

**COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT**  
**WATER QUALITY CONTROL COMMISSION**

**5 CCR 1002-64**

**BIOSOLIDS REGULATION**

**REGULATION NO. 64**

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WATER QUALITY CONTROL COMMISSION**

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**REGULATION NO. 64**

**64.1 AUTHORITY**

These regulations are promulgated pursuant to the Colorado Water Quality Control Act, sections 25-8-101 through 25-8-703 C.R.S., (1989 Repl. Vol. 11A and 1993 Supp.). In particular, they are promulgated under sections 25-8-202, 25-8-205, 25-8-501, and 25-8-509 C.R.S., (1989 Repl. Vol. and 1993 Supp.).

**64.2 PURPOSE**

The purpose of these regulations is to establish requirements, prohibitions, standards and concentration limitations on the use of biosolids as a fertilizer and/or organic soil amendment in a manner so as to protect the public health and prevent the discharge of pollutants into state waters.

**64.3 APPLICABILITY**

These regulations apply to:

- A. any domestic wastewater treatment works, irrespective of whether the domestic wastewater treatment works is required to obtain a CDPS permit, when biosolids generated at the domestic wastewater treatment works are withdrawn for beneficial use, and
- B. any person treating, manipulating, or applying biosolids to land for beneficial purposes.

These regulations do not apply to the use or disposal of grit or screenings generated during primary treatment of domestic sewage in a wastewater treatment works, hazardous sewage sludge, grease (except grease removed in primary, secondary or advanced wastewater treatment processes and added to a biosolids treatment process), commercial or industrial sludges (regardless of whether or not combined with domestic sewage), domestic or industrial septage, or sludge generated during treatment of drinking water.

**64.4 SEVERABILITY**

The provisions of these regulations are severable, and if any provisions or the application of the provisions to any circumstances are held invalid, the application of such provision to other circumstances, and the remainder of these regulations shall not be affected thereby.

**64.5 MATERIALS INCORPORATED BY REFERENCE**

U.S. Environmental Protection Agency standards and test methods cited in these regulations are hereby incorporated by reference. The references herein are to the Code of Federal Regulations at 40 CFR Part 503 and are current as of February 8, 2010. Incorporation of this material does not include later amendments to, or editions of, the incorporated material. The Commission will need to adopt revisions to this regulation for conformance with any subsequent changes to the Federal Regulations.

All materials incorporated by reference may be examined at any state publication depository library. Requests for public inspection of materials incorporated by reference in this regulation should be made to the Colorado Department of Public Health and Environment, Water Quality Control Division, 4300 Cherry Creek Drive, South, Denver, Colorado, 80246-1530.

#### **64.6 VARIANCES**

The Division may grant a variance from any provision of these regulations in a particular case where it determines that the public health or water quality benefits that will be created by compliance with the subject provision do not bear a reasonable relationship to the costs required to achieve compliance, except that in no case shall the Division grant a variance such that any resultant requirement or standard is less stringent than required by federal regulation. Any such variance shall be reasonably consistent with the protection of public health and of water quality.

Any person who requests a variance from a provision of these regulations shall bear the burden of developing and supplying the Division with such information as the Division deems necessary to adequately demonstrate the existence of conditions which warrant issuance of a variance. A variance may be requested at any time. Any such request shall be made in writing. The Division shall notify the applicant of the adequacy of information contained within the applicants request within 45 days of receipt of the variance request. The Division shall either issue or deny a variance request within 90 days of receipt of a complete and adequate variance request. Any such variance issued by the Division shall be made in writing. No person shall be considered to have obtained a variance until said person is in receipt of the Division's written statement granting such variance. Any such written statement shall identify the provision of these regulations from which a variance has been awarded, and shall prescribe any requirements with which the recipient of the variance must comply in lieu of the provision for which a variance has been issued. The Division shall prescribe such requirements as are reasonably consistent with the protection of the public health and of water quality.

All variances awarded by the Division in any one month shall be reported to the Water Quality Control Commission at its subsequent regular meeting.

#### **64.7 FEES**

##### **A. Assessment of Fees and Billing**

- (1) A non-refundable fee of two dollars and forty cents (\$2.40) per dry ton of biosolids shall be assessed to generators whose biosolids are used for beneficial purposes. The Division will notify generators when adjustments are made to the fee schedule and the effective date for implementing the changes.
- (2) Preparers shall receive a notice from the Division of the annual fee schedule. This notice shall accompany the Division's Notice of Authorization for the Use and Distribution of Biosolids.
- (3) Payment shall be paid based on the actual amount of biosolids (dry weight basis) applied. Payments shall be based on the actual amount of biosolids (dry weight basis) applied in the previous reporting period covered in the annual report and must be remitted on or before May 19.
- (4) Payment by check shall be made out to the Colorado Department of Public Health and Environment Biosolids Management Program. All such payments received shall be transmitted to the state treasurer and shall be credited to the Biosolids Management Program Fund.

##### **B. Enforcement of Fee Payments**

- (1) Failure or refusal to make payments for the beneficial use of biosolids within the time frame specified in Section 64.7(A)(3)(a) of these regulations shall result in suspension and/or revocation of the Notice of Authorization for the Use and Distribution of Biosolids.
- (2) Action to suspend or revoke the Notice of Authorization for the Use and Distribution of Biosolids shall be taken by the Division if payment is not received following written notice sent by certified mail pursuant to Section 64.7(B)(3) of these regulations.
- (3) Formal notification of the suspension or revocation shall be sent to the generator by certified mail. The notice shall state:
  - (a) the effective date of the suspension or revocation;
  - (b) the basis for suspension or revocation; and
  - (c) the consequences of applying biosolids without the required Notice of Authorization for the Use and Distribution of Biosolids.

C. Appeals of Actions on Fees

- (1) All appeal and reviews will be conducted by the Water Quality Control Commission.
- (2) Water Quality Control Commission action on the appeal is considered final agency action.

**64.8 ENFORCEMENT**

Violations of these regulations shall be subject to enforcement action by the Division pursuant to Part 6 of the Act.

**64.9 DEFINITIONS**

The following definitions are applicable within the intent of these regulations:

- A. "ACT" means the Colorado Water Quality Control Act as from time to time amended, section 25-8-101 C.R.S., 1973, et seq.
- B. "AGRICULTURAL LAND" means land on which a food crop, a feed crop, or a fiber crop is grown on a scale larger than a family garden plot. Agricultural land may also include range land, forest land, and land used as pasture.
- C. "AGRICULTURAL USE" means the application of biosolids to land for use as a source of macro- or micronutrients, organic matter or other beneficial properties as a soil conditioner for the facilitation of vegetative growth.
- D. "AGRONOMIC RATE" means the rate at which biosolids are applied to land such that the amount of nitrogen required by the food crop, feed crop, fiber crop, cover crop or vegetation grown on the land is supplied over a defined growth period, and such that the amount of nitrogen in the biosolids which passes below the root zone of the crop or vegetation grown to groundwater is minimized. Agronomic rate shall be calculated in accordance with section 64.15(H) of this regulation.
- E. "ANNUAL BIOSOLIDS APPLICATION RATE" means the maximum amount of biosolids, on a dry weight basis, that can be applied to a unit area of land during a three hundred sixty-five (365) day period or during a single cropping cycle.

- F. "ANNUAL HIGH GROUNDWATER TABLE" means the highest elevation that groundwater reaches over a one year period.
- G. "ANNUAL POLLUTANT LOADING LIMIT" means the maximum amount of a pollutant that can be applied to a unit area of land during a three hundred sixty-five (365) day period as outlined in section 64.14(B)(2)(c)(ii), Table 4.
- H. "APPLICATION SITE" means all contiguous areas of a property intended for biosolids application.
- I. "APPLIER" means the person who places biosolids onto or into the soil till zone for beneficial use.
- J. "APPLY" means to place onto or into the soil till zone.
- K. "BENEFICIAL USE" means the use of the nutrients and/or organic matter in biosolids to act as a soil conditioner or fertilizer for the promotion of vegetative growth on land.
- L. "BIOSOLIDS" means the accumulated treated residual product resulting from a domestic wastewater treatment works. Biosolids does not include grit or screenings from a wastewater treatment works, commercial or industrial sludges (regardless of whether the sludges are combined with domestic sewage), sludge generated during treatment of drinking water, or domestic or industrial septage.
- M. "BIOSOLIDS MANAGEMENT PLAN" means a plan that describes biosolids production, treatment, storage, distribution and land application activities and the measures taken to ensure compliance with Federal, State and local regulatory requirements.
- N. "CUMULATIVE POLLUTANT LOADING RATE" means the maximum amount of an inorganic pollutant outlined in section 64.12(A), Table 2 that can be applied to a unit area of land.
- O. "DISTURBED LAND" means land from which vegetation, topsoil, or overburden has been removed, or land of marginal agricultural use or grazing capacity due to past use.
- P. "DIVISION" means the Colorado Department of Public Health and Environment, Water Quality Control Division.
- Q. "DOMESTIC WASTEWATER TREATMENT WORKS" means a system or facility for treating, neutralizing, stabilizing, or disposing of domestic wastewater which system or facility has a designed capacity to receive more than two thousand gallons of domestic wastewater per day. The term "domestic wastewater treatment works" also includes appurtenances to such system or facility, such as outfall sewers and pumping stations, and to equipment relating to such appurtenances. The term "domestic wastewater treatment works" does not include industrial wastewater treatment plants or complexes whose primary function is the treatment of industrial wastes, notwithstanding the fact that human wastes generated incidentally to the industrial processes are treated therein.
- R. "FEED CROPS" are crops produced primarily for consumption by animals.
- S. "FINAL PRODUCT" or "FINAL PRODUCT MATERIAL" means a finished soil amendment or fertilizer which is intended for beneficial use and which contains a biosolids component.
- T. "FOOD CROPS" are crops consumed by humans. These include, but are not limited to, grain, fruits, and vegetables.

- U. "HIGH POTENTIAL FOR PUBLIC EXPOSURE" means land that the public uses frequently including, but not limited to, disturbed land when such land is located in a heavily populated area (e.g. a construction site located within a city), public parks, ball fields, cemeteries, retail plant nurseries, golf courses, turf farms. Land with "high potential for public access" does not include land on which public access is controlled by fencing, signage or other means regardless of the location of such land.
- V. "LETTER OF INTENT FOR THE USE OR DISTRIBUTION OF BIOSOLIDS" means the written application for Division authorization to land apply biosolids or distribute or market biosolids to the public submitted by the biosolids preparer or applier per section 64.10(A).
- W. "LOW POTENTIAL FOR PUBLIC EXPOSURE" means sites subject to infrequent public use including, but not limited to, agricultural land, forest, or disturbed land located in a sparsely populated area (e.g. A strip mine located in a rural area).
- X. "MUNICIPALITY" means any regional commission, county, metropolitan district, sanitation district, water and sanitation district, water conservancy district, metropolitan sewage disposal district, service authority, city and county, Indian tribe or authorized Indian tribal organization, or any two or more of the above which are acting jointly in connection with a domestic wastewater treatment works.
- Y. "NON-FOOD CROP" means any crop not intended for direct human consumption including, but not limited to, crops cultivated for fiber, fuel, or feed crops.
- Z. "NOTICE OF AUTHORIZATION TO USE OR DISTRIBUTE BIOSOLIDS" means a biosolids permit issued by the Division pursuant to section 25-8-501 of the Act indicating the conformance of a proposed beneficial use of biosolids with the criteria contained in this regulation and containing such terms and conditions as are required per section 64.10(E).
- AA. "PERSON" means an individual, corporation, partnership, association, state, or political subdivision thereof, federal agency, state agency, municipality or commission.
- BB. "PREPARER" means either the person who generates biosolids during the treatment of domestic sewage in a domestic wastewater treatment works or the person who derives a final product material from biosolids.
- CC. "PUBLIC CONTACT SITE" means land which is available for specific uses by the public and, as such, has a potential for direct public contact when biosolids are applied to such a site.
- DD. "PUBLIC WATER SYSTEM" means a system for the provision of piped water, if such system has a minimum of 15 service connections or regularly serves an average of a minimum of 25 persons.
- EE. "RESTRICTED USE" means the use or distribution of biosolids for use on land with high potential for public exposure.
- FF. "RUNOFF" means precipitation (e.g. rainwater), leachate, or other liquid that drains overland on any part of a land surface and runs off of the land surface.
- GG. "STATE WATERS" means any and all surface and subsurface waters which are contained in or flow in or through Colorado, except waters in sewage systems, water in treatment works or disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed. State waters do not include runoff from drainages which are cultivated as a routine farming practice or from rangeland which supports a permanent vegetative cover before the runoff enters a permanent or intermittent surface water body or groundwater.

- HH. "STORE BIOSOLIDS" or "STORAGE OF BIOSOLIDS" means the placement of biosolids on land on which the biosolids remain for two years or less. This does not include the placement of biosolids on land for treatment (e.g. biosolids stabilization accomplished via long-term stockpiling).
- II "SITE CLOSURE" means the closing of a biosolids application site as outlined in section 64.10(I) of this regulation.
- JJ "SITE DEACTIVATION" means a specific applicer is no longer authorized to apply biosolids to a site; the site is still available for biosolids application by other applicers as outlined in section 64.10(H) of this regulation.
- KK. "SITE TRANSFER" means the transfer of an NOA to a new person as outlined in Section 64.10(J) of this regulation.
- LL. "TREAT BIOSOLIDS" or "TREATMENT OF BIOSOLIDS" means the preparation of biosolids for final use or distribution including, but is not limited to, thickening, stabilization, stockpiling, dewatering, and blending of biosolids from different sources or with other materials. This does not include storage of biosolids except as such storage is incidental to treatment.
- MM. "TREATMENT WORKS TREATING DOMESTIC SEWAGE" means a domestic wastewater treatment works or other sludge or biosolids handling facility, regardless of ownership, used in the storage, treatment, recycling or reclamation of domestic sewage or land application of biosolids.
- NN. "UNRESTRICTED USE" means the use or distribution of biosolids for lawns or home gardens use.
- OO. "WETLANDS" means those areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

**64.10 ADMINISTRATION**

- A. Letters of Intent for the Use and Distribution of Biosolids. Persons using or distributing biosolids shall submit a Letter of Intent for the Use and Distribution of Biosolids. Letters of Intent for the Use and Distribution of Biosolids shall be submitted to the Division and to the local health authority. A Letter of Intent for the Use and Distribution of Biosolids shall be submitted prior to the initial use or distribution of biosolids and shall be amended as necessary to comply with sections 64.10(1), (2) and (3) below. The contents of the Letter of Intent for the Use and Distribution of Biosolids shall include the following:
  - (1) Letters of Intent for the Use and Distribution of Biosolids which are submitted for the distribution of biosolids for unrestricted (lawn and home garden) use need only be submitted one time as long as the Biosolids Management Plan in (e) below remains substantially unchanged. The Letter of Intent shall include:
    - (a) Facility information including the facility name, address, legal contact and phone number.
    - (b) Information demonstrating compliance with the metals content criteria as described in section 64.12(A), Table 1 or Table 3 of these regulations.
    - (c) Information demonstrating compliance with the pathogen destruction criteria for Class A biosolids as described in section 64.12(B) of these regulations.

