

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CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Nitrogen, total inorganic (as Nitrogen[N]) §§ the sum of ammonia, nitrite, and nitrate	See ammonia, nitrate, and nitrite	Nutrient	(8)	(8)	---	---	---	10	10
Nitrophenol, 4- §§p-Nitropheno (DOT)l § 4-Hydroxynitrobenzene § NCI C55992) § RCRA Waste Number U170	100027 or 100-02-7 NIOSH: SM 2275000 SAX: NIF000	Toxic	---	---	3.31	60 HA	60 HA	2.4	---
o-Nitrophenol §§ --- § 2-Nitrophenol § 2-Hydroxynitrobenzene	88755 or 88-75-5 NIOSH: SM 2100000 SAX: NIE500	Toxic	---	---	2.33	---	---	0.45	---
o-Xylene §§ --- § o-Xylol § 1,2-Xylene § ortho-Xylene § o-Methyltoluene § o-Dimethylbenzene § 1,2-Dimethylbenzene § 1,2-Dimethyl Benzene	95476 or 95-47-6 NIOSH: ZE 2450000 SAX: XHJ000	Toxic	---	---	1.17	10,000 MCL	10,000 MCL	0.5	1.5
Oxamyl §§ --- § D-1410 § DPX 1410 § Insecticide-Nematicide 1410 § Vydate § Thioxamyl § Methyl 2-(Dimethylamino)-N- § Vydate L, Insecticide/Nematicide § ({[Methylamino]Carbonyl}Oxy)-2-Oxoethanimidothioate § 2-Dimethylamino-1-(Methylthio)Glyoxal O-Methylcarbamoylmonozime § S-Methyl 1-Dimethylcarbamoyl)-N ({Methylcarbamoyl}Oxy)Thioformimidate § Methyl N',N'-Dimethyl-N-({Methylcarbamoyl}Oxy)-1-Thiooxamimidate § N',N'-Dimethyl-N-[(Methylcarbamoyl)oxy]-1-Methylthiooxamimidic Acid	23135220 or 23135-22-0 NIOSH: RP 2300000 SAX: DSP600	Toxic	---	---	---	200 MCL	200 MCL	1	1
Oxydemeton Methyl §§ Metasystox R § ---	301-12-2	Toxic	---	---	---	3.5 I	3.5 I	1.4	---
Oxygen, dissolved (20) §§ O2 § Oxygen, Compressed § Oxygen, Refrigerated Liquid	7782447 or 7782-44-7 NIOSH: RS 2060000 SAX: OQW000	Toxic	(15)	(15)	---	---	---	---	50
p,p'-Dichlorodiphenyldichloroethylene §§ DDE § DDE § p,p'-DDE § 4,4'-DDE § NCI C00555 § Dichlorodiphenyldichloroethylene § Dichlorodiphenyldichloroethylene, p,p'- § 2,2'-bis(4-Chlorophenyl)-1,1-Dichloroethylene § 1,1'-(Dichloroethenylidene)bis(4-Chlorobenzene) § 2,2'-bis(p-Chlorophenyl)-1,1-Dichloroethylene § Benzene, 1,1'-(DichloroethenylideneBis[4-Chloro-	72559 or 72-55-9 NIOSH: KV 9450000 SAX: BIM750	Carcinogen	---	---	53,600	0.0022 PP	0.0022 PP	N/A	0.01
p,p'-Dichlorodiphenyltrichloroethane §§ DDT § DDT § 4,4'-DDT § Agritan § Anoflex § Arkotine § Azotox § Bosan Supra § Bovidermol § Chlorophenothan § Chlorophenothane § Chlorophenotoxum § Citox § Clofenotane § Dedelo § § Chlorophenothane § Diphenyltrichloroethane § Dichlorodiphenyltrichloroethane § 4,4'-Dichlorodiphenyltrichloroethane § Dichlorodiphenyltrichloroethane, p,p'- § 1,1,1-Trichloro-2,2,-bis(p-Chlorophenyl) Ethane § 1,1,1-Trichloro-2,2,-bis(p-Chlorophenyl)Ethane § 1,1,1-Trichloro-2,2,-Di(4-Chlorophenyl)-Ethane § 1,1-Bis-(p-Chlorophenyl)-2,2,2-Trichloroethane § 2,2-Bis-(p-Chlorophenyl)-1,1,1-Trichloroethane § Benzene, 1,1'-(2,2,2-Trichloroethylidene)Bis(4-Chloro-) § alpha,alpha-Bis(p-Chlorophenyl)-beta,beta,beta-Trichlorethane	50293 or 50-29-3 NIOSH: KJ 3325000 SAX: DAD200	Carcinogen	1.1 PP	0.001 PP	53,600	0.0022 PP	0.0022 PP	N/A	0.06

CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)									
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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
p,p'-Dichlorodiphenyldichloroethane §§ DDD § TDE § Dilene § NCI C00475 § Rothane § Rhothane § 4,4'-DDD § p,p'-DDD § p,p'-TDE § 4',4'-D-DDD § RCRA Waste Number U060 § Tetrachlorodiphenylethane § Dichlorodiphenyldichloroethane § Dichlorodiphenyl Dichloroethane § 2,2-bis (4-Chlorophenyl)-1,1-Dichloroethane § 1,1-Dichloro-2,2-bis(p-Chlorophenyl) Ethane § 1,1-bis(4-Chlorophenyl)-2,2-Dichloroethane § 2,2-bis(p-Chlorophenyl)-1,1-Dichloroethane § Benzene, 1,1'(2,2-Dichloroethylidene)Bis[4-Chloro-	72548 or 72-54-8 NIOSH: KI 0700000 SAX: BIM500	Carcinogen	---	---	53,600	0.0031 PP	0.0031 PP	N/A	0.01
p-Bromodiphenyl Ether §§ Benzene, 1-Bromo-4-Phenoxy- § p-Bromodiphenyl Ether § 4-Bromophenoxybenzene § 4-Bromodiphenyl Ether § 1-Bromo-4-Phenoxybenzene § p-Bromophenylphenyl Ether § 4-Bromophenyl Phenyl Ether	101553 or 101-55-3 NIOSH: --- SAX: ---	Toxic with BCF >300	---	---	1,640	---	---	N/A	10
p-Chloro-m-Cresol §§--- § PCMC § Parol § Aptal § Baktol § Baktolan § Ottafact § Raschit § Rasen-Anicon § Parmetol § Candasetpic § Chlorocresol § Preventol CMK § RCRA Waste Number U039 § Parachlorometra Cresol § 4-Chloro-3-methylphenol § 2-Chloro-Hydroxytoluene § Phenol, 4-Chloro-3-methyl- § Chlorophenol, 4-, methyl, 3-	59507 or 59-50-7 NIOSH: GO 7100000 SAX: CFE250	Harmful	---	---	---	3,000 PP	3,000 PP	N/A	20
p-Xylene §§ --- § p-Xylol § Chromar § Scintillar § 1,4-Xylene § para-Xylene § p-Methyltoluene § p-Dimethylbenzene § 1,4-Dimethylbenzene § 1,4-Dimethyl Benzene	106423 or 106-42-3 NIOSH: ZE 2625000 SAX: XHS000	Toxic	---	---	1.17	10,000 MCL	10,000 MCL	0.5	1.5
Paraquat Dichloride §§ ---	1910-42-5	Toxic	---	---	---	30 HA	30 HA	0.8	---
Parathion §§ --- § DNTP § Niran § Phoskil § Paradust § Stathion § Strathion § Pestox Plus § Nitrostigmine § Parathion Ethyl § Parathion-ethyl § Ethyl Parathion § Diethylparathion § Caswell Number 637 § RCRA Waste Number P089 § EPA Pesticide Chemical Code 057501 § Diethyl 4-Nitrophenylphosphorothioate § Diethyl para-Nitrophenol Thiophosphate § Diethyl-p-Nitrophenyl Monothiophosphate § O,O-Diethyl O-4-Nitrophenyl Thiophosphate § Phosphorothioic Acid, O,O-Diethyl O-(4-Nitrophenyl) Ester	56382 or 56-38-2 NIOSH: TF 4920000, dry TF 4950000, liquid SAX: PAK250, dry	Carcinogen	0.065 NPP	0.013 NPP	---	---	---	---	1
Pentachlorobenzene §§ Benzene, Pentachloro- § QCB- § RCRA Waste Number U183	608935 or 608-93-5 NIOSH: DA 6640000 SAX: PAV500	Toxic with BCF >300	---	---	2,125	1.4 PP	1.4 PP	N/A	0.1

Appendix E

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Pentachlorophenol **§§ Penta** **§ PCP § Durotox § Weedone § Chem-Tol § Lauxtol A § NCI C54933** **§ NCI C55378 § NCI C56655 § Permite § Dowcide 7 § Permacide** **§ Penta-Kil§ Permagard § Penchlorol § Chlorophen § Pentachlorphenol** **§ Pentaclorofenolo § Thompson's Wood Fix § Phenol, Pentachloro-** **§ 2,3,4,5,6-Pentachlorophenol § 1-Hydroxy- 2,3,4,5,6-Pentachlorobenzene**	**87865 or 87-86-5** **NIOSH: SM 6300000** **SAX: PAX250**	**Carcinogen**	**5.3 @ pH of 6.5 (14)** **PP**	**4 @ pH of 6.5 (14)** **PP**	**11**	**1** **MCL**	**1** **MCL**	**N/A**	**0.05**
pH **§§ ---**	**N/A**	**Harmful**	**(13)**	**(13)**	**---**	**(18)**	**(18)**	**N/A**	**---**
Phenanthrene (PAH) **§§ ---** **§ Phenantrin**	**85018 or 85-01-8** **NIOSH: SF 7175000** **SAX: PCW250**	**Toxic**	**---**	**---**	**30**	**---**	**---**	**0.01**	**0.25**
Phenol **§§ ---** **§ Baker's P and S Liquid and Ointment § NCI C50124 § Benzenol** **§ Monophenol § Oxybenzene § Phenic Acid § Carbolic Acid § Phenylic Acid §** **Hydroxybenzene § Hydroxybenzene § Phenyl Alcohol § Phenyl Hydrate § Phenylic Alcohol §** **Phenyl Hydroxide § Benzene, Hydroxy- § Monohydroxybenzene § RCRA Waste Number** **U188**	**108952 or 108-95-2** **NIOSH: SJ 3325000** **SAX: PDN750**	**Harmful**	**---**	**---**	**1.4**	**300** **PP**	**300** **PP**	**100**	**10**
Phosphorus, inorganic (20) **§§ ---** **§ Ortho-phosphorus § phosphorus, Ortho- § reactive phosphorus**	**14265442 or** **14265-44-2** **NIOSH: ---** **SAX: ---**	**Nutrient**	**(8)**	**(8)**	**---**	**---**	**---**	**1**	**1**
Picloram **§§ Tordon** **§ ATCP § K-Pin § Borolin § Amdon Grazon § NCI C00237** **§ Tordon 10K § Tordon 22K § Tordon 101 Mixture** **§ 3,5,6-Trichloro-4-Aminopicolinic Acid § 4-Amino-3,5,6-Trichloropicolinic Acid**	**1918021 or 1918-02-1** **NIOSH: TJ 7525000** **SAX: AMU250**	**Toxic**	**---**	**---**	**---**	**500** **MCL**	**500** **MCL**	**0.14**	**1**
Polychlorinated Biphenyls, (sum of all homolog, all isomer, all congener or all Aroclor analyses) **§§ PCB's** **§ Aroclor 1016, 1221, 1232, 1242, 1248, 1254, 1260, 1268, 2565, 4465 § Chlophen § Chlorextol § Chlorinated Biphenyl § Chlorinated Diphenyl § Chlorinated Diphenylene § Chloro Biphenyl § Chloro-1,1-Biphenyl § Clophen § Dykanol § Fenclor § Inerteen § Kanechlor 300, 400, 500 § Montar § Noflamol § PCB (DOT) § Phenochlor § Polychlorobiphenyl § Pyralene § Pyranol § Santotherm § Sovol § Therminol FR-1**	**Multiple**	**Carcinogen**	**---**	**0.014** **PP**	**31,200**	**0.00064** **PP**	**0.5** **MCL**	**N/A**	**1**
Primisulfuron Methyl **§§ Beacon** **§ Exceed**	**86209-51-0**	**Toxic**	**---**	**---**	**---**	**42** **I**	**42** **I**	**0.1**	**---**
Prometon **§§ Pramitol** **§ ---**	**1610-18-0**	**Toxic**	**---**	**---**	**---**	**100** **HA**	**100** **HA**	**0.3**	**---**
Pronamide **§§ Kerb** **§ ---**	**23950-58-5**	**Carcinogen**	**---**	**---**	**---**	**50** **HA**	**50** **HA**	**N/A**	**---**

Appendix E

CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)

Except where indicated, values are listed as micro-grams-per-liter (µg/L). A '---' indicates that a Standard has not been adopted or information is currently unavailable. A '( )' indicates that a detailed note of explanation is provided.

Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Propachlor §§ Ramrod § ---	1918-16-7	Toxic	---	---	---	90 HA	90 HA	0.5	---
Propane, 1,2-Dibromo-3-Chloro- §§ Dibromochloropropane § 1,2-Dibromo-3-Chloropopane § Fumagon § Fumazone § NCI C00500 § Nemabrom § Nemafume § Nemagon § Nemagone § Nemagone Soil Fumigant § Nemanax § Nemapaz § Nemaset § Nematocide § Nematox § OS 1897 § OXY DBCP § SD 1897 § Caswell Number 287 § RCRA Waste Number U066§ 1-Chloro-2,3-Dibromopropane § DBCP § EPA Pesticide Chemical Code 011301	96128 or 96-12-8 NIOSH: TX 8750000 SAX: DDL800	Carcinogen	---	---	---	0.2 MCL	0.2 MCL	N/A	0.05
Propazine §§ ---	139-40-2	Carcinogen	---	---	---	10 HA	10 HA	N/A	---
Propham §§ ---	122-42-9	Toxic	---	---	---	100 HA	100 HA	0.13	---
Propoxur §§ Baygon § ---	114-26-1	Carcinogen	---	---	---	3 HA	3 HA	N/A	---
Pyrene (PAH) §§ --- § ß-Pyrine § beta-Pyrene § Benzo(def)Phenanthrene § Benzo[def]Phenanthrene	129000 or 129-00-0 NIOSH: UR 2450000 SAX: PON250	Toxic	---	---	30	830 PP	830 PP	0.25	0.25
Radium 226 §§ ---	Radium 226 13982636 or 13982-63-6 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	5 picocuries/liter Note: The sum of Radium 226 and 228. MCL	5 picocuries/liter Note: The sum of Radium 226 and 228. MCL	N/A	---
Radium 228 §§ ---	Radium 228 15262201 or 15262-20-1 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	5 picocuries/liter Note: The sum of Radium 226 and 228. MCL	5 picocuries/liter Note: The sum of Radium 226 and 228. MCL	N/A	---
Radon 222 §§ ---	14859677 or 14859-67-7 NIOSH: --- SAX: ---	Carcinogen / Radioactive	---	---	---	15 picocuries/ liter HA	15 picocuries/ liter HA	N/A	---
Selenium §§ Se § C.I. 77805 § Colloidal Selenium § Elemental Selenium § Selenium Alloy § Selenium Base § Selenium Dust § Selenium Elemental § Selinium Homopolymer§ Selenium Metal Powder, Non-Pyrophoric § Vandex	7782492 or 7782-49-2 NIOSH: VS 7700000 VS 8310000, colloidal SAX: SBO500 SAX: SBP000, colloidal	Toxic	20 PP	5 PP	4.8	50 MCL	50 MCL	0.6	1
Silver §§ Ag § Argentum § C.I. 77820 § Shell Silver § Silver Atom	7440224 or 7440-22-4 NIOSH: VW 3500000 SAX: SDI500	Toxic	0.374 @ 25 mg/l hardness(12) PP	---	0.5	100 HA	100 HA	0.2	0.5

CIRCULAR DEQ-7, MONTANA NUMERIC WATER QUALITY STANDARDS(9)

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Simazine §§ --- § CDT § Herbex § Framed § Bitemol § Radokor § A 2079 § Batazina § Cat (Herbicide) § CET § G 27692 § Geigy 27,692 § Gesaran § Gesatop 50 § Simazine 80W § Symazine § Taphazine § W 6658 § Zeapur § Princep § Aquazine § Herbazin § Tafazine § 2,4-bis(Ethylamino)-6-Chloro-s-Triazine § 1-Chloro, 3,5-Bisethylamino-2,4,6-Triazine § 2-Chloro-4,6-Bis(Ethylamino)-1,3,5-Triazine § 6-Chloro-N,N'-Diethyl-1,3,5-Triazine-2,4-Diyldiamine	122349 or 122-34-9 NIOSH: XY 5250000 SAX: BJP000	Carcinogen	---	---	---	4 MCL	4 MCL	N/A	0.3
Strontium §§ ---	7447246 NIOSH: --- SAX: ---	Toxic	---	---	---	4,000 HA	4,000 HA	100	---
Styrene §§ --- § Styrol § Cinnamol § Cinnamene § Cinnamenol § NCI C02200 § Styrole § Strolene § Styron § Stropor § Vinylbenzol § Phenethylene § Phenylethene § Vinylbenzene § Ethenylbenzene § Phenylethylene § Benzene, Vinyl- § Stryene, Monomer	100425 or 100-42-5 NIOSH: WL 3675000 SAX: SMQ000	Carcinogen	---	---	---	100 HA	100 HA	N/A	0.5
Sulfometuron Methyl §§ Oust § ---	74222-97-2	Toxic	---	---	---	1,750 I	1,750 I	0.01	---
Tebuthiuron §§ --- § Spike	34014-18-1	Toxic	---	---	---	500 HA	500 HA	2	---
Temperature §§ ---	N/A	Harmful	(13)	(13)	---	---	---	N/A	---
Terbacil §§ Sinbar § ---	5902-51-1	Toxic	---	---	---	90 HA	90 HA	2.2	---
Terbufos §§ Counter § ---	13071-79-9	Toxic	---	---	---	0.9 HA	0.9 HA	0.5	---
Tetrachlorobenzene, 1,2,4,5- §§ Benzene, 1,2,4,5-Tetrachloro- § RCRA Waste Number U207 § 1,2,4,5-Tetrachlorobenzene	95943 or 95-94-3 NIOSH: DB 9450000 SAX: TBN750	Toxic with BCF >300	---	---	1,125	0.97 NPP	0.97 NPP	N/A	0.1
Tetrachloroethane, 1,1,2,2- §§ Tetrachloroethane § TCE § Cellon § Westron § Bonoform § sym-Tetrachloroethane § RCRA Waste Number U209 § Acetylene Tetrachloride § 1,1,2,2-Tetrachloroethane § Ethane, 1,1,2,2-Tetrachloro- § 1,1-Dichloro-2,2-Dichloroethane	79345 or 79-34-5 NIOSH: KI 8575000 SAX: ACK500	Carcinogen	---	---	5	1.7 PP	2.0 HA	N/A	0.5