- (d) Information demonstrating compliance with one or more of the vector attraction reduction criteria as described in section 64.12(C)(3) through (10) of these regulations.
  - (e) A Biosolids Management Plan describing the distribution or marketing of biosolids to the public.
  - (f) Copies of labeling, information sheets, cautions or instructions for use required pursuant to section 64.14(B)(2) of these regulations which will accompany biosolids distributed to the public.
  - (g) A detailed description of materials (e.g. wood chips), if any, that are mixed, combined, blended or co-applied with the biosolids prior to, during or after treatment, and the associated ratio(s) of such material(s) to biosolids.
  - (h) Other information deemed by the Division as appropriate to evaluate potential human health and water quality impact of the proposed use.
- (2) Letters of Intent for the Use and Distribution of Biosolids which are submitted for the distribution of bagged or containerized biosolids for restricted use need only be submitted one time as long as the Biosolids Management Plan in (e) below remains substantially unchanged. The Letter of Intent shall include:
- (a) Facility information including the facility name, address, legal contact and phone number.
  - (b) Information demonstrating compliance with, at a minimum, the metals content criteria for Table 1 quality biosolids as described in section 64.12(A) of these regulations.
  - (c) Information demonstrating compliance with the pathogen destruction criteria for Class A biosolids as described in section 64.12(B) of these regulations.
  - (d) Information demonstrating compliance with one or more of the vector attraction reduction criteria as described in section 64.12(C)(3) through (10) of these regulations.
  - (e) A Biosolids Management Plan describing the distribution or marketing of biosolids to the public.
  - (f) Copies of labeling, information sheets, cautions or instructions for use required pursuant to section 64.14(B)(2) of these regulations which will accompany biosolids distributed to the public.
  - (g) A detailed description of materials (e.g.) wood chips, if any, that are mixed, combined, blended or co-applied with the biosolids prior to, during or after treatment, and the associated ratio(s) of such material(s) to biosolids.
  - (h) Other information deemed by the Division as appropriate to evaluate potential human health and water quality impact of the proposed use.
- (3) Letters of Intent for the Use and Distribution of Biosolids which are submitted for projects or programs involving application of biosolids to agricultural land or for reclamation of disturbed land must be submitted for each application site and need only be submitted



one time as long as the Biosolids Management Plan in (n) below remains substantially unchanged. The Letter of Intent shall include:

- (a) Facility information including the facility name, address, legal contact and phone number.
- (b) Site owner and operator information including the name, address, legal contact, proof of ownership, and the phone number of the site owner or the owner's legal representative.
- (c) Documentation that the site owner, or the owner's legal representative has been provided a copy of these regulations and has agreed to comply with the requirements of these regulations and to allow access to the site to perform the monitoring and analysis required by section 64.16 of these regulations.
  - (i) The documentation shall consist of either:
    - (A) where it is known through site research that biosolids have not been applied, a certification statement signed by the site owner, or the legal representative of the site owner, that the signatory has been provided a copy of these regulations or the applicable portions of these regulations, and has agreed to comply with the applicable requirements of these regulations, in particular the nitrogen restrictions of section 64.15(H), and to allow access to the site to perform the monitoring and analysis required by section 64.16 of these regulations, and that the site has not received biosolids application since January 1, 1986, or
    - (B) where it is known that biosolids have been applied, a certification statement signed by the site owner, or the legal representative of the site owner, that the signatory has been provided a copy of these regulations or the applicable portions of these regulations, and has agreed to comply with the applicable requirements of these regulations, in particular the nitrogen restrictions of section 64.15(H), and to allow access to the site to perform the monitoring and analysis required by section 64.16 of these regulations.
- (d) When the certification statement provided per paragraph (3)(c)(i)(B) above is that which is submitted and the biosolids source(s) to be applied to the site exceed the pollutant limits in section 64.12(A), Table 3, the Letter of Intent shall also include data quantifying loadings of cadmium, copper, lead, nickel and zinc which have occurred after January 1, 1986, and demonstrating that loadings of those metals to the site since that date do not exceed cumulative application limits for those parameters as defined in section 64.12(A), Table 2 of this regulation, and data quantifying loadings of arsenic, mercury, and selenium which have occurred after July 1993, and demonstrating that loadings of those metals to the site since that date do not exceed cumulative application limits for those parameters as defined in section 64.12(A).
- (e) Contractor information, if applicable, including the name, address, legal contact, and phone number of any contractor whose responsibilities include the transport, storage, treatment, or application of biosolids to the site, or monitoring of the biosolids or any characteristics of the site including soils, vegetation, groundwater, or surface water.

- (f) Information demonstrating compliance with, at a minimum, the metals content criteria for Table 1 biosolids as described in section 64.12(A), of these regulations.
- (g) Information demonstrating compliance with, at a minimum, the pathogen destruction criteria for Class B biosolids as described in section 64.12(B)(8) of these regulations.
- (h) Information demonstrating compliance with one or more of the vector attraction reduction criteria as described in section 64.12(C) of these regulations.
- (i) The quarter section(s), section(s), township(s) and range(s) or the latitude and longitude in which the site is located.
- (j) A USGS 7.5 or 15 minute map, or a copy of such map, indicating the boundaries of the site and delineating the areas within the site boundaries to which application of biosolids is proposed.
- (k) The results of soil monitoring as described in section 64.16(B) of this regulation demonstrating compliance with criteria addressing soil physical and chemical properties as described in section 64.16(B), Tables 9 and 10 of these regulations.
- (l) Natural Resource Conservation Services maps, or copies of such maps, demonstrating compliance with soil depth criteria as described in section 64.15(G)(2) of these regulations.
- (m) The results of groundwater depth evaluations demonstrating compliance with groundwater depth criteria as described in section 64.15(D) of these regulations.
- (n) A Biosolids Management Plan describing the application of biosolids to the site, the crop(s) cultivated, applicable site access restrictions and, if onsite storage of biosolids is anticipated, facts demonstrating compliance with the requirements of section 64.13 of these regulations.
- (o) A detailed description of materials, if any, that are mixed, combined, blended or co-applied with the biosolids prior to, during or after treatment, and the associated ratio(s) of such material(s) to biosolids.
- (p) Other information deemed by the Division as appropriate to evaluate potential human health and water quality impact of the proposed use.

B. Division Review. An applicant shall be notified not more than thirty (30) days after receipt of a Letter of Intent to Use or Distribute Biosolids if, and in what respects, the Letter of Intent for the Use and Distribution of Biosolids is incomplete. Upon the written agreement of the applicant, the review period may be extended to such duration is mutually agreed by the applicant and the Division.

C. Issuance of Notices of Authorization for the Use and Distribution of Biosolids. The Division shall either issue or deny the Notice of Authorization for the Use and Distribution of Biosolids within thirty (30) days of its determination that the Letter of Intent for the Use and Distribution of Biosolids is complete. The applicant shall be notified in writing upon denial of the Notice of Authorization for the Use and Distribution of Biosolids of such action and the reason(s) for such action.

- D. Appeal of Issuance or Denial of Notice of Authorization for the Use and Distribution of Biosolids. The applicant or any other person, potentially adversely affected or aggrieved by Division issuance or denial of Letters of Intent for the Use and Distribution of Biosolids, may submit a request, within thirty (30) days of the date of issuance or denial, to the Director, Water Quality Control Division, for an adjudicatory hearing.
- (1) Any such adjudicatory hearing shall be conducted pursuant to the requirements of sections 24-4-105 and 25-8-401, et seq C.R.S. The Colorado Water Quality Control Act, section 25-8-100, et seq C.R.S., the Procedural Regulations for all Proceedings before the Water Quality Control Commission and the Water Quality Control Division, Regulation No. 21, 5 CCR 1002-21, and the State Administrative Procedures Act, section 24-4-100, et seq C.R.S., shall be applicable to all hearings held pursuant to this section.
  - (2) Only issues of law or fact raised by the applicant or other person prior to an adjudicatory hearing may be raised at the adjudicatory hearing. The person requesting the adjudicatory hearing shall have the burden of proof in all hearings held pursuant to this section.
  - (3) The adjudicatory hearing shall be before an administrative law judge or hearing officer.
- E. Terms and Conditions of Notices of Authorization for the Use and Distribution of Biosolids. Notices of Authorization for the Use and Distribution of Biosolids issued by the Division shall contain such terms, limitations, and conditions as are deemed necessary by the Division to ensure compliance with the criteria contained in these regulations, with applicable water quality standards for surface or groundwater and with control regulations except for those Notices of Authorization for the Use and Distribution of Biosolids which contain terms, limitations and criteria and a schedule of compliance as determined by the Division. At a minimum, all Notices of Authorization for the Use and Distribution of Biosolids shall contain the following:
- (1) issuance date;
  - (2) terms for modification, revocation, or termination;
  - (3) biosolids monitoring requirements;
  - (4) soils monitoring requirements, if applicable;
  - (5) other monitoring requirements, such as vegetation, subsurface soil, groundwater, and surface water monitoring, as determined by the Division to be applicable;
  - (6) grazing and cropping restrictions, if applicable;
  - (7) reporting and recordkeeping requirements;
  - (8) labeling requirements, if applicable;
  - (9) public access restrictions, if applicable;
  - (10) a statement of applicable civil and criminal penalties; and
  - (11) a requirement to notify the Division of a site deactivation or a site closure as outlined in section 64.10(H) and (I) below.
- F. Notice of Authorization for the Use and Distribution of Biosolids - Duration. Except for terms and conditions incorporated into Colorado Discharge Permit System Regulations as authorized

pursuant to section 64.11 below, Notices of Authorization for the Use and Distribution of Biosolids may be issued by the Division for any period except that no Notice of Authorization for the Use and Distribution of Biosolids, or any permit which is issued by the Division may allow application of biosolids in exceedance of the cumulative application limits as described in section 64.12(A) Table 2 of this regulation.

- G. Notice of Authorization for the Use and Distribution of Biosolids Required. No person shall use biosolids, distribute biosolids for use, or cause biosolids to be used for any beneficial use unless a Notice of Authorization for the Use and Distribution of Biosolids has been issued by the Division to a treatment works treating domestic sewage for such use or distribution.
- H. Notice of Authorization for the Use and Distribution of Biosolids. Site Deactivation: Persons no longer applying biosolids to an authorized application site and who no longer intend on applying biosolids to that site shall submit to the Division in writing a request to deactivate the application site. The Division will terminate the Notice of Authorization for the Use and Distribution of Biosolids and will follow-up with a written confirmation. Authorized sites that have not been reported in the annual report in accordance with section 64.17(B)(2) may be deactivated by the Division. Note: a deactivated site is still available for biosolids application by other persons.
- I. Notice of Authorization for the Use and Distribution of Biosolids. Site Closure: Persons no longer applying biosolids to an authorized application site because: 1) the site has reached or exceeded the Cumulative Pollutant Loading Rates outlined in section 64.12(A), Table 2 of this regulation, or 2) biosolids application has ceased due to land-use changes e.g. proposed development, shall submit to the Division in writing a request to close the application site. The Division will terminate the Notice of Authorization for the Use and Distribution of Biosolids and will follow-up with a written confirmation. A closed site is no longer available for biosolids application by any person.
- J. Notice of Authorization for the Use and Distribution of Biosolids. Site Transfer: An NOA may be transferred to a new person from a person no longer applying biosolids to an authorized application site and who no longer intends on applying biosolids to that site. A signed transfer document showing the agreement between the parties shall be submitted to the Division. The Division will complete the transfer by sending a written confirmation. Note: The Transferor shall transfer all the information relating to biosolids application for the site to the new persons.

**64.11 RESERVED**

**64.12 CLASSIFICATION AND USE OF BIOSOLIDS**

**A. Metals Based Classification of Biosolids.**

- (1) Criteria for metals based classification of biosolids shall be as defined in Table 1 and Table 3. Determination of compliance with Table 1 or Table 3 criteria shall be demonstrated by analysis of the final product material for all of the parameters identified in Table 1 and Table 3. Biosolids classified as Table 1 – Ceiling Concentration Limits - are subject to the Cumulative Pollutant Loading Rates outlined in Table 2 below:

<b>Table 1 – Ceiling Concentration Limits</b>	
<b><i>Pollutant</i></b>	<b>mg/kg, dry weight basis</b>
Arsenic	75
Cadmium	85

Copper	4300
Lead	840
Mercury	57
Molybdenum	75
Nickel	420
Selenium	100 <sup>1</sup>
Zinc	7500

<b>Table 2 – Cumulative Pollutant Loading Rates</b>	
Pollutant	kg/ha (lbs/ac)
Arsenic	41 (37)
Cadmium	39 (35)
Copper	1500 (1339)
Lead	300 (286)
Mercury	17 (17)
Molybdenum	
Nickel	420 (375)
Selenium	100 (89)
Zinc	2800 (2499)

<b>Table 3 – Pollutant Concentration Limits</b>	
Pollutant	Mg/kg, dry weight basis
Arsenic	41
Cadmium	39
Copper	1500
Lead	300

Mercury	17
Molybdenum	
Nickel	420
Selenium	100
Zinc	2800

<sup>1</sup> As a result of a ruling by the United States Court of Appeals for the District of Columbia Circuit on March 3, 1998, the selenium limit set forth in Table 1 is stayed with respect to the City of Pueblo's land application of biosolids at public contact sites with low potential for child occupancy.

- (2) Biosolids which exceed the numeric criteria for Table 1 biosolids shall not be applied to land for beneficial use except as may be allowed pursuant to the Colorado Solid Waste Disposal Sites and Facilities Regulations.
- (3) Compliance with the numeric criteria contained in Table 1 or Table 3 shall be determined as follows:
  - (a) The arithmetic average of all samples collected within a given calendar month and analyzed for a given parameter shall not exceed the numeric limit for Table 3 biosolids for any parameter if the biosolids are to be considered to be within Table 3 Pollutant Concentration Limits (PC).
  - (b) The concentration for any given parameter for which criteria are identified shall not exceed the numeric limit for Table 1 biosolids in any sample if the biosolids are to be considered below Table 1 Ceiling Concentration Limits.
  - (c) The initial determination of biosolids grade shall be as demonstrated by the arithmetic average of no less than three composite biosolids samples.
  - (d) For reclassification of Table 1 quality as Table 3 quality biosolids compliance with the Table 3 criteria shall be demonstrated by the arithmetic average of no less than seven daily composite biosolids samples.
  - (e) For reclassification of biosolids which had previously exceeded the Table 1 numeric criteria, compliance with the Table 1 criteria shall be demonstrated by the arithmetic average of no less than seven daily composite biosolids samples.
  - (f) All sampling of biosolids for the purpose of demonstrating compliance with the criteria contained in Table 1 or Table 3 shall be performed in accordance with the requirements of section 64.16(A)(6).
  - (g) If at any time the arithmetic average of all samples collected within a given calendar month and analyzed for a given parameter exceeds the Table 3 Pollutant Concentration Limits, the biosolids shall not longer be considered within Table 3 Limits and all applicable requirements for Table 1 biosolids, or the requirements of paragraph 64.12(A)(2) shall apply. Reclassification of such biosolids shall be in accordance with the requirements of 64.12(A)(3)(d) above.
  - (h) If at any time the concentration for any given parameter for which numeric criteria are identified exceeds the Table 1 Ceiling Concentration Limits, the biosolids shall no longer be considered within Table 1 limits and the requirements of

paragraph 64.12(A)(2) shall apply. Reclassification of such biosolids shall be in accordance with the requirements of 64.12(A)(3)(e) above.

B. Pathogen Destruction Criteria.

- (1) The requirement in paragraph (2) of this section and the requirements of any one of paragraphs (3) through (7) of this section shall be met for biosolids to be classified as Class A with respect to pathogens.
- (2) The Class A pathogen requirements in paragraphs (3) through (7) shall be met either prior to meeting or at the same time the vector attraction reduction requirements in section 64.12(C)(6) through (10) are met, except in those instances when the vector attraction reduction requirements in paragraphs 64.12(C)(11) through 64.12(C)(13), are those which are met.
- (3) Class A - Alternative 1
  - (a) Either the density of fecal coliform in the biosolids shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the biosolids shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the biosolids are used or distributed; or at the time the final product material derived from biosolids is prepared to meet the requirements in section 64.14 of these regulations, and
  - (b) The temperature of the biosolids that is used or distributed shall be maintained at a specific value for a period of time as determined using the following procedures:
    - (i) When the percent solids of the biosolids is seven percent or higher, the temperature of the biosolids shall be 50 degrees Celsius or higher; the time period shall be 20 minutes or longer; and the temperature and time period shall be determined using the following equation, except when small particles of biosolids are heated by either warmed gases or an immiscible liquid.
$$D = \frac{131,700,000}{10^{0.1400t}}$$
Where D = time in days, and  
t = temperature in degrees Celsius.
    - (ii) When the percent solids of the biosolids is seven percent or higher and small particles of biosolids are heated by either warmed gases or an immiscible liquid, the temperature of the biosolids shall be 50 degrees Celsius or higher; the time period shall be 15 seconds or longer; and the temperature and time period shall be determined using the equation specified in paragraph (3)(b)(i) of this section.
    - (iii) When the percent solids of the biosolids is less than seven percent and the time period is at least 15 seconds, but less than 30 minutes, the temperature and time period shall be determined using the equation specified in paragraph (3)(b)(i) of this section.
    - (iv) When the percent solids of the biosolids is less than seven percent; the temperature of the biosolids is 50 degrees Celsius or higher; and the time period is 30 minutes or longer, the temperature and time period shall be determined using the following equation:

$$D = \frac{50,070,000}{10^{0.1400t}} \quad \text{Where } D = \text{time in days, and} \\ t = \text{temperature in degrees Celsius.}$$

(4) Class A - Alternative 2

- (a) Either the density of fecal coliform in the biosolids shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in the biosolids shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the biosolids are used or distributed, and
- (b) at the time the final product material derived from biosolids is prepared to meet the requirements in section 64.14 of these regulations
  - (i) the pH of the biosolids that is used or distributed shall be raised to above 12 s.u. and shall remain above 12 s.u. for 72 hours, and
  - (ii) the temperature of the biosolids shall be above 52 degrees Celsius for 12 hours or longer during the period that the pH of the biosolids is above 12 s.u., and
  - (iii) at the end of the 72 hour period during which the pH of the biosolids is above 12 s.u., the biosolids shall be air dried to achieve a percent solids in the biosolids of greater than 50 percent.

(5) Class A - Alternative 3

- (a) Either the density of fecal coliform in the biosolids shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis), or the density of Salmonella sp. bacteria in biosolids shall be less than three Most Probable Number per four grams of total solids (dry weight basis), at the time the biosolids are used or distributed; or at the time the final product material derived from biosolids is prepared to meet the requirements in section 64.14 of these regulations, and
- (b) the biosolids shall be analyzed prior to pathogen treatment to determine whether the biosolids contains enteric viruses.
  - (i) When the density of enteric viruses in the biosolids prior to pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis), the biosolids is considered Class A with respect to enteric viruses until the next monitoring episode for the biosolids.
  - (ii) When the density of enteric viruses in the biosolids prior to pathogen treatment is equal to or greater than one Plaque-forming Unit per four grams of total solids (dry weight basis), the biosolids is considered Class A with respect to enteric viruses when the density of enteric viruses in the biosolids after pathogen treatment is less than one Plaque-forming Unit per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the biosolids that meets the enteric virus density requirement are documented.
  - (iii) After the enteric virus reduction in paragraph (ii) of this subsection is demonstrated for the pathogen treatment process, the biosolids



continues to be considered Class A with respect to enteric viruses when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in paragraph (ii) of this subsection.

- (c) The biosolids shall be analyzed prior to pathogen treatment to determine whether the sewage sludge contains viable helminth ova.
  - (i) When the density of viable helminth ova in the biosolids prior to pathogen treatment is less than one per four grams of total solids (dry weight basis), the biosolids is considered Class A with respect to viable helminth ova until the next monitoring episode for the biosolids.
  - (ii) When the density of viable helminth ova in the biosolids prior to pathogen treatment is equal to or greater than one per four grams of total solids (dry weight basis), the biosolids is considered Class A with respect to viable helminth ova when the density of viable helminth ova in the biosolids after pathogen treatment is less than one per four grams of total solids (dry weight basis) and when the values or ranges of values for the operating parameters for the pathogen treatment process that produces the biosolids that meets the viable helminth ova density requirement are documented.
  - (iii) After the viable helminth ova reduction in paragraph (ii) of this subsection is demonstrated for the pathogen treatment process, the biosolids continue to be considered Class A with respect to viable helminth ova when the values for the pathogen treatment process operating parameters are consistent with the values or ranges of values documented in (ii) of this subsection.

(6) Class A - Alternative 4

- (a) Either the density of fecal coliform in the biosolids shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis) or the density of Salmonella sp. bacteria in the biosolids shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the biosolids are used or distributed; or at the time the final product material derived from biosolids is prepared to meet the requirements in section 64.14 of these regulations, and
  - (i) The density of enteric viruses in the biosolids shall be less than one Plaque-forming Unit per four grams of total solids (dry weight basis) at the time the biosolids are used or distributed; or at the time the final product material derived from biosolids is prepared to meet the requirements in section 64.14 of these regulations, and
  - (ii) the density of viable helminth ova in the biosolids shall be less than one per four grams of total solids (dry weight basis) at the time the biosolids are used or distributed; or at the time the final product material derived from biosolids is prepared to meet the requirements in section 64.14 of these regulations.

(7) Class A - Alternative 5

- (a) Either the density of fecal coliform in the biosolids shall be less than 1000 Most Probable Number per gram of total solids (dry weight basis) or the density of Salmonella, sp. bacteria in the biosolids shall be less than three Most Probable Number per four grams of total solids (dry weight basis) at the time the biosolids are used or distributed; or at the time the final product material derived from biosolids is prepared to meet the requirements in section 64.14 of these regulations, and
- (b) Biosolids that are used or distributed shall be treated in one of the Processes to Further Reduce Pathogens described as follows:
  - (i) Composting - Using either the within-vessel composting method or the static aerated pile composting method, the temperature of the biosolids compost is maintained at 55 degrees Celsius or higher for three days.  
  
Using the windrow composting method, the temperature of the biosolids compost is maintained at 55 degrees or higher for 15 days or longer. During the period when the compost is maintained at 55 degrees or higher, there shall be a minimum of five turnings of the windrow.
  - (ii) Heat drying - Biosolids are dried by direct or indirect contact with hot gases to reduce the moisture content of the biosolids to 10 percent or lower. Either the temperature of the biosolids particles exceeds 80 degrees Celsius or the wet bulb temperature of the gas in contact with the biosolids as the biosolids leaves the dryer exceeds 80 degrees Celsius.
  - (iii) Heat treatment - Liquid biosolids are heated to a temperature of 180 degrees Celsius or higher for 30 minutes.
  - (iv) Thermophilic aerobic digestion - Liquid biosolids are agitated with air or oxygen to maintain aerobic conditions and the mean cell residence time of the biosolids is 10 days at 55 to 60 degrees Celsius.
  - (v) Beta ray irradiation - Biosolids are irradiated with beta rays from an accelerator at dosages of at least 1.0 megarad at room temperature (ca. 20 degrees Celsius).
  - (vi) Gamma ray irradiation - Biosolids are irradiated with gamma rays from certain isotopes, such as Cobalt 60 and Cesium 137, at room temperature (ca. 20 degrees Celsius).
  - (vii) Pasteurization - The temperature of the biosolids is maintained at 70 degrees Celsius or higher for 30 minutes or longer.
  - (viii) Any other method of biosolids treatment which is certified as a Process to Further Reduce Pathogens by the U. S. Environmental Protection Agency, Region VIII, or, after assumption of delegation by the State, which is certified as such by the Division.
- (8) The requirement in either of paragraphs (a), or (b) of this subsection shall be met for biosolids to be classified as Class B with respect to pathogens.
  - (a) Seven individual samples of the biosolids shall be collected at the time the biosolids are used or distributed or at the time the final product material derived

from biosolids is prepared to meet the requirements in section 64.15 of these regulations. The geometric mean of the density of fecal coliform in the samples collected shall be less than either 2,000,000 Most Probable Number per gram of total solids (dry weight basis) or 2,000,000 Colony Forming Units per gram of total solids (dry weight basis), or

- (b) Biosolids that are used or distributed shall be treated in one of the Processes to Significantly Reduce Pathogens described as follows:
  - (i) Aerobic digestion - Biosolids are agitated with air or oxygen to maintain aerobic conditions for a mean cell residence time at a temperature or temperatures within a time-temperature function having as end points 40 days at 20 degrees Celsius and no less than 60 days at 15 degrees Celsius.
  - (ii) Air drying - Biosolids are dried on sand beds or on paved or unpaved basins. The biosolids dries for a minimum of three months. During two of the three months, the ambient average daily temperature is above zero degrees Celsius.
  - (iii) Anaerobic digestion - Biosolids are treated in the absence of air for a mean cell residence time at a temperature or temperatures within a time-temperature function having as end points 15 days at 35 to 55 degrees Celsius and no less than 60 days at 20 degrees Celsius.
  - (iv) Composting - Using either the within-vessel, static aerated pile, or windrow composting methods, the temperature of the biosolids is raised to 40 degrees Celsius or higher and remains at 40 degrees Celsius or higher for five days. For four hours during the five days, the temperature in the compost pile exceeds 55 degrees Celsius.
  - (v) Lime stabilization - Sufficient lime is added to the biosolids to raise the pH of the sewage sludge to 12 after two hours of contact.
  - (vi) Any other method of biosolids treatment which is certified as a Process to Significantly Reduce Pathogens by the U. S. Environmental Protection Agency, Region VIII, or, after assumption of delegation by the State, which is certified as such by the Division.
- (9) The site restrictions in section 64.15 of these regulations shall be met when biosolids that meets the Class B pathogen requirements in paragraphs (8)(a) or (8)(b) of this subsection is applied to the land.

C. Vector Attraction Reduction (Biosolids Stability) Criteria.

- (1) One of the biosolids stability requirements in paragraphs (3) through (13) shall be met when biosolids are applied to agricultural or disturbed land, or to a public contact site.
- (2) One of the biosolids stability requirements in paragraphs (3) through (10) shall be met when biosolids are distributed to the public for use.
- (3) The mass of volatile solids in the biosolids shall be reduced by a minimum of 38 percent.
- (4) When the 38 percent volatile solids reduction requirement in paragraph (3) cannot be met for anaerobically digested biosolids, biosolids stability can be demonstrated by digesting

a portion of the previously digested biosolids anaerobically in the laboratory in a bench-scale unit for 40 additional days at a temperature between 30 and 37 degrees Celsius. When at the end of the 40 days, the volatile solids in the biosolids at the beginning of that period is reduced by less than 17 percent, biosolids stability is achieved.

- (5) When the 38 percent volatile solids reduction requirement in paragraph (3) cannot be met for aerobically digested biosolids, biosolids stability can be demonstrated by digesting a portion of the previously digested biosolids that has a percent solids of two percent or less aerobically in the laboratory in a bench-scale unit for 30 additional days at 20 degrees Celsius. When at the end of the 30 days, the volatile solids in the biosolids at the beginning of that period is reduced by less than 15 percent, biosolids stability is achieved.
- (6) The specific oxygen uptake rate (SOUR) for biosolids treated in an aerobic process shall be equal to or less than 1.5 milligrams of oxygen per hour per gram of total solids (dry weight basis) at a temperature of 20 degrees Celsius.
- (7) Biosolids shall be treated in an aerobic process for 14 days or longer. During that time, the temperature of the biosolids shall be higher than 40 degrees Celsius and the average temperature of the biosolids shall be higher than 45 degrees Celsius.
- (8) The pH of biosolids shall be raised to 12 or higher by alkaline addition and, without the addition of more alkaline material, shall remain at 12 or higher for two hours and then at 11.5 or higher for an additional 22 hours.
- (9) The percent solids of biosolids that does not contain unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 75 percent based on the moisture content and total solids prior to mixing with other materials.
- (10) The percent solids of biosolids that contains unstabilized solids generated in a primary wastewater treatment process shall be equal to or greater than 90 percent based on the moisture content and total solids prior to mixing with other materials.
- (11) Biosolids shall be subsurface injected, and
  - (a) No significant amount of the biosolids shall be present on the land surface within one hour after the biosolids are injected.
  - (b) When the biosolids which are subsurface injected are considered to be Class A with respect to pathogens, the biosolids shall be injected within eight hours after being discharged from the pathogen treatment process.
- (12) Biosolids which are surface applied shall be incorporated into the soil within six hours after application to or placement on the land.
- (13) When biosolids that are incorporated into the soil are considered to be Class A with respect to pathogens, the biosolids shall be applied to or placed on the land within eight hours after being discharged from the pathogen treatment process.

#### **64.13 STORAGE OF BIOSOLIDS**

- A. Notice of Authorization for the Use and Distribution of Biosolids Required. No person shall store biosolids unless a Notice of Authorization for the Use and Distribution of Biosolids has been issued by the Division pursuant to section 64.10 for such storage.

- B. Exemptions. The requirements of this section shall not apply to the following:
- (1) Process components of a domestic wastewater treatment facility which is subject to a CDPS permit issued pursuant to section 25-8-501 of the Act, C.R.S., 1973, as amended, or to the process components of a domestic wastewater treatment facility site approval and plans and specifications approval pursuant to section 25-8-701 of the Act, C.R.S., 1973, as amended.
  - (2) Components of a solid waste disposal site or facility which has received a Certificate of Designation pursuant to the Solid Wastes Disposal Sites and Facilities Act, C.R.S. 30-20-100.5 et seq., 1973 (as amended).
  - (3) Components of an Individual Sewage Disposal System which is subject to requirements adopted pursuant to the Individual Sewage Disposal Systems Act, C.R.S. 25-10-101 et seq., 1975, (as amended).
  - (4) Facilities which are intended for the offloading of biosolids from vehicles transporting biosolids to an application site and subsequent loading of biosolids into application equipment, notwithstanding any incidental spillage or placement on the land during transfer. Such facilities shall be bermed or otherwise protected or managed so as to prevent movement of spillage or runoff from the transfer area off of the permitted site.
  - (5) Tankage. Such facilities shall be bermed or otherwise protected so as to prevent movement of spillage or runoff from the storage area off of the permitted site.
- C. General Requirements for Storage. No person shall use any facility for biosolids storage unless the facility, and the biosolids to be stored therein, meet the following requirements:
- (1) At the time biosolids are placed in the storage facility, all biosolids which are stored shall meet, at a minimum, Class B pathogen destruction criteria as described in section 64.12(B) of these regulations.
  - (2) At the time biosolids are placed in the storage facility, all biosolids which are stored shall meet, at a minimum, one of the vector attraction reduction criteria as described in paragraphs 64.12(C)(3) through (10) of these regulations.
  - (3) Biosolids shall not be stored for a period of more than two years before removed for use or distributed. A storage facility may operate for an indefinite period such that the maximum retention time for biosolids stored within the facility does not exceed two years.
- D. Storage Requirements for Biosolids of Less Than Fourteen Percent Solids Content. Facilities for the storage of biosolids which have a solids content of less than fourteen percent at the time they are placed in the storage facility shall comply with the Waste Impoundment criteria described in section 64.9 of the Regulations pertaining to Solid Waste Disposal Sites and Facilities (6 CCR 1007-2).
- E. Storage Requirements for Biosolids of Fourteen Percent or Greater Solids Content. Facilities for the storage of biosolids which have a solids content of fourteen percent or greater at the time they are placed in the storage facility be operated in a manner which will prevent windblown biosolids from escaping the storage facility, and shall comply with either of the following requirements:
- (1) The bottom of the biosolids storage facilities shall consist of an impermeable material or shall be constructed with an underdrain system and the facilities shall be bermed or otherwise protected so as to prevent movement of spillage or runoff from the storage facilities off of the permitted site. For purposes of this section 64.13, the term

"impermeable material" means any synthetic or naturally occurring material which will allow leachate to seep no more than 1/16 of an inch per day through surrounding or underlying material, or

- (2) The storage facilities shall be covered and either shall be bermed or otherwise protected so as to prevent movement of spillage or runoff from the storage facilities off of the permitted site, or runoff from the cover shall be collected and directed away from the storage facilities.

F. Short Term Storage. Notwithstanding the requirements of paragraph 64.13(E) above, facilities for the storage of biosolids of fourteen percent or greater solids content for a period of fourteen days or less, or temporary storage for a longer period upon site-specific Division approval, shall be operated in a manner which will prevent windblown biosolids from escaping the storage facility and shall be bermed or otherwise protected so as to prevent movement of spillage or runoff from the storage facilities off of the permitted site. If approval is sought for a period in excess of two weeks the applicant shall also be required to address the potential need for control of leachate generated as a result of such storage.

#### **64.14 DISTRIBUTION AND MARKETING OF BIOSOLIDS**

##### A. Distribution of Biosolids for Unrestricted (Lawn and Home Garden) Use

- (1) No person shall distribute or market biosolids to the public for unrestricted use unless a Notice of Authorization for the Use and Distribution of Biosolids has been issued by the Division pursuant to section 64.10 of these regulations for public distribution of biosolids, and
  - (a) the biosolids meet the Table 3 Pollutant Concentration Limits with respect to metals as defined in section 64.12(A), of these regulations, and
  - (b) the biosolids meet the criteria for Class A with respect to pathogen destruction as defined in section 64.12(B) of these regulations, and meet at least one of the vector attraction reduction criteria as defined in paragraphs 64.12(C)(3) through (10) of these regulations at the point at which the biosolids are distributed or marketed to the public, and
- (2) When biosolids are distributed or marketed to the public for unrestricted use, information shall be made available to the public, in the form of labeling, information sheets, and written cautions or written instructions for use. At a minimum such information shall include the following:
  - (a) the name and address of the person who prepared the biosolids which are sold or given away, and
  - (b) the typical concentration of plant nutrients on a dry weight percentage basis including, at a minimum total nitrogen, total phosphorus, and total potassium in the biosolids.