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Tetrachloroethylene §§ Perchlorethylene § NCI C04580 § PCE § Perk § PERC § ENMA § Dow-Per § Perchlor § Perclene § Perklone § Didakene § Tetra Cap § Percosolve § Perchloroethylene § Tetrachloroethene § Carbon Bichloride § Carbon Dichloride § RCRA Waste Number U210 § Ethylene Tetrachloride § Ethylene, Tetrachloro- § 1,1,2,2-Tetrachloroethylene	127184 or 127-18-4 NIOSH: KX 3850000 SAX: TBQ250	Carcinogen	---	---	30.6	5 MCL	5 MCL	N/A	0.5
Thallium §§ Tl § Ramor	7440280 or 7440-28-0 NIOSH: XG 3425000 SAX: TEI000	Toxic	---	---	119	0.24 PP	2 MCL	0.3	0.2
Thifensulfuron Methyl §§ --- § Pinnacle	79277-27-3	Toxic	---	---	---	910 I	910 I	1	---
Toluene §§ --- § Antisal 1a § NCI C07272 § Toluol § Tolu-Sol § Methacide § Methylbenzol § Methylbenzene § Phenylmethane § Phenyl-Methane § Methyl-Benzene § Benzene, Methyl § RCRA Waste Number U220	108883 or 108-88-3 NIOSH: XS 5250000 SAX: TGK750	Toxic	---	---	10.7	1,000 MCL	1,000 MCL	0.01	0.5
Toxaphene §§ --- § Attac 4-2 § Alltox § Alltex § Attac 6 § Toxakil § Agricide § Chem-Phene § Clor Chem T-590 § Compound 3956 § Crestoxo § Estonox § Geniphene § Gy-Phene § Hercules 3956 § Melipax § Motox § PCC § Phenacide § Phenatox § Toxadust § Camphechlor § Maggot Killer (F) § Toxaphene mixture § Chlorinated-Camphene § Camphene, Octachloro- § RCRA Waste Number P123	8001352 or 8001-35-2 NIOSH: XW 5250000 SAX: THH750	Carcinogen	0.73 PP	0.0002 PP	13,100	0.0028 PP	0.3 HA	N/A	1
Tralkoxydim (28) §§ Achieve	87820-88-0	Carcinogen	---	---	---	20 HA	20 HA	N/A	---
trans-1,2-Dichloroethylene §§ --- § trans-Dichloroethylene § RCRA Waste Number U079 § trans-1,2-Dichloroethane § trans-1,2-Dichloroethene § Dichloroethylene, trans-§ trans-Acetylene Dichloride § 1,2-trans-Dichloroethylene § Ethene, 1,2-Dichloro-, (E)- § 1,2-Dichloroethylene, trans-	156605 or 156-60-5 NIOSH: KV 9400000 SAX: DFI600	Toxic	---	---	1.58	100 MCL	100 MCL	0.05	0.5
trans-1,3-Dichloropropene §§ Telone II § 1,3-Dichloropropene § 1,3-Dichloropropylene § (E)-1,3-Dichloropropene § trans-1,3-Dichloropropylene § 1-Propene, 1,3-Dichloro-, (E)-	10061026 or 10061-02-6 NIOSH: UC 8320000 SAX: DGH000	Carcinogen	---	---	1.91	2 HA	2 HA	N/A	0.5
trans-Nonachlor (Chlordane component) §§ --- § Chlordane, trans-Isomer	39765805 or 39765-80-5 NIOSH: --- SAX: ---	Carcinogen	---	---	14,100	0.0080 PP	1 HA	N/A	0.4
Triasulfuron §§ Amber	82097-50-5	Toxic	---	---	---	70 I	70 I	1	---
Tribenuron Methyl §§ Express	101200-48-0	Carcinogen	---	---	---	8 I	8 I	0.1	---