##### B. Distribution of Biosolids for Restricted Use

- (1) No person shall distribute or market bagged or containerized biosolids to the public for restricted use unless a Notice of Authorization for the Use and Distribution of Biosolids has been issued by the Division pursuant to section 64.10 of these regulations for public distribution of biosolids, and

- (a) the biosolids meet, at a minimum, Table 1 Pollutant Concentration Limits with respect to metals as defined in section 64.12(A), of these regulations, and
  - (b) the biosolids meet the criteria for Class A with respect to pathogen destruction as defined in section 64.12(B) of this regulation, and meet at least one of the vector attraction reduction criteria as defined in paragraphs 64.12(C)(3) through (10) of these regulations at the point at which the biosolids are distributed or marketed to the public, and
- (2) When biosolids which are distributed or marketed to the public for restricted use are considered to be Table 1 limits with respect to metals, information shall be made available to the public, in the form of labeling, information sheets, written cautions or written instructions for use. At a minimum such information shall include the following:
- (a) the name and address of the person who prepared the biosolids which are sold or given away, and
  - (b) the typical concentration of plant nutrients on a dry weight percentage basis including, at a minimum, total available nitrogen, total phosphorus, and total potassium in the biosolids, and
  - (c) the maximum allowable annual biosolids application rate as calculated based upon the Table 4 Annual Pollutant Loading Rate and based upon either of the following:
    - (i) The maximum allowable annual biosolids application rate shall be calculated based upon the most recent twelve months analysis of the biosolids for the parameters for which numeric limitations are identified in Table 4. Labeling, information sheets, written cautions or written instructions for use shall identify the maximum allowable annual biosolids application rate for the biosolids based upon the maximum reported values for the twelve month period and such advisory information shall be updated on a monthly basis, or
    - (ii) the maximum allowable annual biosolids application rate shall be calculated based upon a value representing the arithmetic average of a minimum of six analyses of the biosolids for the parameters for which numeric limitations are identified in Table 4 plus one standard deviation. Labeling, information sheets, written cautions or written instructions for use which identify the maximum allowable annual application rate for the biosolids shall be updated on a semi-annual basis.

<b>Table 4 – Annual Pollutant Loading Rate Limits</b>	
<b><i>Pollutant</i></b>	<b>kg/ha (lbs/ac)</b>
Arsenic	2.00 (1.79)
Cadmium	1.90 (1.70)
Copper	75.00 (66.94)

Lead	15.00 (13.39)
Mercury	0.85 (0.76)
Molybdenum	
Nickel	21.00 (18.74)
Selenium	5.00 (4.46)
Zinc	140.00 (124.96)

**64.15 USE OF BIOSOLIDS FOR AGRICULTURE AND RECLAMATION**

A. Land Application of Biosolids.

- (1) No person shall use biosolids, distribute biosolids for use, or cause biosolids to be used for any beneficial use unless a Notice of Authorization for the Use and Distribution of Biosolids has been issued by the Division pursuant to section 64.10 of these regulations for such use or distribution.
- (2) No person shall apply biosolids to land unless:
  - (a) the biosolids meet at a minimum the Table 1 Ceiling Concentration Limits with respect to metals as defined in section 64.12(A), of this regulation, and
  - (b) the biosolids either:
    - (i) meet the criteria for Class A with respect to pathogen destruction as defined in section 64.12(B) of these regulations, and meet at least one of the vector attraction reduction criteria as defined in paragraphs 64.12(C)(3) through (13) of these regulations when the biosolids are applied to a public contact site, or
    - (ii) the biosolids meet the criteria for Class B with respect to pathogen destruction as defined in section 64.12(B) of these regulations, and meet at least one of the vector attraction reduction criteria as defined in paragraphs 64.12(C)(3) through (13) of these regulations when the biosolids are applied to land for agricultural use or to disturbed land for reclamation, and
- (3) No person shall land apply biosolids for any beneficial use if such application is likely to adversely affect a threatened or endangered species listed under section 64.4 of the Endangered Species Act, or the designated critical habitat of any species so listed.
- (4) Biosolids which do not meet the Table 3 Pollutant Concentration Limits with respect to metals as defined in section 64.12(A), of these regulations, and which are applied to land shall be subject to the Table 2 Cumulative Pollutant Loading Limits.
- (5) Compliance with cumulative pollutant loading limits shall be documented by the permit Applicant. Documentation shall consist of either:



- (a) a certification statement signed by the site owner, or the legal representative of the site owner, that the site has not received sludge application since January 1, 1986, or
- (b) data quantifying loadings of cadmium, copper, lead, nickel and zinc which have occurred after January 1, 1986, and demonstrating that loadings of those metals to the site since that date do not exceed cumulative application limits for those parameters as defined in Table 2, and data quantifying loadings of arsenic, mercury, and selenium which have occurred after July 19, 1993, and demonstrating that loadings of those metals to the site since that date do not exceed cumulative application limits for those parameters as defined in Table 2.

B. Notification Requirements for Preparers and Appliers.

- (1) Any person who prepares biosolids that will be applied by another to agricultural land or used by another for reclamation of disturbed land shall provide the following to the biosolids applier:
  - (a) written notification of the total nitrogen concentration, on a dry weight basis, of the biosolids; and
  - (b) notice of and necessary information to comply with the applicable requirements of these regulations.
- (2) The biosolids applier shall provide written notice to the Division and the local health authority when biosolids are applied to agricultural land or used for reclamation of disturbed land. Such notice shall be provided prior to land application of biosolids by the preparer or the applier and shall occur at a minimum of one time per year. Notification shall include the following:
  - (a) the location, by either latitude and longitude or quarter-section, township, range, of each land application or reclamation use site;
  - (b) the approximate time period the biosolids will be applied to the site;
  - (c) the name, address, telephone number, and permit number (if appropriate) for the biosolids preparer; and
  - (d) the name, address, telephone number, and permit number (if appropriate) for the person who will land apply or use the biosolids for reclamation.
- (3) Biosolids preparers shall ensure that the applicable requirements of these regulations are met when the biosolids are applied to agricultural land or used for reclamation of disturbed land.
- (4) Any person who produces biosolids in Colorado, which biosolids are land applied to agricultural land or used for reclamation of disturbed land in another State, shall provide written notice to the permitting authority for the State in which the biosolids are proposed to be so used or land applied prior to commencement of such activities.

C. Application Near State Waters.

- (1) No person shall apply biosolids for beneficial use on land located upgradient, and within one linear mile, of a point at which surface waters are diverted for use in a public water system, unless either:
- (a) Runoff from within the application site does not drain into the body of water which is diverted, or
  - (b) A site operating plan is prepared, and submitted with the Letter of Intent for the Use and Distribution of Biosolids which describes measures which prevent runoff during any storm event of greater frequency than the 10 year 24 hour storm event from the application site into the body of water which is diverted.
- (2) No person shall apply biosolids for beneficial use on land located:
- (a) Upgradient and within 300 feet of a reservoir classified for Class I Recreational Use by the Water Quality Control Commission,
  - (b) Within 200 feet of any body of surface water, including intermittent streambeds when standing or running water is present in the streambed, unless application is made by either subsurface injection, or by surface application which is followed by immediate incorporation, or a site operating plan is prepared, and submitted with the Letter of Intent to Use or Distribute Biosolids which describes measures which prevent runoff from the application site into the body of water,
  - (c) Within 50 feet of any water body or perennial streambed, or any intermittent streambed when standing or running water is present in the streambed,
  - (d) Within 33 feet of any dry streambed. For purposes of this section land which, as the result of typical agricultural practice, is under cultivation shall not be considered to be a dry streambed regardless of whether it serves as a watercourse during significant precipitation events.

<b>TABLE 5 – APPLICATION NEAR STATE WATERS</b>		
No application within 1 linear mile upgradient from a point at which surface water is diverted for use in a public water system, unless the requirements in section 64.15(C)(1)(a) or (b) are met.		
No application upgradient and within 300 feet of a reservoir classified for Class 1 Recreational Use by the Water Quality Control Commission (generally, lakes and streams frequently used for swimming, rafting, kayaking, tubing, windsurfing and water-skiing – activities where ingestion of small quantities of water is likely to occur).		
<b>Application Method</b>	<b>Incorporated or Injected</b>	<b>Surface</b>
Any surface water channel including intermittent streambeds when water is present	50 Feet	200 Feet
Any surface water channel including intermittent streambeds when water is not present	33 Feet	33 Feet
Agricultural land under cultivation shall not be considered a dry streambed regardless of whether it serves as a watercourse during significant precipitation events.		

- (3) No person shall apply biosolids for beneficial use on land which is saturated, or on land where ponding is occurring.
- (4) No person shall apply biosolids for beneficial use on land which is either:
  - (a) within 100 feet of a private domestic water supply well or within 300 feet of a community supply well when use is made to agricultural land, or
  - (b) within 300 feet of a private domestic water supply well or within 1,500 feet upgradient of a community supply well when use is made for reclamation of disturbed land.

D. Groundwater.

- (1) No person shall apply biosolids for beneficial use on land which is underlain by groundwater where the annual high groundwater table is within five feet of the surface of the land. Determination of the annual high groundwater table shall be made as follows:
  - (a) Groundwater depth determinations based upon direct observation using piezometric tubes or other groundwater depth monitoring devices shall be the preferred method of groundwater depth determination. The Division may require installation of such devices in instances where other information which is developed does not conclusively demonstrate adequate depth to groundwater, alternately,
  - (b) U.S.D.A. Soil Survey maps of the application site, and/or
  - (c) Well completion records may be considered as documentation, either singly or in combination with other supporting documentation, in instances where surface topography, vegetation, or lack of seasonal ponding suggest that adequate depth to groundwater exists.

E. Slopes and Application Requirements.

- (1) No person shall apply biosolids to agricultural land on slopes in excess of 15 percent.
- (2) Application of biosolids to agricultural land with slopes of less than 15 percent shall conform with the requirements stated in Table 6A.

<b>TABLE 6A . SLOPE AND APPLICATION REQUIREMENTS FOR AGRICULTURAL LAND</b>		
<b>percent slope</b>	<b>less than six percent solids content</b>	<b>six percent or greater solids content</b>
<b>level to five percent slope</b>	no limitation on application method except as otherwise specified within this section 64.16	
<b>greater than five to nine percent slope</b>	incorporation within 24 hours, subsurface injection or approved site operating plan	no limitation on application method except as otherwise specified within this section 64.16

<b>greater than nine to fifteen percent slope</b>	subsurface injection or approved site operating plan	surface application if vegetative cover is established or if uniform crop residue cover of greater than 60%, or approved site operating plan
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- (3) No person shall apply biosolids for reclamation on disturbed land which exhibits slopes in excess of 30 percent.
- (4) Application of biosolids for reclamation of disturbed land with slopes of less than 30 percent shall conform with the requirements stated in Table 6B.

<b>TABLE 6B . SLOPE AND APPLICATION REQUIREMENTS FOR RECLAMATION</b>		
<b>percent slope</b>	<b>less than six percent solids content</b>	<b>six percent or greater solids content</b>
<b>level to five percent slope</b>	no limitation on application method except as otherwise specified within this section 64.16	
<b>greater than five to nine percent slope</b>	immediate incorporation, subsurface injection or approved site operating plan	no limitation on application method except as otherwise specified within this section 64.16
<b>greater than nine to fifteen percent slope</b>	subsurface injection or approved site operating plan	incorporation within 24 hours or approved site operating plan
<b>greater than sixteen to thirty percent</b>	application prohibited	

F. Application to Frozen, Ice-Covered, or Snow-Covered Ground.

- (1) Application of biosolids to frozen, ice-covered, or snow-covered sites where the slope of the site exceeds six percent is prohibited.
- (2) No person shall apply biosolids for beneficial use to frozen, ice-covered, or snow-covered land where the slope of such land is greater than three percent and is less than or equal to six percent unless one of the following requirements is met:
  - (a) there is 80 percent vegetative ground cover; or,
  - (b) approval has been obtained based upon a plan demonstrating adequate runoff containment measures.

G. Soils.

- (1) No person shall apply biosolids for beneficial use on land cultivated in food crops where the soil exhibits a pH of less than 6.0 standard units.
- (2) No person shall apply biosolids for beneficial use on land unless:

- (a) for irrigated agricultural land, the depth of suitable soil is a minimum of three (3) feet, or
- (b) for agricultural land cultivated in dryland crops, or for rangeland, the depth of suitable soil is a minimum of eighteen (18) inches, or
- (c) for reclamation of disturbed land the depth of suitable soil is a minimum of twelve (12) inches.
- (d) For the purposes of this paragraph 64.15(G)(2), the depth of suitable soil shall be defined as the distance beneath the level in the soil at which biosolids are placed to the level at which impermeable substrata are encountered.

H. Nutrient Management.

- (1) No person shall apply biosolids for beneficial use to agricultural land such that nitrogen application exceeds the agronomic rate for the crop or vegetation cultivated. Agronomic loading rates shall be determined in a manner that is acceptable to the Division and shall account for plant available nitrogen sources which may include biosolids, manures, fertilizers, irrigation water, residual soil nitrogen, and soil organic matter. The Division may require monitoring to determine background levels of nitrogen in irrigation water in instances where the soil percolation rate, groundwater depth and residual soil nitrogen level indicate a reasonable potential for excessive nitrogen transport to groundwater.
- (2) No person shall apply biosolids for reclamation of disturbed land such that the nitrogen application exceeds the agronomic rate for the vegetation which is to be established, except that such application rate may be based upon an aggregate agronomic need representing the initial five years after application occurs.
- (3) When, per paragraph (2) of this subsection, a nitrogen application rate is requested which is based on an aggregate agronomic requirement for the vegetation, the Division may specify additional siting and operational restrictions which are more stringent than those otherwise specified within this section 64.15, or additional monitoring requirements which are more stringent than those specified in section 64.16 of these regulations.
- (4) The plant available nitrogen levels (lbs per dry ton) in biosolids shall be calculated as follows:

$$\text{Biosolids PAN} = (m) (\text{Organic N}) + (v) (\text{NH}_4\text{-N}) + \text{NO}_3\text{-N}$$

Where:

PAN = Plant Available Nitrogen (lbs per dry ton of biosolids)

m = Mineralization Factor

v = Volatization Factor

Organic N = organic nitrogen in biosolids (%)

NH<sub>4</sub>-N = Ammonia-nitrogen in biosolids(%)

NO<sub>3</sub>-N = Nitrate-nitrogen in biosolids (%)

- (5) No person shall apply biosolids for beneficial use to land where the available phosphorus content of the soil exceeds the following:
  - (a) 100 ppm, using sodium bicarbonate extraction;
  - (b) 50 ppm, using AB-DTPA extraction;

- (c) 170 ppm, using Bray P1 extraction;

Available phosphorus levels shall be determined based upon the Bray P1 extraction when soil pH is 6.5 or less.

- (6) The Division may consider allowing land application of biosolids if appropriate erosion control measures are implemented (e.g., NRCS code 590 for Colorado).

I. Crop Restrictions.

- (1) No person shall apply biosolids which are considered to be Class B with respect to pathogens, as defined in section 64.12(B)(8) of these regulations, unless the following requirements are met:
  - (a) food crops with harvested parts that may touch the biosolids/soil mixture and which grow above the soil surface shall not be harvested for 14 months after application of biosolids, or
  - (b) food crops with harvested parts which grow below the soil surface shall not be harvested for 20 months after application of biosolids when the biosolids remain on the soil surface for four months or longer prior to incorporation into the soil, or
  - (c) food crops with harvested parts which grow below the soil surface shall not be harvested for 38 months after application of biosolids when the biosolids remain on the soil surface for less than four months prior to incorporation into the soil, or
  - (d) food crops, feed crops, and non-food crops shall not be harvested for 30 days after application of biosolids.

J. Access Restrictions.

- (1) No person shall apply biosolids which are considered to be Class B with respect to pathogens, as defined in section 64.12(B)(8) of these regulations, unless the following requirements are met:
  - (a) animals shall not be allowed to graze on the land for 30 days after application of biosolids. For the purposes of this section 64.15(J), animals shall be defined as domesticated livestock whose products are consumed by humans.
  - (b) turf grown on land where biosolids is applied shall not be harvested for one year after application of the biosolids.
  - (c) public access to land with a high potential for public exposure shall be restricted for one year after application of biosolids, or
  - (d) public access to land with a low potential for public exposure shall be restricted for 30 days after application of biosolids.

**64.16 MONITORING AND ANALYSIS**

A. Biosolids Monitoring.

- (1) Collection and analysis of biosolids shall be accomplished at the frequencies specified in Table 7. For purposes of this section, "Annual Biosolids Production " is defined as either the amount of biosolids applied to the land, which includes those facilities that further

process biosolids, e.g. "composting", that is distributed to the public (dry weight basis). When sampling is required once per year samples shall be collected during the fourth quarter (October 1 through December 31) unless the Division specifies otherwise.

<b>TABLE 7. FREQUENCY OF BIOSOLIDS SAMPLE COLLECTION AND ANALYSIS</b>	
<b>ANNUAL BIOSOLIDS PRODUCTION (dry short tons/year)</b>	<b>FREQUENCY</b>
less than 319	once per year
319 to less than 1,650	once per quarter
1,650 to less than 16,500	once per two months
16,500 and greater	monthly

- (2) Notwithstanding the requirements of Table 7 above, collection and analysis of biosolids samples from wastewater treatment lagoons shall be required prior to removal and use or distribution of the biosolids. Sampling shall be described in a sampling plan submitted to the Division for review and approval and shall be undertaken in accordance with the approved plan.
- (3) Analysis of biosolids samples shall include the parameters identified in Table 8.

<b>TABLE 8. BIOSOLIDS ANALYSES AND REPORTING UNITS</b>			
<b>PARAMETERS</b>	<b>UNITS</b>	<b>PARAMETERS</b>	<b>UNITS</b>
total solids	percent	volatile solids	percent of total solids
pH	standard units	organic nitrogen as N	percent dry weight
total phosphorus	percent dry weight	total ammonia as N	percent dry weight
total potassium	percent dry weight	nitrate as N	percent dry weight
total arsenic	mg/kg dry weight	total mercury	mg/kg dry weight
total cadmium	mg/kg dry weight	total molybdenum	mg/kg dry weight
total chromium	mg/kg dry weight	total nickel	mg/kg dry weight
total copper	mg/kg dry weight	total selenium	mg/kg dry weight
total lead	mg/kg dry weight	total zinc	mg/kg dry weight

- (4) Samples collected to satisfy the requirements of paragraphs (1) and (2) of this subsection shall be composite samples. Individual composite samples shall be collected either in a

storage area or at the outlet of a biosolids application device immediately prior to application. A composite sample of liquid biosolids shall consist of a minimum of three grab samples of no less than 500 ml each taken at equal intervals so as to be representative of the entire pumping cycle. A composite sample of dewatered biosolids shall consist of a minimum of three grab samples of no less than 0.5 pounds collected so as to be representative of the volume of biosolids applied within a twenty-four hour period, and combined.

- (5) Notwithstanding the requirements of paragraph (3) above, biosolids shall also be analyzed for such parameters as necessary to demonstrate compliance with the pathogen destruction and vector attraction reduction requirements of sections 64.12(B) and 64.12(C) of these regulations as appropriate for the use and distribution option(s) practiced. Compliance with Class A pathogen requirements shall be demonstrated using multiple tube assays. Compliance with Class B pathogen requirements may use either multiple tube or membrane filter methods. Analyses demonstrating pathogen destruction and vector attraction reduction shall be performed at the frequencies specified in section 64.16(A)(1), Table 7 of these regulations. Samples collected to satisfy the requirements of this paragraph shall be grab samples.
- (6) All methods used for the analysis of biosolids samples must be approved by the Division.

**B. Soils Monitoring.**

- (1) Collection and analysis of soils for the parameters identified in Table 9 shall be accomplished prior to the initial biosolids application and on a once per application basis thereafter. Sampling conducted subsequent to the initial sampling event shall occur after completion of the cropping cycle, i.e. after harvest, but prior to any additional application. For purposes of this section biosolids application shall be considered as one or more individual application of biosolids which are intended to supply the agronomic nitrogen requirement for the crop for a single cropping cycle.

<b>TABLE 9. SOILS FERTILITY ANALYSES AND REPORTING UNITS</b>			
<b>PARAMETERS</b>	<b>UNITS</b>	<b>PARAMETERS</b>	<b>UNITS</b>
pH	standard units	conductivity	mmhos/cm
ammonium as N	mg/kg	organic matter	percent
nitrate as N	mg/kg	available phosphorus	ppm extract
total phosphorus	mg/kg		

- (2) Analysis of soil samples for the parameters listed in Table 9 shall be performed using methods approved by the Division.
- (3) Collection and analysis of soils for the parameters identified in Table 10 shall be accomplished prior to biosolids application and once every ten years thereafter. Sampling conducted subsequent to the initial sampling event shall occur after completion of the cropping cycle, i.e. after harvest, but prior to any additional application. For purposes of this section, biosolids application shall be considered as one or more individual application of biosolids which are intended to supply the agronomic nitrogen



requirement for the crop for a single cropping cycle. Analyses performed to satisfy the requirements of this paragraph and of Table 10 shall include determination of total recoverable metals concentrations.

<b>TABLE 10 . SOILS METALS AND PHYSICAL CHARACTERISTICS REPORTING UNITS</b>			
PARAMETERS	UNITS	PARAMETERS	UNITS
arsenic	mg/kg soil	mercury	mg/kg soil
cadmium	mg/kg soil	molybdenum	mg/kg soil
chromium	mg/kg soil	nickel	mg/kg soil
copper	mg/kg soil	selenium	mg/kg soil
lead	mg/kg soil	zinc	mg/kg soil

- (4) Samples collected to satisfy the requirements of paragraphs (1) and (3) of this subsection shall be composite samples made up of soil taken from no fewer than sixteen core holes per 320 acres and completely mixed to form a minimum one pound sample.
- (a) A minimum of one composite sample per 320 acres is required. The Division may require more intensive sampling in instances where multiple crops are cultivated or different soil types are present.
  - (b) Except as otherwise required in the Notice of Authorization for the Use or Distribution of Biosolids samples shall be collected to a depth of one foot and composited.
  - (c) Notwithstanding any other requirements of this section 64.16(B), the Division may require deep soil (nitrate) monitoring.
- (5) Analysis of soil samples for metals shall be performed consistent with the requirements in 40 CFR Part 503.8(b)(4), which requires utilizing the methods listed in EPA's publication "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," also known as SW-846, including EPA Method 3050B. (Second Edition (1982) with Updates I (April 1984) and II (April 1985), and Third Edition (November 1986) with Revision I (December 1987)).
- (6) The Division may specify more frequent monitoring than otherwise required in paragraphs (1), (3) and (4) above when biosolids are applied for the reclamation of disturbed land.

**C. Additional Monitoring.**

- (1) Additional monitoring, including but not limited to monitoring of additional biosolids or soils parameters, monitoring of biosolids or soils parameters more frequently than otherwise specified, deep soil monitoring, monitoring of groundwater, monitoring surface water, or monitoring of plant tissue may be required by the Division.

**64.17 RECORDKEEPING AND REPORTING**

A. Recordkeeping.

- (1) Biosolids preparers shall develop the following information and shall retain the following information for a period of no less than five years. Such information shall be made available to any representative of the Division upon request.
  - (a) Documentation demonstrating compliance with the appropriate pathogen destruction criteria contained in section 64.12(B) of this regulation.
  - (b) Documentation demonstrating compliance with the appropriate vector attraction reduction criteria contained in section 64.12(C) of this regulation. In instances where the biosolids preparer is not the biosolids applier, and the appropriate vector attraction reduction criteria are those which appear in sections 64.12(C)(11) through 64.12(C)(13), such documentation shall be in the form of a certification statement as described in subsections 64.17(C)(4) of this section obtained from the biosolids applier.
  - (c) In instances where the biosolids preparer is not the biosolids applier, documentation that the applier has been provided information necessary to comply with the requirements of these regulations.
  - (d) The results of any biosolids analyses performed pursuant to the requirements of sections 64.16(A) and (C) of these regulations.
  - (e) The results of any soils analyses performed pursuant to the requirements of sections 64.16 (B) and (C) of these regulations.
  - (f) The results of any additional monitoring performed as specified in the Notice of Authorization for the Use and Distribution of Biosolids.
- (2) The biosolids applier shall develop the following information and shall retain the following information for a period of no less than five years. Such information shall be made available to any representative of the Division upon request.
  - (a) Documentation demonstrating compliance with the appropriate pathogen destruction criteria contained in section 64.12(B) of these regulations. Such documentation shall be in the form of a certification statement as described in subsection 64.17(C)(2) of this section obtained from the biosolids preparer.
  - (b) Documentation demonstrating compliance with the appropriate vector attraction reduction criteria contained in section 64.12(C) of these regulations. In instances where the biosolids preparer is not the biosolids applier, and the appropriate vector attraction reduction criteria are those which appear in sections 64.12(C)(3) through (10) such documentation shall be in the form of a certification statement as described in subsection 64.17(C)(2) of this section obtained from the biosolids preparer.
  - (c) The results of any biosolids analyses performed pursuant to the requirements of sections 64.16(A) and (C) of these regulations. Results shall include citation referencing the analytical procedures utilized.
  - (d) The results of any soils analyses performed pursuant to the requirements of sections 64.16(B) and (C) of these regulations. Results shall include citation referencing the analytical procedures utilized.

- (e) The results of any additional monitoring performed as specified in the Notice of Authorization for the Use and Distribution of Biosolids.

B. Annual Report Submittal.

- (1) Biosolids preparers shall submit to the Division an annual Self-Monitoring Report. The Self-Monitoring Report shall include the following items:
  - (a) Documentation demonstrating compliance with the appropriate pathogen destruction criteria contained in section 64.12(B) of these regulations.
  - (b) Documentation demonstrating compliance with the appropriate vector attraction reduction criteria contained in section 64.12(C) of these regulations.
  - (c) The results of any biosolids analyses performed pursuant to the requirements of sections 64.16(A) and (C) of these regulations.
  - (d) The results of any soils analyses performed pursuant to the requirements of sections 64.16(B) and(C) of these regulations.
  - (e) The results of any additional monitoring performed as specified in the Notice of Authorization for the Use and Distribution of Biosolids.
  - (f) The total amount and disposition of biosolids produced during the preceding calendar year, including the amount of biosolids applied to each agricultural and/or disturbed land site issued a Notice of Authorization for the Use and Distribution of Biosolids.
  - (g) Certification statement(s) required per section 64.17(C) of these regulations as appropriate for the use and/or distribution option(s) practiced.
- (2) The biosolids applier shall submit to the Division an annual Self-Monitoring Report. The annual Self-Monitoring Report shall include the following items:
  - (a) Documentation demonstrating compliance with the appropriate biosolids vector attraction reduction criteria contained in section 64.12(C) of these regulations when the appropriate criteria are those contained in section 64.12(C)(11) through 64.12(C)(13).
  - (b) The results of any biosolids analyses performed pursuant to the requirements of sections 64.16(A) and (C) of these regulations.
  - (c) The results of any soils analyses performed pursuant to the requirements of sections 64.16(B) and (C) of these regulations.
  - (d) The results of any additional monitoring performed as specified in the Notice of Authorization for the Use and Distribution of Biosolids.
  - (e) The total amount and disposition of biosolids applied during the preceding twelve months, including the date biosolids are applied to each agricultural and/or disturbed land site issued a Notice of Authorization for the Use and Distribution of Biosolids, amount of biosolids applied to each agricultural and/or disturbed land site issued a Notice of Authorization for the Use and Distribution of Biosolids, and the cumulative amount of those pollutants identified in section 64.12(A), Table 1 and Table 3, of these regulations applied to each agricultural and/or disturbed

land site issued a Notice of Authorization for the Use and Distribution of Biosolids.

- (f) For sites authorized for long-term storage, information demonstrating compliance with section 64.13 of this regulation.
  - (g) A list of authorized sites and a description of the status of each, including the most recent date of biosolids application.
  - (h) Certification statement(s) required per section 64.17(C) of these regulations as appropriate for the use and/or distribution option(s) practiced.
- (3) Self-Monitoring Reports shall be submitted to the Division so that they are received by February 19th of each year. The Self-Monitoring Report shall include the results for all items identified in subsection (1) of this section for the period from January 1 through December 31 of the preceding year.

C. Certification.

- (1) Persons who prepare biosolids which are distributed to the public shall include one of the following certification statements, as appropriate, with the Self-Monitoring Report:
- (a) "I certify, under penalty of law, that the Table 3 metals based requirements in section 64.12(A), the appropriate Class A pathogen destruction requirements in sections 64.12(B)(1) through 64.12(B)(7), and the appropriate vector attraction reduction requirements in sections 64.12(C)(1) through 64.12(C)(10) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen destruction requirements and biosolids stability requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment.", or
  - (b) "I certify, under penalty of law, that the Table 1 metals based requirements in section 64.12(A), the appropriate Class A pathogen destruction requirements in sections 64.12(B)(1) through 64.12(B)(7), the appropriate vector attraction reduction requirements in sections 64.12(C)(1) through 64.12(C)(10), and the notification requirements in section 64.14(B)(2) have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen destruction requirements and biosolids stability requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."
- (2) Persons who prepare biosolids which are applied to agricultural land or to disturbed land for reclamation, and who apply the biosolids which are produced, shall include the following certification statement with the Self-Monitoring Report:

"I certify, under penalty of law, that the Table 1 metals based requirements in section 64.12(A); the appropriate Class A pathogen destruction requirements in sections 64.12(B)(1) through 64.12(B)(7), or the appropriate Class B pathogen destruction requirements in sections 64.12(B)(8) and (9); the appropriate biosolids stability requirements in sections 64.12(C)(1) through 64.12(C)(13), and the appropriate management practices in sections 64.13, 64.15, and 64.16 have been met. This

determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

- (3) Persons who prepare biosolids which are applied to agricultural land or to disturbed land for reclamation, and who do not apply the biosolids which are produced, shall include the following certification statement with the Self-Monitoring Report:

"I certify, under penalty of law, that the Table 1 metals based requirements in section 64.12(A); the appropriate Class A pathogen destruction requirements in sections 64.12(B)(1) through 64.12(B)(7), or the appropriate Class B pathogen destruction requirements in sections 64.12(B)(8) and (9); and the appropriate biosolids stability requirements in sections 64.12(C)(3) through 64.12(C)(10), if utilized, have been met. I further certify that the applier has been provided notice of and necessary information to comply with the requirements of the Biosolids Regulation, and specifically with the appropriate biosolids stability requirements in sections 64.12(C)(11) through (13), if utilized, and the appropriate management practices in sections 64.13, 64.15, and 64.16. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

- (4) Persons who apply biosolids to agricultural land or to disturbed land for reclamation, when not the persons who prepare biosolids, shall include the following certification statement with the Self-Monitoring Report:

"I certify, under penalty of law, that the biosolids stability requirements in sections 64.12(C)(11) through 64.12(C)(13), and, as necessary, the appropriate management practices in sections 64.13, 64.15, and 64.16 have been met. This determination has been made under my direction and supervision in accordance with the system designed to ensure that qualified personnel properly gather and evaluate the information used to determine that the pathogen requirements have been met. I am aware that there are significant penalties for false certification including the possibility of fine and imprisonment."

#### **64.18 - 64.20 RESERVED**

#### **64.21 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE**

The provisions of Colorado Revised Statute Sections 25-8-202(1)(c) and (2), 25-8-205(1)(e), 25-8-501(1) and (2), and 25-8-509 C.R.S., (1989 Repl. Vol. and 1993 Supp.) provide the specific statutory authority for the Colorado Biosolids Regulations adopted by the Commission. The Commission has also adopted, in compliance with Colorado Revised Statute Section 24-4-203(4) C.R.S., (1988 Repl. Vol. and 1992 Supp.), the following Statement of Basis and Purpose.