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Tributyltin (TBT)	56573-85-4	Toxic	0.46 NPP	0.072 NPP	---	---	---	N/A	---
Trichlorobenzene, 1,2,4- §§ Benzene, 1,2,4-Trichloro- § unsym-Trichlorobenzene § 1,2,4-Trichlorobenzene	120821 or 120-82-1 NIOSH: DC 2100000 SAX: TIK250	Toxic	---	---	114	35 PP	70 MCL	0.02	0.5
Trichloroethane, 1,1,2- §§ Vinyl Trichloride § 1,1,2-Trichloroethane § ß-T § Ethane Trichloride § beta-Trichloroethane § 1,2,2-Trichloroethane § RCRA Waste Number U227 § NCI C04579 § Ethane, 1,1,2-Trichloro- § Caswell Number 875A [NLM] § EPA Pesticide Chemical Code 081203 [NLM]	79005 or 79-00-5 NIOSH: KJ 3150000 SAX: TIN000	Carcinogen	---	---	4.5	3 HA	3 HA	N/A	0.5
Trichloroethane, 1,1,1- §§ Methyl Chloroform § -T § Strobane § Inhibisol § 1,1,1-TCE § Tri-Ethane § Solvent 111 § Aerothene TT § Chloroethene § Chlorten § NCI C04626 § Methylchloroform § Chloroform, Methyl- § 1,1,1-Trichloroethene § alpha-Trichloroethane § Methyltrichloromethane § RCRA WAste Number U226 § 1,1,1-Trichloroethane § Ethane, 1,1,1-Trichloro-	71556 or 71-55-6 NIOSH: KJ 2975000 SAX: TIM750	Toxic	---	---	5.6	200 MCL	200 MCL	0.5	0.5
Trichloroethylene §§ --- § TCE § Triad § Vitran § Algylen § Dow-Tri § Lanadin § Vestrol § Anamenth § Benzinol § Tri-Plus § Tri-Clene § Trichlorethene § Trichloroethene § Trichloroethane § Trichlorethylene § Tetrachloroethene § Ethene, Trichloro- § Ethylene Trichloride § Ethylene, Trichloro- § Acetylene Trichloride § 1,1,2-Trichloroethylene § 1,2,2-Trichloroethylene § 1-Chloro-2,2-Dichloroethylene § 1, 1-Dichloro-2-Chloroethylene	79016 or 79-01-6 NIOSH: KX 4550000 SAX: TIO750	Carcinogen	---	---	10.6	5 MCL	5 MCL	N/A	0.5
Trichlorofluoromethane (HM) §§ Freon 11 § F 11 § FC 11 § Arcton 9 § Eskimon 11 § Halocarbon 11 § Algofrene Type 1 § RCRA Waste Number U121 § Fluorocarbon Number 11 § NCI C04637 § Isotron 11 § Fluorotrichloromethane § Isceon 131 § Monofluorotrichloromethane § Ucon Refrigerant 11 § Trichloromonofluoromethane	75694 or 75-69-4 NIOSH: PB 6125000 SAX: TIP500	Toxic	---	---	3.75	10,000 PP	10,000 PP	0.07	0.5
Trichlorophenol, 2,4,5- §§ Dowcide B § 2,4,5-Trichlorophenol § Nurelle § Dowcide 2 § Collunosol § Preventol 1 § RCRA Waste Number U230 § NCI C61187	95954 or 95-95-4 NIOSH: SN 1400000 SAX: TIV750	Harmful	---	---	110	7 I	7 I	10	10
Trichlorophenol, 2,4,6- §§ Phenachlor § 2,4,6-Trichlorophenol § Dowcide 2S § RCRA Waste Number U231 § Omal § Phenol, 2,4,6-trichloro- § NCI C02904	88062 or 88-06-2 NIOSH: SN 1575000 SAX: TIW000	Carcinogen	---	---	150	14 PP	30 HA	N/A	10

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Pollutant Element / Chemical Compound or Condition	CASRN, NIOSH and SAX Numbers	Category (1) (2)	Aquatic Life Standards (16)		Bioconcentration Factor (BCF) (5)	Human Health Standards (17) (3)		Trigger Value (22)	Required Reporting
			Acute (3)	Chronic (4)		Surface Water	Ground Water		
Trichlorophenoxy Proprionic Acid, 2 (2,4,5-) §§ Fenoprop § 2 (2,4,5-Trichlorophenoxy) Proprionic Acid § Kuran § Propon § Silvex § Aqua-Vex § Ded-Weed § Sta-Fast § 2,4,5-TP § Color-Set § Weed-B-Gon § Double Strength § RCRA Waste Number U233 § 2,4,5-Trichlorophenoxypropionic Acid § (2,4,5-Trichlorophenoxy)Propionic Acid § 2-(2,4,5-Trichlorophenoxy)-Proprionic Acid § (+/-)-2-(2,4,5-Trichlorophenoxy)propanoic Acid	93721 or 93-72-1 NIOSH: UF 8225000 SAX: TIX500	Toxic	---	---	---	10 NRWQC	50 MCL	0.075	0.1
Trichlorophenoxyacetic Acid §§ Brush-Rhap § 2,4,5-T (Brush-Rhap)	93-76-5	Toxic	---	---	---	70 HA	70 HA	N/A	---
Triclopyr - amine salt §§ Garlon § ---	55335-06-3	Toxic	---	---	---	350 I	350 I	0.25	---
Trifluralin §§ Treflan § Buckle	1582-09-8	Carcinogen	---	---	---	5 HA	5 HA	N/A	---
Trihalomethanes, total §§ --- § TTHMs	Multiple	Carcinogen	---	---	---	100 MCL	100 MCL	N/A	2
Turbidity (20) §§ ---	N/A	Harmful	(13)	(13)	---	---	---	N/A	1 NTU
Uranium, natural §§ U § Uranium Metal, Pyrophoric	7440611 or 7440-61-1 NIOSH: YR 3490000 SAX: UNS000	Carcinogen / Radioactive	---	---	---	30 MCL	30 MCL	0.03	---
Vinyl 2-Chloroethyl Ether §§ Vinyl ß-Chloroethyl Ether- § (2-Chloroethoxy)Ethene § RCRA Waste Number U042 § 2-Chloroethyl Vinyl Ether	110758 or 110-75-8 NIOSH: KN 6300000 SAX: CHI250	Carcinogen	---	---	0.557	---	---	N/A	---
Vinyl Chloride §§ --- § VC § VCM § Chlorethene § Chloroethene § Chlorethylene § Chloroethylene § Ethylene, Chloro- § Monochloroethylene § Ethylene Monochloride § RCRA Waste Number U043 § Vinyl Chloride Monomer § Vinyl C Monomer § Trovidur	75014 or 75-01-4 NIOSH: KU 9625000 SAX: VNP000	Carcinogen	---	---	1.17	0.25 PP	0.2 HA	N/A	0.5
Xylenes §§ --- § Xylol § Violet 3 § Mixed Xylenes § Methyl Toluene § Dimethylbenzene § RCRA Waste Number U239 § NCI C55232 § Total equals the sum of meta, ortho, and para.	1330207 or 1330-20-7 NIOSH: ZE 2100000 SAX: XGS000	Toxic	---	---	1.17	10,000 MCL	10,000 MCL	0.5	1.5
Zinc §§ Zn § Blue Powder § C.I. 77945 § C.I. Pigment Black 16 § C.I. Pigment Metal 6 § Emanay Zinc Dust § Granular Zinc § Jasad § Merrillite § Pasco § Zinc, Powder or Dust, non-Pyrophoric § Zinc, Powder or Dust, Pyrophoric	7440666 or 7440-66-6 NIOSH: ZG 8600000 SAX: ZBJ000	Toxic	37 @ 25mg/l hardness(12) PP	37 @ 25 mg/l hardness (12) PP	47	2,000 HA	2,000 HA	5	10

Appendix E

(1) Based on EPA's categories and include parameters determined to be to toxic (toxin), carcinogenic (carcinogen), or harmful. Harmful parameters include nutrients, biological agents, and those parameters which cause taste and/or odor effects or physical effects.