#### **BASIS AND PURPOSE**

There are a number of statutory provisions which authorize the regulation of biosolids by the Department of Health. Prior to the 1993 legislative session these included the Department's general rulemaking authority found at Section 25-1-107 C.R.S. (1973 Repl. Vol., 1981 Supp.) and the Solid Waste Disposal Sites and Facilities Act, 30-20-101 *et seq.*, C.R.S. (1973 Repl. Vol., 1981 Supp.). The former provides authority allowing the Department to "establish and enforce minimum general sanitary standards as to the

quality of wastes discharged upon land and the quality of fertilizer derived from the excreta of human beings or from the sludge of sewage disposal plants.", C.R.S. 1973, 25-1-107(1)(e) (Supp. 1981). More specific authorities are contained in the Solid Wastes Disposal Sites and Facilities Act.

The Solid Wastes Disposal Sites and Facilities Act defines sludge from waste treatment plants as solid waste (§30-20-101(6)). The Act requires that "Any person who owns or operates a solid wastes disposal site and facility shall first obtain a certificate of designation from the governing body having jurisdiction over the area in which such site and facility is located.", (§30-20-102(1)). Further, "Solid Wastes disposal by any person is prohibited except on or at a solid wastes disposal site and facility for which a certificate of designation has been obtained as provided in section 30-20-105.", (§30-20-102(2)). The certificate of designation process is intended to address the siting and operation of landfills and similar activities. The legislature recognized that the certificate of designation requirement was inappropriate for certain modes of waste recycling and utilization and therefore amended the statute in 1986. This amendment provides an exemption for the certificate of designation requirement for "the final use for beneficial purposes, including fertilizer, soil conditioner, fuel, and livestock feed, of sludge which has been processed and certified or designated as meeting all applicable regulations of the department and the department of agriculture shall not require a certificate of designation for such final use.", (§30-20-102(6)). Other modes of sewage sludge disposal (i.e. incineration or dedicated disposal) remained subject to the certificate of designation requirement.

The Department convened a task force in 1977 made up of state and local health professionals, academics, consultants, public interest group representatives and members of the regulated community. The group was charged with the development of the mechanism necessary to implement the certificate of designation exemption. This group produced a document entitled Guidelines for Sludge Utilization on Land. This document was jointly adopted by the Colorado Board of Health and the Water Quality Control Commission in 1979. Compliance with the criteria contained in the document was voluntary. Moreover, because the document was adopted as guidance, and not as regulation, the Attorney General's Office determined that the document was inadequate to constitute implementation of the certificate of designation exemption at Section 30-20-102(6) of the Solid Wastes Disposal Sites and Facilities Act. The task force was reconstituted in 1981 and began a comprehensive revision of the guidelines. The product was the Colorado Domestic Sewage Sludge Regulation, 5CCR 1003-7, adopted by the Board of Health in 1985. The regulations represented the incorporation of the Guidelines for Sludge Utilization on Land with criteria contained within a number of guidance documents and regulation produced by the United States Environmental Protection Agency during that period.

The Statement of Basis and Purpose which was adopted by the Board of Health when the Domestic Sewage Sludge Regulations were initially adopted in 1985 embodied a policy promoting the beneficial use of biosolids. Specifically the following comment was incorporated into the Statement of Basis and Purpose:

"an environmentally sound solution to sludge disposal problems is utilization of stabilized sludge on land for agriculture, silviculture or reclamation"

It is the intent of the Water Quality Control Commission that this regulation further promote the beneficial use of biosolids by providing a comprehensive framework of criteria, compliance with which assures a degree of operational management and a product of a quality compatible with the state's goals of protecting the public health and the environment."

The Solid Wastes Disposal Sites and Facilities Act was amended in 1986 to establish a fee system to support implementation of the regulations (§30-20-110.5). This authority continues to provide the statutory basis for the program fee system. The regulations were amended in 1987 to provide a mechanism to implement the fee system. The fee system provisions will remain a primary feature of a regulation separate from this which is to be retained under Board of Health Authority.

The Domestic Sewage Sludge Regulations were amended a second time in 1987 to provide for issuance of Notices of Authorization to Apply Domestic Sewage Sludge. Prior to this revision the regulations were

self-implementing. Submittal of a Letter of Intent to Apply Domestic Sewage Sludge, by the sludge producer, to the Department was required. If, within a specified time frame, the department did not notify the applicant of deficiencies in the Letter of Intent, the producer could begin sludge application. A number of producers found this mechanism to be lacking. There was a desire on the part of the producers to be provided a permit-like instrument which would serve to document their compliance with the regulatory criteria. There existed a similar desire on the part of the public. The regulations were therefore amended to create the Notice of Authorization to Apply Domestic Sewage Sludge, a permit-like document.

The regulations were again amended in 1990 to provide criteria for the beneficial use of sludges derived from the treatment of municipal raw water sources with aluminum or iron compounds. As with the fee system provisions, the water treatment sludge provisions of the Domestic Sewage Sludge Regulations are to remain within a separate regulation to be promulgated by the Board of Health under Solid Wastes Disposal Sites and Facilities Act authority.

An amended version of the Domestic Sewage Sludge Regulations is to be promulgated by the Board of Health. It is anticipated that this action will take place at a November 17, 1993 rulemaking. The effective date of this revised rule will correspond to that of this regulation. The revised Domestic Sewage Sludge Regulations, as previously discussed, will retain only those criteria and requirements which are germane to the beneficial use of water treatment sludges and to the state sludge management fee system. All other provisions of the Domestic Sewage Sludge Regulations are expected to be rescinded by the Board.

As the Colorado Municipal Sludge Management Program was evolving so too were federal efforts at rulemaking. The EPA initially promulgated regulations applicable to the beneficial use of sewage sludge in 1979. These regulations appeared at 40 CFR Part 257. The federal technical criteria were incorporated into the 1985 Colorado Domestic Sewage Sludge Regulations. The Part 257 regulations were intended by the EPA to provide the foundation for comprehensive regulations addressing sludge use and disposal. The Clean Water Act reauthorization of 1987 provided the impetus for a second round of federal rulemaking.

The EPA on May 2, 1989 amended regulations at 40 CFR Parts 122, 123, and 124 and promulgated new regulations at 40 CFR Part 501. These regulations address implementation of what were then anticipated federal sewage sludge criteria to be promulgated at 40 CFR Part 503. Specifically the revisions to Parts 122 through 124, and the newly promulgated Part 501, require implementation of federal sludge use and disposal requirements through EPA issued National Pollutant Discharge Elimination System permits or through NPDES permits or equivalent permit-like instruments issued by delegated states. Colorado holds primacy for the NPDES program and issues Colorado Discharge System permits (CDPS permits). The State may select that implementation option which most readily integrates into an existing program structure. Unlike a number of other programs, assumption of sludge program delegation is not required of states which hold NPDES delegation. The State could opt to allow the EPA to implement federal sludge program requirements through "permit riders" attached to Colorado Discharge Permit System permits. The Part 501 regulations also allow what is termed "partial program delegation". The federal regulations divide sludge use/disposal into three areas: land application, surface disposal, and incineration. These distinctions correspond fairly closely to the beneficial use/dedicated disposal Division which has evolved within the Colorado programs regulating sludge use. Partial program delegation would allow delegation of program implementation responsibilities for any or all of the three program areas. It is the State's intent to seek delegation of the land application and surface disposal portions of the federal program. This rulemaking will expedite delegation of the former. The Wastewater Utilities Council and the Water Quality Forum, groups representing the regulated community, have actively supported this position.

The promulgation of the federal delegation requirements in 1989 allowed the Department to review its existing program structure in terms of those requirements. This review identified a significant deficiency. Regardless of whether the State assumes delegation of the federal sludge management program as a component of its existing NPDES program or as an independent program, the federal regulations promulgated in 1989 require the Department's enforcement capability to be equivalent to that necessary for NPDES delegation. These authorities must include administrative remedies for non-compliance (i.e.

cease and desist orders), and the ability to impose civil penalties of up to \$5,000 per day for each violation and criminal penalties of up to \$10,000 per day of violation. The Department lacks such authorities under the Solid Wastes Disposal Sites and Facilities Act. The State's Water Quality Control Act, however, includes a level of enforcement authority which is adequate to support delegation. The Department considered either amendment of the Solid Waste Disposal Sites and Facilities Act, thereby developing a level of enforcement authority which is adequate to meet the requirements for delegation, or amendment of the Water Quality Control Act to provide the Commission the authority to regulate sludge use and disposal. After discussions both internal and external to the Department, the decision was made to pursue the second option. Senate Bill 182, legislation amending the Water Quality Control Act, was drafted and carried forward by a coalition consisting of the Wastewater Utility Council, the Water Quality Forum, and the Department. SB 182 was adopted during the 1993 legislative session.

In addition to providing rulemaking authority to the Commission, SB 182 also introduces the term "biosolids" into the Water Quality Control Act. The term has been defined to mean a residual product which is no longer a waste but rather a recyclable commodity. The concept originated within the wastewater treatment industry in an attempt to disassociate biosolids from other, sometimes hazardous wastes which have historically been lumped together as "sludge". The Biosolids Regulations address criteria and procedures for the beneficial use of biosolids.

The EPA promulgated comprehensive technical criteria for the beneficial use of biosolids and for several modes of sludge disposal at 40 CFR Part 503. The Part 503 regulations were promulgated on February 19, 1993. The Colorado Biosolids Regulations represent an integration of that portion of the federal Part 503 regulations dealing with beneficial land application with the criteria and administrative processes from the State's Domestic Sewage Sludge Regulations.

The technical criteria for molybdenum and selenium promulgated by EPA at 40 CFR Part 503 are currently the subject of ongoing litigation at the federal level. Climax Metals Company and the City of Pueblo are parties to the Commission's rulemaking and are litigants in the federal court action. Alternate proposals put forth by these parties incorporate either alternate numeric standards for molybdenum which are greater than the Part 503 criteria (Climax) or delete any numeric criterion for selenium (Pueblo). Adoption of these proposals would result in the state's regulation being less stringent than currently effective federal requirements. It is the intention of the commission, upon resolution of those federal actions, to incorporate appropriate revisions to this regulation. It is the Commission's intent that these modifications proceed as expeditiously as possible. Should the federal litigation result in either administrative or judicial stays of the effectiveness of the molybdenum or selenium portions of the federal rule, the Commission will schedule a rulemaking hearing, including an emergency rulemaking if warranted, to consider similar action.

The Water Quality Control Division convened a series of public meetings after this regulation was initially noticed. These meetings were held with the intent of soliciting public input regarding the proposed regulation. It is the preference of both the Commission and the Division that such meetings proceed the public notice of a proposed regulation. The juxtaposition of the 1993 legislative action and the Commission's schedule, however, necessitated that the meetings followed the initial proposal. As a result of comment received at those hearings, as well as written comments solicited by the Division, a series of modifications have been incorporated into the regulation.

The terminology used to reference Division issued approvals for the use of biosolids has been modified so as to retain, to a degree, nomenclature developed under the old Domestic Sewage Sludge Regulations. Approvals are now referred to as "Notices of Authorization for the Use and Distribution of Biosolids" as opposed to "Permits for the Use and Distribution of Biosolids". Approvals granted under the Domestic Sewage Sludge Regulations were referred to as "Notices of Authorization to Apply Domestic Sewage Sludge". This modification is intended to minimize any confusion which might arise between references to CDPS permits and to the biosolids permitting mechanism.

A feature of the federal regulations (40 CFR 501) is the requirement that the permit or permit equivalent document receive public notice. It is the State's intent to implement the federal program requirements



through a combination of existing mechanisms. Notices of Authorization will continue to be issued on a site by site basis and will focus on those management, monitoring and reporting requirements which are unique to the state Biosolids Regulations. Broader requirements which are not specific to a given land application site, and which flow from the federal Part 503 regulations will be integrated into the CDPS permit. The CDPS permit will incorporate those elements for which public notice is required. Nonetheless, it should be noted that the Notice of Authorization is intended as a permit or permit equivalent mechanism as that term is utilized in 40 CFR 503.

Notices of Authorization for the Use and Distribution of Biosolids shall not be issued if they would allow a violation of any water quality standards promulgated by the State of Colorado for surface or groundwater, or would violate a control regulation. Nothing in this regulation is intended to affect any requirements specified in any control regulation and in particular the Cherry Creek Reservoir Control Regulations, 4.2.0 (5 CCR 1002-19). The Cherry Creek Reservoir Control Regulations require that whenever a discharger requests a compliance schedule in connection with a permit issuance or permit renewal, the discharger shall notify the Cherry Creek Basin Water Quality Authority of that request, solicit Authority comment, and submit evidence of that notice to the Division. Thus the Authority shall continue to be notified and may comment on permit-based compliance schedules issued pursuant to this regulation.

Requirements for the submittal and contents of applications for Notices of Authorization, referred to as "Letters of Intent for the Use and Distribution of Biosolids", have been restructured to address three possible use scenarios; unrestricted use, restricted use of bagged and containerized biosolids, and agricultural or reclamation use. The first two options involve the distribution and/or marketing of biosolids to the public. Distribution to the public limits control over appropriate usage of the product. The public noticed version of the regulation proposed different submittal requirements based upon the level of public exposure to the product. This distinction is not, however, crucial to determination of the appropriate regulatory criteria. The regulation now differentiates between the Letter of Intent submittal requirements based upon the metal content (grade) of the biosolids. This restructuring more closely conforms with federal regulatory requirements and is more easily understood by the applicant. It should be noted that the required issuance of a Notice of Authorization for the public distribution of biosolids is applicable to the facility producing or preparing biosolids for public distribution. Individuals who purchase or otherwise receive biosolids prepared and distributed in accordance with applicable provisions of these regulations are not required to obtain individual notices of authorization.

The federal Part 503 regulations identify a series of compliance dates applicable to various portions of the federal regulation. Federal monitoring and reporting requirements became effective on July 20, 1993. Compliance with the remaining applicable portions of Part 503 is required no later than February 19, 1994, unless construction of additional facilities is necessary. In the latter instance the compliance deadline is extended to February 19, 1995. Section 4.9.7 Has been amended to identify February 19, 1994 as the effective date of the regulations. Section 4.9.6 Has been modified so as to identify the variance process as the mechanism through which the Division will implement the compliance deadline extension in those instances where construction is required to achieve compliance.

Section 4.9.12.A(3) is modified to provide more appropriate monitoring requirements in instances where biosolids exceed a numeric metals criterion for either Grade I or II and subsequently experience a decrease in metals content such that compliance with the Grade I or II criterion is once again achieved.

Comments were submitted to the Division which questioned the need for the provisions appearing at 4.9.15.A(2)(b)(ii) and (iii), and at 4.9.15.B(1)(c) and (d). These paragraphs identify maximum numerical limits for PCBs and for total alpha activity in the biosolids. Should levels of these parameters exceed the numeric criteria identified, disposal of the material is regulated by other regulations. There are no monitoring requirements associated with these criteria as previous monitoring has indicated the likelihood of biosolids exceeding either criterion to be minimal. The Commission, nonetheless, is of the opinion that there is significant informational value in the retention of these criteria in the regulation. The Board of Health is currently engaged in a rulemaking addressing "Naturally Occurring Radioactive Materials". The result of that rulemaking will necessitate the review and, potentially, the revision of this regulation.

A significant concern identified by commenters was that cultivated lands or rangeland could be excluded from application if it is subject to periodic inundation during storm events. A notation has been inserted into the definition of "state waters" with the intent of eliminating any confusion which might arise as to the exclusion of runoff from cultivated drainages or vegetated range from the definition of "state waters" until such point as that runoff enters a water body.

Section 4.9.15.F, has had additional language inserted which requires consideration of all potential nitrogen sources when application rates for biosolids are determined. The Division has identified instances where biosolids application has been supplemented by application of manures, fertilizers, or other nitrogen sources. Excessive nitrogen application contributes to nitrate contamination of groundwater. These additional nitrogen sources must now be accounted for in determination of the appropriate biosolids application.

The regulation also specifically allows the Division to require deep soil (5 foot) monitoring for nitrates (4.9.16.B) on a case by case basis. The Division may consider past and present biosolids application rates as well as application of other nitrogen sources, soil texture and depth, groundwater depth and use, and other relevant factors in determining applicability of deep soil monitoring requirements. This requirement is also intended to address problems associated with past or potential overapplication of nitrogen and to identify instances of overapplication in a timely fashion.

Section 4.9.17.B has been modified to relax reporting frequencies to correspond to the annual reporting requirement of 40 CFR 503. Additional language now appears at 4.9.17.D, however, requiring expedient notification to the Division upon instances of significant noncompliance.

Language has been inserted in Section 4.9.12.B(8) in response to comment received from the City of Pueblo. This modification is intended to clarify the time and temperature requirements for aerobic and anaerobic digestion of biosolids. The City had also proposed identification of long term stabilization as a Process to Further Reduce Pathogens (PFRP). The Domestic Sewage Sludge Regulations had included provisions which did so. This provision was a unique feature of the Colorado regulations and had no corresponding provision in federal regulations. The 40 CFR 503 regulations do not recognize long term stabilization as a PFRP. Section 4.9.12.B(8)(b)(vi) does, however, allow the permitting authority to certify processes which are not specifically identified in the regulation as equivalent to PFRP. Until delegation occurs that authority is vested with the EPA. That agency, the state, and the City of Louisville are in the process of defining the operational parameters applicable to long term stabilization which, when met, demonstrate a level of pathogen destruction consistent with the PFRP designation. It is expected that certification for long term stabilization will be finalized shortly.

Requirements applicable to short term storage of biosolids at an application site have been incorporated into Section 4.9.13.F. Previously the regulatory requirements addressed only relatively permanent storage facilities. Several commenters noted that weather conditions may, on occasion, necessitate short term on-site storage. Section 4.9.13.F identifies criteria applicable to such circumstances.

The regulations had also contained criteria for both storage and for application on various slopes which utilized a sixteen percent solids content criterion to distinguish between various applicable criteria. The Domestic Sewage Sludge Regulations had included several management requirements which were based upon the sixteen percent criterion. It had been assumed that biosolids with a solids content of greater than sixteen percent would generate only a minimal amount of free liquid. It is the experience of several parties, and of the Division, that a fourteen percent solids content criteria is, in fact, appropriate. The fourteen percent criterion has been incorporated into the storage requirements at 4.9.13 and the management requirements relative to application on sloping land at 4.9.15.D.

Several parties have also suggested that the soil depth criteria, as it appeared at 4.9.15.F(2), was inflexible and did not recognize various reclamation scenarios. The soil depth criterion has been restructured to recognize beneficial use for reclamation and to provide requirements for agricultural use on both irrigated and dryland crops.

PARTIES TO THE RULEMAKING HEARING  
October 4, 1993  
HEARING CHAIR: David Pusey

1. Metro Wastewater Reclamation District
2. Climax Metals Company
3. City of Fort Collins
4. Littleton-Englewood Wastewater Treatment Plant
5. City of Pueblo
6. Cherry Creek Basin Water Quality Authority
7. City of Colorado Springs

**64.22 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE (July, 1994 Hearing)**

The provisions of Colorado Revised Statute Sections 25-8-202(1)(c) and (2), 25-8-205(1)(e), 25-8-501(1) and (2), and 25-8-509 C.R.S., (1989 Repl. Vol. and 1993 Supp.) provide the specific statutory authority these amendments to the Colorado Biosolids Regulations adopted by the Commission. The Commission has also adopted, in compliance with Colorado Revised Statute Section 24-4-203(4) C.R.S., (1988 Repl. Vol. and 1992 Supp.), the following Statement of Basis and Purpose.

**BASIS AND PURPOSE**

The Water Quality Control Commission adopted the Colorado Biosolids Regulations, 4.9.0 on November 2, 1993. While the regulations were being heard there was also ongoing litigation at the federal level concerning the technical basis for numeric molybdenum criteria contained in the federal sludge regulations at 40 CFR Part 503. The Commission opted to incorporate the federal numeric molybdenum standards into the Biosolids Regulations as they appeared in the Part 503 regulation at that time. The Statement of Basis, Specific Statutory Authority, and Purpose (§ 4.9.18) adopted anticipated potential future action relative to the federal molybdenum standards and indicated the Commission's intention to consider similar action. The Administrator of the United States Environmental Protection Agency on February 18, 1994 announced amendments to the 40 CFR Part 503 regulations. These amendments became effective the following day. The modification deletes annual and cumulative loading limits for molybdenum as well as the molybdenum concentration limit which corresponds to the state's Grade I molybdenum limit. The maximum allowable molybdenum concentration limit (Grade 2) remains unaffected by the federal amendments. This amendment to the Biosolids Regulations provides conformance with the revised federal criteria for molybdenum.

The state regulations at § 4.9.10.A(3)(d) and at § 4.9.15A(5) also require a determination of historic metals loadings to land application sites as part of the permitting process. Sites which have previously received biosolids after July 31, 1993 must have loadings of arsenic, cadmium, chromium, copper, lead, mercury, nickel, selenium and zinc quantified. This amendment deletes molybdenum from that requirement. Monitoring for molybdenum levels in biosolids, products derived from biosolids and application site soils are, however, retained as a feature of the regulation.

The Commission anticipates that these provisions will be reassessed again in the future, following further consideration and action concerning this issue by EPA.

**64.23 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE (January, 1996)**

The provisions of Colorado Revised Statute Sections 25-8-202(1)(c) and (2), 25-8-205(1)(e), 25-8-501(1) and (2), and 25-8-509 C.R.S., (1989 Repl. Vol. and 1993 Supp.) provide the specific statutory authority for the Colorado Biosolids Regulations adopted by the Commission. The Commission has also adopted,

in compliance with Colorado Revised Statute Section 24-4-203(4) C.R.S., (1988 Repl. Vol. and 1992 Supp.), the following Statement of Basis and Purpose.

## **BASIS AND PURPOSE**

The Colorado Water Quality Control Commission adopted the Colorado Biosolids Regulation, 4.9.0 on November 2, 1993. Subsequently, Water Quality Control Division and the Colorado Attorney General's Office staff developed the additional materials necessary to request delegation of the National Sludge Management Program. During the development of the delegation package several items were identified which had either been omitted from the regulation, or for which clarification is appropriate. A number of additional changes are best characterized as corrected or expanded cross references, or as minor corrections, and are not addressed below.

Section 4.9.3.B is amended to ensure that any facility or person treating or using biosolids, including a treatment works treating or applying biosolids which are generated elsewhere, are subject to the requirements of the regulation.

Language is also added at Section 4.9.3, as well as at Section 4.9.9.K, to clarify the applicability of the regulation and to modify the definition of biosolids to conform with the definition which appears in the Water Quality Control Act. Language added to section 4.9.3 excludes "hazardous sewage sludge" from the regulation. This language is added so as to restrict the applicability of the regulation in a manner which is consistent with the federal regulation at 40 CFR 503.

The Metro Wastewater Reclamation District raised a concern relative to a potential interpretation of the applicability section (4.9.3) and the biosolids definition to absolutely exclude grit, screenings or grease. The District noted that while it is appropriate to exclude those grit or screenings which are generated during primary treatment processes, a fraction of the materials which are typically characterized as grit and screenings are not removed during primary treatment and ultimately become a component of the treated biosolids. Similarly, there is some grease present in biosolids which is not removed earlier in the treatment process, or which has been re-introduced into the biosolids treatment train to enhance the efficiency of biosolids treatment processes and/or as an alternative to other disposal options. The criteria contained in the Biosolids Regulation are not applicable to the land application of grit or screenings removed during the primary treatment of domestic wastewater. Nor are they applicable to the land application of grease removed during the treatment of domestic wastewater which is not treated in a biosolids treatment unit, or from other sources. The land application of these materials, should such an activity be undertaken, would be subject to the requirements of the Colorado Regulations pertaining to Solid Waste Disposal Sites and Facilities. It is the intent of the Commission that the land application of these materials be clearly excluded from the Biosolids Regulation. It is not the Commission's intent to bar the land application of biosolids which may contain grease or insignificant amounts of grit which is present as a result of normal treatment operations and which meets all applicable state and federal requirements for land application.

The definition of "Annual Biosolids Application Rate" at 4.9.9.E is amended to address multi-year cropping practices, i.e. dryland wheat.

Language is added at 4.9.15.B to conform with federal requirements that the preparer of the biosolids provide the applier with the information necessary to allow the applier to determine the appropriate means to maintain compliance with the regulation. Section 4.9.15.B(3) is specifically added so as to assure conformance with federal requirements at 40 CFR 503.7 which require the preparer to assure that all applicable regulatory requirements are met.

Section 4.9.15.C is amended to specify a required 30 foot separation between a biosolids application area and a dry streambed. Federal regulations require a ten meter separation between land to which biosolids are applied and Waters of the United States. Dry streambed have been determined to be Waters of the United States and are therefore subject to the 10 meter requirement.

Table 4 is amended to allow application of biosolids of less than fourteen percent solids by subsurface injection to sites which exhibit a surface slope of greater than nine to fifteen percent. Such application was allowed under the Domestic Sewage Sludge Regulations, which preceded this regulation, and has been demonstrated to be an acceptable application method on slopes of less than fifteen percent or less.

Table 6 is amended to specify that the frequency of required monitoring is based upon the annual biosolids production expressed as "short" tons as opposed to "metric" tons.

Language is added to Section 4.9.17.A(1)(c) to require documentation that the biosolids producer has provided notification to the applier of information necessary to comply with the requirements of the regulation be maintained in producer records.

A specific certification statement is added at Section 4.9.16.C(3) to address instances where the producer is not also the applier of the biosolids.

Comments were submitted during the public notice period suggesting the addition of language clarifying state regulatory requirements relative to co-disposal of biosolids at municipal solid waste facilities. The author correctly pointed out the federal regulations at 40 CFR Part 258 address co-disposal. Similarly, co-disposal of biosolids is addressed within the state regulatory framework via the Colorado Regulations pertaining to Solid Waste Disposal Sites and Facilities, 6 CCR 1007-2. Criteria contained within the Colorado Biosolids Regulation do not apply to biosolids which are co-disposed with other wastestreams in municipal solid waste facilities. Section 4.9.3 specifically limits the applicability of the Biosolids Regulation to biosolids which are used beneficially. Co-disposal is not considered beneficial use and is therefore not governed by this regulation. It should be noted that the application of biosolids at a municipal solid waste facility for the purpose of reclaiming closed portions of the facility is considered beneficial use. The requirements of the Biosolids Regulation would be applicable in that instance.

The Commission adopted the Biosolids Regulation on November 2, 1993. While the regulation was being heard there was also ongoing litigation at the federal level concerning the technical basis for numeric chromium and selenium criteria contained in the federal regulations at 40 CFR Part 503. The Commission opted to incorporate the federal chromium and selenium standards into the Biosolids Regulation as they appeared in the federal Part 503 regulations at that time. The Statement of Basis, Specific Statutory Authority, and Purpose (section 4.9.18) adopted with the November 2, 1995 Biosolids Regulation anticipated potential future action relative to the federal chromium and selenium standards and indicated the Commission's intention to consider appropriate action upon resolution of the issues relating to the federal standards.

The United States Court of Appeals for the District of Columbia Circuit issued a decision on November 15, 1994 concerning the technical basis for the chromium and selenium limitations set forth in the 40 CFR Part 503 regulations. See Leather Industries of America, Inc. v. Environmental Protection Agency, 40 F.3d 392 (D.C.Cir. 1994). The Court held that the chromium and selenium "clean sludge" caps (40 CFR 503.13, Table 3), equivalent to the Colorado Grade I maximum metals concentrations identified at section 4.9.12.A(1), Table 1 of the Biosolids Regulation, were developed in a manner which exceeded EPA's statutory mandate because they were not based upon risk to human health or to the environment. The Court remanded the "clean sludge" numeric limits, as well as the maximum concentration limits (40 CFR 503.13, Table 1; section 4.9.12.A(1), Table 1 Grade II limits) and the annual loading limits (40 CFR 503.13, Table 4; section 4.9.14.B(2)(c)(i), Table 2) for chromium and selenium to EPA for "modification or additional justification". Following the Court's decision, the City of Pueblo petitioned the Commission to amend the Biosolids Regulation to delete the remanded federal "clean sludge" limitations for chromium and selenium and the maximum concentration limit for selenium. The City's petition resulted, in part, in this rulemaking.

The USEPA, on October 25, 1995 promulgated amendments to the federal sludge management regulations at 40 CFR Part 503 which partially implement the Court's decision in Leather Industries. (60 Fed. Reg. 54764). These revisions address maximum allowable concentration limits, annual pollutant loading limits, and cumulative pollutant loading limits for chromium and "clean sludge" concentrations for

selenium. All numeric limitations for chromium were struck from the Part 503 rule. The EPA action relaxed the federal Table 3 limitation for selenium from 36 mg/kg to 100 mg/kg. These revisions to the Colorado Biosolids Regulation incorporate revisions to the Grade I and Grade II metals concentration limits identified in Table 1, section 4.9.12.A, to the annual pollutant loading limits expressed in Table 2, section 4.9.15.B, and the cumulative pollutant loading limits in Table 3, section 4.9.15.A so as to conform with the federal rule.

With regard to the maximum concentration and annual loading limitations for selenium which were remanded to EPA, the City of Pueblo and EPA have been negotiating an amendment to the federal regulation which will establish variance procedures to allow the use of biosolids exceeding the maximum ceiling concentration (Colorado Grade II) where (1) the high concentration of a metal in the biosolids is due to unusual natural conditions and (2) the permitting authority adopts an alternative ceiling concentration sufficient to protect public health and the environment based upon the intended use and the risk assessments that reasonably apply to such use. EPA has expressed an intention to publish a proposed amendment to the federal sludge regulations in early 1996 for the purpose of incorporating this variance procedure, and to thereafter adopt the variance procedure in a final rule to be published after the close of a 60 day comment period. As a consequence of these factors, and in order to avoid delaying delegation of federal program authorities to the State, the City of Pueblo has withdrawn, for purposes of this rulemaking, its request to delete the remaining selenium limits in Tables 1 and 2. It is the Commission's intent to subsequently conduct a future rulemaking to either consider incorporation of the EPA variance procedure when finally adopted, or to consider other resolution of the selenium issue should negotiations between EPA and the City fail. During the interval between EPA adoption of a variance procedure and a new Commission rulemaking to consider incorporation of those procedures into the Biosolids Regulation, the Division has indicated that the EPA approved procedure will be applied under the existing authority of section 4.9.6.

#### PARTIES TO THE RULEMAKING HEARING

1. The Metro Wastewater Reclamation District
2. The City of Pueblo

#### **64.24 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE** **(Incorporation by Reference May, 1996)**

The provisions of section 25-8-202(1)(d) and 25-8-501 to 504; C.R.S., provide the specific statutory authority for adoption. The Commission also adopted, in compliance with Colorado Revised Statute Section 24-4-103(4) C.R.S., the following statement of basis and purpose of these amendments.

#### **BASIS AND PURPOSE**

The Commission added a new sentence to section 4.9.5 to comply with incorporation by reference provisions of the Administrative Procedure Act, section 24-4-103 (12.5)(c).

#### **64.25 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE: JULY, 1997** **RULEMAKING**

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

#### **BASIS AND PURPOSE**

The Commission has adopted a revised numbering system for this regulation, as a part of an overall renumbering of all Water Quality Control Commission rules and regulations. The goals of the renumbering are: (1) to achieve a more logical organization and numbering of the regulations, with a

system that provides flexibility for future modifications, and (2) to make the Commission's internal numbering system and that of the Colorado Code of Regulations (CCR) consistent. The CCR references for the regulations will also be revised as a result of this hearing.

**64.26 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE (December, 1997 Hearing)**

The provisions of sections 25-8-202(1)(c), 25-8-205(1)(e), 25-8-501 to 504, and 25-8-509; C.R.S., provide the specific statutory authority for adoption. The Commission also adopted, in compliance with section 24-4-103(4) C.R.S., the following statement of basis and purpose of these amendments.

## **BASIS AND PURPOSE**

The Colorado Water Quality Control Commission adopted the Colorado Biosolids Regulation 4.9.0 on November 2, 1993. Subsequently, the Commission convened an informational hearing concerning the Biosolids Regulation on December 9, 1996 as part of the triennial review.

A number of issues were identified at the December 9, 1996 informational hearing and were considered in this rulemaking hearing. These include applicability of Colorado permitting requirements to out-of-state biosolids, concerns with the distribution and/or marketing of liquid biosolids in Colorado, adequacy of current slope and setback criteria in the regulation, and expanded pathogen monitoring requirements for Class A biosolids. Additionally, the regulation is restructured slightly to combine phosphorus and nitrogen requirements into a single section addressing nutrient management concerns. Finally, there are a number of corrected or expanded cross references, which are not addressed any further.