(2) Carcinogens are chemicals classified by EPA as carcinogens for an oral route of exposure in the drinking water regulations and health advisories (EPA 822-B-96-002) and those listed as carcinogens in the EPA priority pollutants list. Carcinogens include those parameters in classifications A (Human Carcinogens), B1 or B2 (Probable Human Carcinogens), and C (Possible Human Carcinogen).

(3) No surface water or ground water sample concentration shall exceed these values.

(4) No surface water or ground water average concentration shall exceed these values based upon a four-day (96-hour) or longer period.

(5) All bioconcentration factors (BCF's) were developed by the EPA as part of the Standards development as mandated by Section 304(a) of the federal Clean Water Act. National Recommended Water Quality Criteria: 2002 Human Health Criteria Calculation Matrix (EPA-822-R-02-012).

(6) The 24 hour geometric mean value must not exceed these values.

(7) Freshwater Aquatic Life Standards for total ammonia nitrogen (mg/l NH3-N plus NH4-N).

Because these formulas are non-linear in pH and temperature, the Standard is the average of separate evaluations of the formulas reflective of the fluctuations of flow, pH, and temperature within the averaging period; it is not appropriate to apply the formula to average pH, temperature and flow.

1. The one-hour average concentration of total ammonia nitrogen (in mg N/L) does not exceed the CMC (acute criterion) calculated using the following equations.

Where salmonid fish are present:

$$CMC = \frac{0.275}{1 + 10^{7.204 - pH}} + \frac{39.0}{1 + 10^{pH - 7.204}}$$

Or where salmonid fish are not present:

$$CMC = \frac{0.411}{1 + 10^{7.204 - pH}} + \frac{58.4}{1 + 10^{pH - 7.204}}$$

2. The thirty-day average concentration of total ammonia nitrogen (in mg N/L) does not exceed the CCC (chronic criterion) calculated using the following equations.

When fish early life stages[1] are present:

$$CCC = \left(\frac{0.0577}{1 + 10^{7.688 - pH}} + \frac{2.487}{1 + 10^{pH - 7.688}} \right) \times MIN\left(2.85, 1.45 \times 10^{0.028 \times (25 - T)}\right)$$

When fish early life stages[1] are absent:

$$CCC = \left(\frac{0.0577}{1 + 10^{7.688 - pH}} + \frac{2.487}{1 + 10^{pH - 7.688}} \right) \times 1.45 \times 10^{0.028 \times (25 - MAX(T,7))}$$

[1] Includes all embryonic and larval stages and all juvenile forms of fish to 30-days following hatching.

3. In addition, the highest four-day average within the 30-day period should not exceed 2.5 times the CCC.

Appendix E

Table 1. pH-Dependent Values of the CMC (Acute Criterion) Ammonia Standard.

CMC, total ammonia nitrogen (mg/l NH_3-N plus NH_4-N)		
pH	**Salmonids Present**	**Salmonids Absent**
6.5	**32.6**	**48.8**
6.6	**31.3**	**46.8**
6.7	**29.8**	**44.6**
6.8	**28.1**	**42.0**
6.9	**26.2**	**39.1**
7.0	**24.1**	**36.1**
7.1	**22.0**	**32.8**
7.2	**19.7**	**29.5**
7.3	**17.5**	**26.2**
7.4	**15.4**	**23.0**
7.5	**13.3**	**19.9**
7.6	**11.4**	**17.0**
7.7	**9.65**	**14.4**
7.8	**8.11**	**12.1**
7.9	**6.77**	**10.1**
8.0	**5.62**	**8.40**
8.1	**4.64**	**6.95**
8.2	**3.83**	**5.72**
8.3	**3.15**	**4.71**
8.4	**2.59**	**3.88**
8.5	**2.14**	**3.20**
8.6	**1.77**	**2.65**
8.7	**1.47**	**2.20**
8.8	**1.23**	**1.84**
8.9	**1.04**	**1.56**
9.0	**0.885**	**1.32**

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Table 2. Temperature and pH-Dependent Values of the CCC (Chronic Criterion) for Fish Early Life Stages Present and for Fish Early Life Stages Absent.

pH	CCC for Fish Early Life Stages Present, total ammonia nitrogen (mg/l NH_3-N plus NH_4-N)										CCC for Fish Early Life Stages Absent, total ammonia nitrogen (mg/l NH_3-N plus NH_4-N)									
	Temperature, C										Temperature, C									
	0	14	16	18	20	22	24	26	28	30	0-7	8	9	10	11	12	13	14	15*	16*
6.5	6.67	6.67	6.06	5.33	4.68	4.12	3.62	3.18	2.80	2.46	10.8	10.1	9.51	8.92	8.36	7.8	7.35	6.89	6.46	6.06
6.6	6.57	6.57	5.97	5.25	4.61	4.05	3.56	3.13	2.75	2.42	10.7	9.99	9.37	8.79	8.24	7.72	7.24	6.79	6.36	5.97
6.7	6.44	6.44	5.86	5.15	4.52	3.98	3.50	3.07	2.70	3.37	10.5	9.81	9.20	8.62	8.08	7.58	7.11	6.66	6.25	5.86
6.8	6.29	6.29	5.72	5.03	4.42	3.89	3.42	3.00	2.64	2.32	10.2	9.58	8.98	8.42	7.90	7.40	6.94	6.51	6.10	5.72
6.9	6.12	6.12	5.56	4.89	4.30	3.78	3.32	2.92	2.57	2.25	9.93	9.31	8.73	8.19	7.68	7.20	6.75	6.33	5.93	5.56
7.0	5.91	5.91	5.37	4.72	4.15	3.65	3.21	2.82	2.48	2.18	9.60	9.00	8.43	7.91	7.41	6.95	6.52	6.11	5.73	5.37
7.1	5.67	5.67	5.15	4.53	3.98	3.50	3.08	2.70	2.38	2.09	9.20	8.63	8.09	7.58	7.11	6.67	6.25	5.86	5.49	5.15
7.2	5.39	5.39	4.90	4.31	3.78	3.33	2.92	2.57	2.26	1.99	8.75	8.20	7.69	7.21	6.76	6.34	5.94	5.57	5.22	4.90
7.3	5.08	5.08	4.61	4.06	3.57	3.13	2.76	2.42	2.13	1.87	8.24	7.73	7.25	6.79	6.37	5.97	5.60	5.25	4.92	4.61
7.4	4.73	4.73	4.30	3.78	3.32	2.92	2.57	2.26	1.98	1.74	7.69	7.21	6.76	6.33	5.94	5.57	5.22	4.89	4.59	4.30
7.5	4.36	4.36	3.97	3.49	3.06	2.69	2.37	2.08	1.83	1.61	7.09	6.64	6.23	5.84	5.48	5.13	4.81	4.51	4.23	3.97
7.6	3.98	3.98	3.61	3.18	2.79	2.45	2.16	1.90	1.67	1.47	6.46	6.05	5.67	5.32	4.99	4.68	4.38	4.11	3.85	3.61
7.7	3.58	3.58	3.25	2.86	2.51	2.21	1.94	1.71	1.50	1.32	5.81	5.45	5.11	4.79	4.49	4.21	3.95	3.70	3.47	3.25
7.8	3.18	3.18	2.89	2.54	2.23	1.96	1.73	1.53	1.33	1.17	5.17	4.84	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89
7.9	2.80	2.80	2.54	2.24	1.96	1.73	1.52	1.33	1.17	1.03	4.54	4.26	3.99	3.74	3.51	3.29	3.09	2.89	2.71	2.54
8.0	2.43	2.43	2.21	1.94	1.71	1.50	1.32	1.16	1.02	0.897	3.95	3.70	3.47	3.26	3.05	2.86	2.68	2.52	2.36	2.21
8.1	2.10	2.10	1.91	1.68	1.47	1.29	1.14	1.00	0.879	0.773	3.41	3.19	2.99	2.81	2.63	2.47	2.31	2.17	2.03	1.91
8.2	1.79	1.79	1.63	1.43	1.26	1.11	0.973	0.855	0.752	0.661	2.91	2.73	2.56	2.40	2.25	2.11	1.98	1.85	1.74	1.63
8.3	1.52	1.52	1.39	1.22	1.07	0.941	0.827	0.727	0.639	0.562	2.47	2.32	2.18	2.04	1.91	1.79	1.68	1.58	1.48	1.39
8.4	1.29	1.29	1.17	1.03	0.906	0.796	0.700	0.615	0.541	0.475	2.09	1.96	1.84	1.73	1.62	1.52	1.42	1.33	1.25	1.17
8.5	1.09	1.09	0.990	0.870	0.765	0.672	0.591	0.520	0.457	0.401	1.77	1.66	1.55	1.46	1.37	1.28	1.20	1.13	1.06	0.990
8.6	0.920	0.920	0.836	0.735	0.646	0.568	0.499	0.439	0.386	0.339	1.49	1.40	1.31	1.23	1.15	1.08	1.01	0.951	0.892	0.836
8.7	0.778	0.778	0.707	0.622	0.547	0.480	0.422	0.371	0.326	0.287	1.26	1.18	1.11	1.04	0.976	0.915	0.858	0.805	0.754	0.707
8.8	0.661	0.661	0.601	0.528	0.464	0.408	0.359	0.315	0.277	0.244	1.07	1.01	0.944	0.885	0.829	0.778	0.729	0.684	0.641	0.601
8.9	0.565	0.565	0.513	0.451	0.397	0.349	0.306	0.269	0.237	0.208	0.917	0.860	0.806	0.756	0.709	0.664	0.623	0.584	0.548	0.513
9.0	0.486	0.486	0.442	0.389	0.342	0.300	0.264	0.232	0.204	0.179	0.790	0.740	0.694	0.651	0.610	0.572	0.536	0.503	0.471	0.442

*At 15 C and above, the criterion for fish ELS absent is the same as the criterion for fish ELS present

(8) A plant nutrient, excessive amounts of which may cause violations of Administrative Rules of Montana (ARM) 17.30.637 (1)(e).

(9) Approved methods of sample preservation, collection, and analysis for determining compliance with the standards set forth in DEQ-7 are found in the surface water quality standards (ARM17.30.601, et seq.) and the ground water rules (ARM 17.30.1001, et seq.).

Standards for metals (except aluminum) in surface water are based upon the analysis of samples following a "total recoverable" digestion procedure (Section 9.4, "Methods of Analysis of Water and Wastes", 1983, Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency, EPA-600/4-79-020, or equivalent). Standards for alpha emitters, beta emitters and gamma emitters in surface waters are based upon the analysis of unfiltered samples and appropriate EPA approved analysis methods.

Standards for metals in ground water are based upon the dissolved portion of the sample (after filtration through a 0.45 µm membrane filter, as specified in "Methods for Analysis of Water and Wastes" 1983, Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency, EPA-600/4-79-020, or equivalent). Standards for alpha emitters, beta emitters and gamma emitters in ground water are based upon the analysis of filtered samples and appropriate EPA approved analysis methods.

Standard for organic parameters in surface water and ground water are based on unfiltered samples.

(10) Calculation of an equivalent concentration of 2,3,7,8-TCDD is to be based on congeners of CDDs/CDFs and the toxicity equivalency factors (TEF) in Table 5 page 787 of van den Berg, M: Bosveld, ATC: et al. (1998) Toxicity equivalency factors (TEFs) for PCBs, PCDDs, PCDFs for humans and wildlife. Environ Health Perspect 106(12):775-792. The analysis method to be used is EPA Method 1613, Revision B, Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS), EPA Method 8290, or other method approved by the department on case by case basis. The Required Reporting Value(s) (RRV) for Dioxin and congeners are to be the lowest detection level for the analysis method approved by the Department.

(11) Radionuclides consisting of alpha emitters, beta emitters and gamma emitters are classified as carcinogens. Alpha emitters means the total radioactivity due to alpha particle emission. Beta emitters means the total radioactivity due to beta particle emission. Gamma emitters means the total radioactivity due to gamma particle emission. The emitters covered under this Standard include but are not limited to:

Cesium, radioactive Iodine, radioactive Strontium -89 and -90, radioactive Tritium Gamma photon emitters

(12) Freshwater Aquatic Life Standards for these metals are expressed as a function of total hardness (mg/l, CaCO3). The values displayed in the chart correspond to a total hardness of 25 mg/l. The hardness relationships are:

	Acute = exp.{ma[ln(hardness)]+ba}		**Chronic = exp.{mc[ln(hardness)]+bc}**	
	ma	**ba**	**mc**	**Bc**
cadmium	**1.0166**	**-3.924**	**0.7409**	**-4.719**
Copper	**0.9422**	**-1.700**	**0.8545**	**-1.702**
chromium (III)	**0.819**	**3.7256**	**0.819**	**0.6848**
Lead	**1.273**	**-1.46**	**1.273**	**-4.705**
Nickel	**0.846**	**2.255**	**0.846**	**0.0584**
Silver	**1.72**	**-6.52**	**--------**	**---------**
Zinc	**0.8473**	**0.884**	**0.8473**	**0.884**

Note: If the hardness is <25mg/L as CaCO3, the number 25 must be used in the calculation. If the hardness is greater than or equal to 400 mg/L as CaCO3, 400 mg/L must be used in the calculation.

(13) This standard is based upon Water-Use Classifications. See Administrative Rules of Montana (ARM), title 17, Chapter 30 - Water Quality, Sub-Chapter 6 - Surface Water Quality Standards.

(14) Freshwater Aquatic Life Standard for pentachlorophenol with pH. Values displayed in the chart correspond to a pH of 6.5 and are calculated as follows:

Acute = exp[1.005(pH) - 4.869] Chronic = exp[1.005(pH) - 5.134]

(15) Freshwater Aquatic Life Standard for dissolved oxygen in milligrams per liter are as follows:

	Standards for Waters Classified A-1, B-1, B-2, C-1, and C-2		**Standards for Waters Classified B-3, C-3, and I**	
	Early Life Stages[1,2]	**Other Life Stages**	**Early Life Stages[2]**	**Other Life Stages**
30 Day Mean	**N/A[3]**	**6.5**	**N/A[3]**	**5.5**
7 Day Mean	**9.5 (6.5)**	**N/A**	**6.0**	**N/A**
7 Day Mean Minimum	**N/A[3]**	**5.0**	**N/A[3]**	**4.0**
1 Day Minimum[4]	**8.0 (5.0)**	**4.0**	**5.0**	**3.0**

1 These are water column concentrations recommended to achieve the required inter-gravel dissolved oxygen concentrations shown in parentheses. For species that have early life stages exposed directly to the water column, the figures in parentheses apply.
2 Includes all embryonic and larval stages and all juvenile forms of fish to 30-days following hatching.
3 N/A (Not Applicable).
4 All minima should be considered as instantaneous concentrations to be achieved at all times.

(16) Aquatic Life Standards apply to surface waters only and are based upon the analysis of samples following a "total recoverable" digestion procedure (Section 9.4, "Methods for Analysis of Water and Wastes", 1983, Environmental Monitoring and Support Laboratory, U.S. Environmental Protection Agency, EPA-600/4-79-020, or equivalent).

(17) Source of the criteria used to derive the standard:

PP = priority pollutant criteria
NPP = non-priority pollutant criteria
MCL = Maximum contaminate level from the drinking water regulations
SMCL =secondary maximum contaminate level
HA = health advisory all from EPA's "Drinking Water Standards and Health Advisories" (October 1996)
I = standard derived from data obtained from federal data sources available on the Internet.
NRWQC = National Recommended Water Quality Criteria

(18) The Narrative Standards are located in the Administrative Rules of Montana (ARM) 17.30.601 et seq. and ARM 17.30.1001 et seq.

(19) The Required Reporting Value (RRV) is the detection level that must be achieved in reporting surface water or ground water monitoring or compliance data to the department unless otherwise specified in a permit, approval or authorization issued by the department. The RRV is the Department's best determination of a level of analysis that can be achieved by the majority of commercial, university, or governmental laboratories using EPA approved methods or methods approved by the department.

(20) Applicable to surface waters only.

(21) Based on taste and odor thresholds given in EPA 822-f-97-008 December 1997.

(22) Trigger Values are used to determine if a given increase in the concentration of toxic parameters is significant or non-significant as per the non-degradation rules ARM 17.30.701 et seq. The acronym "N/A" means "not applicable".

(23) The concentration of iron must not reach values that interfere with the uses specified in the surface and ground water standards (17.30.601 et seq. and 17.30.1001 et seq.) The Secondary Maximum Contaminant Level of 300 micrograms per liter which is based on aesthetic properties such as taste, odor, and staining may be considered as guidance to determine the levels that will interfere with the specified uses.

(24) The concentration of manganese must not reach values that interfere with the uses specified in the surface and ground water standards (17.30.601 et seq. and 17.30.1001 et seq.). The Secondary Maximum Contaminant Level of 50 micrograms per liter which is based on aesthetic properties such as taste, odor, and staining may be considered as guidance to determine the levels that will interfere with the specified uses.

(25) CASRN is an acronym for the American Chemical Society's Chemical Abstracts Service Registry Number.

(26) The NIOSH RTECS number is a unique number used for identification in the National Institute for Occupational Safety and Health (NIOSH) Registry of Toxic Effects of Chemical Substances.

(27) SAX number in the format AAA123 is a unique number for identification of materials in the Dangerous Properties of Industrial Materials, authors N. Irving Sax and Richard J. Lewis, publisher Van Nostrand Reinhold.

(28) The sum of the concentrations of tralkoxydim and its breakdown products shall not exceed the standards listed. For a list of known breakdown products, see EPA memorandum "EFED's Section 3 Review for Tralkoxydim (Chemical #121000; Case # 060780; DP Barcodes 0234682, 0234752, 0238697, 0235723 & 0239519)," and the associated "Environmental Fate Assessment for Tralkoxydim."

(29) The Human Health water quality standard for Arsenic is as follows:
For surface water through January 22 2006 18 ug/L, Health Advisory based
For ground water through January 22 2006 20 ug/L, Health Advisory based
For surface water from **January 23 2006 10** ug/L, Maximum Contaminant Level based
For ground water from **January 23 2006 10** ug/L, Maximum Contaminant Level based

(30) Ground water human health standard is based on the relative potency for selected PAH compounds listed in Table 8 of the EPA "Provisional Guidance for Quantitative Risk Assessment of Polycyclic Aromatic Hydrocarbons" July 1993, EPA/600/R-93/089.