Comments submitted to the Division from out-of-state producers of biosolids products marketed in Colorado requested waiver of the Notice of Authorization for the Use and Distribution requirement, and a concomitant \$2.40 per dry ton fee assessed for the biosolids which are beneficially used in the state. Comments submitted asserted that Colorado's regulatory requirements are equivalent to the requirements imposed by a regulatory agency in the state where the biosolids originated, and therefore, duplication of regulatory requirements is not necessary. In June, 1997, Division staff met with stakeholders to address this issue. The consensus was to keep the regulatory requirements of the regulation the same, and continue to assess the \$2.40 per dry ton fee for all biosolids beneficially used in Colorado. Justification for this is that state requirements where the biosolids originated from are, in fact, sometimes different than Colorado's requirements. Additionally, participants strongly felt that there is a need for local (in-state) sampling and analysis to confirm product quality. The Commission agrees with these conclusions and therefore has made no changes to the regulation in this regard.

Currently, the Biosolids Regulation allows the distribution and marketing of any product which meets Class A pathogen requirements, Grade I pollutant limitations, and appropriate Vector Attraction Reduction criteria. To date biosolids which have been distributed or marketed to the public have included composted or heat dried products. Questions have arisen as to the appropriate regulatory controls for a product which meets these requirements but is in a liquid form. A facility operating plan is required in the regulation at section 64.10.A(1)(e) to describe the distribution and marketing of biosolids to the public. In addition, the Division may also require in the operating plan, that a facility address handling and transportation of liquid biosolids. Therefore, the Commission does not believe that this aspect of the regulation requires modification at this time.

Agate and Deer Trail Soil Conservation District representatives voiced their concern, in both correspondence and at the informational hearing on December 9, 1996, over soil erosion problems at a property owned and operated by the Metro Wastewater Reclamation District where biosolids are being applied to the land for beneficial use. The Commission at that time asked Division staff to meet with the Agate and Deer Trail Soil Conservation Districts to discuss their concerns. The initial meeting occurred on May 29, 1997. Representatives of the Agate and Deer Trail Soil Conservation Districts, Metro Wastewater Reclamation District and other parties attended. The Soil Conservation Districts had two concerns; That the Universal Soil Loss Equation upon which previous criteria had been based is now out-of-date, and that EPA's use of the equation in the risk assessment upon which national criteria is based, did not take into account the intense rainfall events in eastern Colorado. A work-group was formed to evaluate these two issues. EPA ran the updated version of the Universal Soil Loss Equation (RUSLE ver 1.05) and included current rainfall data supplied by the Natural Resources Conservation Service. Analysis confirmed the adequacy of existing criteria for current slope and set-back requirements. Therefore, no changes to the current slope and set-back requirements are being adopted at this time. However, Tables 4 and 5 of the regulation have been modified per recommendations from the stakeholders group, to modify biosolids application methods identified in Tables 4 and 5 in order to minimize run-off from a site by maintaining established vegetative cover, crop residue cover, and/or organic matter on the soil surface and by allowing site specific management options to be considered.



The parties to the hearing recognize the importance of site management planning to address the issue of soil loss. The parties also recognize that criteria contained within the regulation are statutorily constrained such that any criteria must reflect a human health and/or water quality basis. Such criteria may not, however, adequately address soil loss problems in all cases given the variability of soil types and slopes which could potentially be encountered. Further discussions among parties resulted in an agreement that representatives of the parties, in conjunction with the National Resource Conservation Service, the Colorado Association of Soil Conservation Boards, and other interested groups, develop a document identifying "Recommended Management Practices for Control of Soil Erosion and Surface Runoff at Biosolids Application Sites". This document is intended to communicate information concerning erosion control practices and related issues to wastewater treatment facility staff, consultants, and biosolids management contractors. This document is not intended to be and will not be utilized as a basis to support mandated site management requirements but rather as a technology transfer device. The Division anticipates development of such document within a twelve to eighteen month timeframe.

Representatives of the Soil Conservation Districts also indicated that there is often confusion on the part of the public as to where to direct complaints and/or inquiries. It is the Division's intent to address this issue through the development of site specific fact sheets which would identify appropriate contacts and which would be distributed locally where application projects are ongoing.

Based upon recommendations by the stakeholders group and the CSU's Guide To Fertilizer Recommendation in Colorado, Section 64.16.B(4) of the regulation is modified to require that a soils analysis be comprised of 16 core hole samples per 320 acres. This is an increase from the current requirement in the regulation of 5 core holes samples per 320 acres. This increase in soil core hole samples would give a more representative sample of a site.

The Division had proposed modification of the regulation to require that compliance with numeric pathogen criteria for Class A biosolids products be based upon the results of seven discrete samples. The basis for the Division's proposal was that compliance with the Class B numeric criteria is based upon the geometric mean of seven samples and, because Class A biosolids products are made available to the public for use, the application of pathogen criteria to Class A products warrants an elevated level of conservatism. It should be noted that the language addressing the application of pathogen criteria to Class A biosolids currently mirrors the requirements of federal sludge management regulations at 40 CFR Part 503. The Division had proposed that additional language be adopted which would, in the Division's interpretation, clarify the federal requirements.

Several parties objected to the Division's proposal, questioning the Division's interpretation of EPA guidance relative to the federal requirements. After meeting with the parties and EPA the Division has agreed to withdraw that portion of its proposal. It is agreed that the monitoring requirements in question will be explored in a white paper developed jointly by the Division, EPA Region VIII, and other interested parties. It is the intent of the parties and EPA that the white paper be submitted to the EPA's Pathogen Equivalency Committee for their review and concurrence. The Division estimates that development of the white paper will be a year long process. EPA Region VIII expects the Pathogen Equivalency Committee review process to require an additional six months. The Division would anticipate that, should modification of the regulation be indicated, proposed changes would be offered as part of the next triennial review.

The Division, in the interim, will contact instate producers of Class A products and notify them of this process. The Division's notification will also identify existing requirements relative to the need for sampling which is representative of the treatment process utilized and procedures should any instance of non-compliance be identified.

Currently the Division sends a letter to the local Natural Resources Conservation Service office notifying them when permittees apply to the Department for a Notice of Authorization to land apply biosolids, on a site located within local district boundaries. This practice is one which has evolved at the program level, and is not a requirement of the regulations. The Division believes that this practice is beneficial and intends to continue it, but does not see a need to modify the regulation at this time.

## PARTIES TO THE RULEMAKING HEARING

1. Agate and Deer Trail Soil Conservation Districts
2. Littleton/Englewood Wastewater Treatment Plant
3. Metro Wastewater Reclamation District
4. Colorado Wastewater Utility Council

### **64.27 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE; (January, 2000 Hearing)**

The provisions of sections 25-8-202(1)(c), 25-8-205(1)(e), 25-8-501 to 504, and 25-8-509; C.R.S., provide the specific statutory authority for adoption. The Commission also adopted, in compliance with section 24-4-103(4) C.R.S., the following statement of basis and purpose of these amendments.

#### **BASIS AND PURPOSE**

The Commission convened an informational hearing concerning the Biosolids Regulation on July 14, 1999 as part of the triennial review.

Two issues were identified at the informational hearing and were considered in this rulemaking hearing. The issues are modifying the concentration limit for “selenium” for the City of Pueblo and removing requirements for “chromium” testing from the regulations.

The United States Court of Appeals for the District of Columbia Circuit issued a decision on November 15, 1994, concerning EPA’s exceedence of its statutory mandate regarding the technical basis for chromium and selenium limitations set forth in the 40 C.F.R. Part 503 regulations. The USEPA, on October 25, 1995, promulgated amendments to the federal sludge management regulations at 40 C.F.R. Part 503. All numeric limitations for chromium were struck from the Part 503 rule. In January of 1996, the Commission adopted revisions to the Biosolids Regulation reflecting US EPA’s removal of chromium numeric limitations from the federal regulations. Chromium monitoring had inadvertently remained a requirement in the biosolids monitoring section (64.16, Table 7) and in the soils monitoring section (64.16, Table 9) of the Colorado Biosolids Regulations. For consistency, the Commission has removed chromium monitoring requirements from the regulation.

As a result of ongoing litigation at the federal level, the USEPA, on October 25, 1995, promulgated amendments to the federal sludge management regulations at 40 C.F.R. Part 503 which addresses concentration limits for selenium. The EPA action relaxed the federal Table 3 limitation for selenium from 36 mg/kg to 100 mg/kg. The Commission, at that time, revised the Colorado Biosolids Regulation to incorporate the Grade I and Grade II metals concentration limits, identified in Table 1, section 64.12.A, to the annual pollutant loading limits expressed in Table 2, section 64.15.B, and the cumulative pollutant loading limits in Table 3, section 64.15.A so as to conform with the federal rule.

On March 3, 1998, the United States Court of Appeals for the District of Columbia Circuit granted a “stay” on the selenium limit in 40 C.F.R. Part 503, Section 503.13(b), Table 1 for the City of Pueblo’s biosolids. By adding a footnote to the Biosolids Regulation (Colorado Grade I and II, Table 1) the Commission is indicating its intent to recognize the court decision and further indicate that state regulatory actions will not be inconsistent with that decision.

### **64.28 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE; (March, 2003 Hearing)**

The provisions of sections 25-8-202(1)(c), 25-8-205(1)(e), 25-8-501 to 504, and 25-8-509; C.R.S., provide the specific statutory authority for adoption. The commission also adopted, in compliance with section 24-4-103(4) C.R.S, the following statement of basis and purpose of these amendments.

## **BASIS AND PURPOSE**

The Commission considered a number of issues that were identified at the August 12, 2002, informational hearing on the Biosolids Regulation in this rulemaking hearing.

Incorporation by Reference language has been updated to reflect the most accurate legal version in this regulation.

The Biosolids Regulation (Regulation 64) originally required that all Letters of Intent for Notices of Authorization, be submitted by certified mail. The reason this was instituted was so the Division would have a way to track the arrival of the Letter of Intent because the Division only had 60-calendar days to issue the Notice of Authorization. If it was not reviewed and issued within the 60 days it was deemed in effect by statute. Since that time the statute has been revised and the Notices of Authorization are no longer issued by default. Therefore the need to have the Letter of Intent submitted by certified mail no longer exists and the Commission has removed language found at Section 64.10(A). 64.10(A)(3)(I) has been changed from Soil Conservation Services to Natural Resources Conservation Services.

Section 64.10(A) also references the re-issuance of Notices of Authorization. As of 1994 all new Notices of Authorization that have been issued, and any reissued Notices of Authorization, do not have an expiration date. Therefore the Commission has removed this language.

Regulation 64 was adopted prior to the promulgation of the federal biosolids regulations (40 CFR Part 503). As a result the language in Regulation 64 that describes the metals limits has not been consistent with the language at 40 CFR Part 503.13 and this inconsistency has been confusing to the regulated community. The Commission has revised the language in Regulation 64 to match that at 40 CFR Part 503.13. Specifically the change eliminated the Maximum Metals Concentration classification of Grade I and Grade II biosolids, found in Table 1 at Section 64.12(A), which has been replaced with Table 1 "Ceiling Concentrations" and Table 3 "Pollutant Concentrations." This necessitated a renumbering of all the tables listed in Regulation 64 to make them consistent with the tables in 40 CFR Part 503.13.

The Commission removed sections 64.14(A)(1)(c) & (d), 64.14(B)(2)(c) & (d), and 64.15(A)(2)(c) & (d) that referenced monitoring for polychlorinated biphenyls (PCBs) which is not a requirement of the biosolids regulation and is covered in the federal regulations at 40 CFR Part 761 and in Part 279 of the Colorado Hazardous Waste Regulations. The disposal of material that has a total alpha activity of 40 picocuries per gram or greater is covered by the Colorado Radiation Control Act found at CRS 25-11-104 & 107. The Hazardous Waste Division and the Laboratory and Radiation Services (LARS) Division regulate disposal of these materials, respectively. There have been no monitoring requirements associated with these criteria in Regulation 64 as previous monitoring has indicated the likelihood of biosolids exceeding either criterion to be minimal.

The "Analytical Methods" found at Section 64.16(A)(6) have been replaced with updated and are approved by the Division. These approved methods are consistent with current EPA methods. This change was needed due to the evolution of more advanced methods of analysis and lower detection limits that provide greater accuracy.

Corrections of various typographical errors have also been made.

### **PARTIES TO THE RULEMAKING HEARING**

1. Metro Wastewater Reclamation District
2. The City of Grand Junction

**64.29 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE; (February 2007 Hearing)**

The provisions of Colorado Revised Statute Sections 25-8-202(1)(c) and (2), 25-8-205(1)(e), 25-8-501(1) and (2), and 25-8-509 C.R.S, provide the specific statutory authority for the Colorado Biosolids Regulations adopted by the Commission. The Commission has also adopted, in compliance with Colorado Revised Statute Section 24-4-203(4) C.R.S., the following Statement of Basis and Purpose.

**BASIS AND PURPOSE**

The Commission found that revisions to this regulation were necessary to delete outdated language, clarify confusing language, incorporate Senate Bill 171 fee provisions, and establish a state-wide formula specific to biosolids for calculation of plant available nitrogen.

Section 64.3, Applicability, was modified to remove reference to water treatment sludge and the co-application of water treatment sludge with biosolids. Recent legislation, Senate Bill 171, moved the authority to regulate water treatment sludge from the Board of Health to the Hazardous Waste Commission.

The text of Section 64.5 was deleted because all materials incorporated by reference in this regulation have been removed (see explanation below for Sections 64.16(A)(6) and 64.16(B)(2), and such materials will now be included in Division policy. The Commission has reserved this section to accommodate future use if the need arises.

A portion of Section 64.6 regarding extension of compliance deadlines beyond February 19, 1995, was deleted as it is no longer applicable. The text of Section 64.7 was deleted for the same reason and was replaced with a new section regarding fees for the biosolids program. SB 171, moved the sewage sludge (biosolids) fee collection authority from the Board of Health to the Commission. Accordingly, the regulation has been updated to implement fee assessment and billing as well as enforcement.

The Commission found it necessary to update several provisions in the Definitions section of the regulation. Section 64.9(D) was modified to clarify calculation of the agronomic rate to ensure that a consistent method is used by all Colorado preparers, applicators, farmers, regulators and citizens. Historically, this was left to the preparer for interpretation. A workgroup is assisting the Division with developing a policy, "Methodology for Implementation of Regulation 64", that will include a section on agronomic rate calculation. The intent of the policy is to allow all interested parties to easily understand how to calculate plant available nitrogen, and then to compute the biosolids agronomic application rate. The Division policy will be made available on the Department's web page under the Water Quality Control Division Programs. A minor stylistic modification was made to the definition of "Annual Pollutant Loading Limit" in Section 64.9(G). In addition, definitions were added for the following terms to correspond with changes made in other sections of the regulation: "Biosolids Management Plan"; "Site Closure"; and "Site Deactivation." "Persons who Prepare Biosolids" was changed to "Preparer," and "Persons who Apply Biosolids" was changed to "Applier." All remaining definitions were re-lettered accordingly.

Section 64.10(A)(1) was modified to add a paragraph (g) requiring that the Division be notified of other materials to be mixed or applied with biosolids so that appropriate monitoring may be required by the Division, as needed.

Language was added to Section 64.10(A)(3)(d) to clarify that the paragraph pertains to biosolids that exceed the pollutant limit in Table 3 with respect to metals.

Section 64.10(G) was deleted as no longer necessary, and subsequent provisions were re-lettered.

Section 64.10(H) and (I), Terms and Conditions of Notices of Authorization for the Use and Distribution of Biosolids, was modified to require permittees to identify all site closures or site deactivations. This notification will assist the Division and other permittees in determining what sites have had biosolids applied to them, whether a site is still active, and if not, when it was deactivated or closed.

The requirements set forth in Section 64.11 were deleted and the section was reserved for future use (when the Division seeks biosolids program delegation). The Division does not have the delegated authority to implement the federal regulations at this time. In addition, domestic facilities are currently covered under the EPA Region 8 General Sewage Sludge Permit which was implemented in August of 2002 and is scheduled to be renewed August 2007.

Section 64.12(A)(1) was modified to explain the purpose of Table 2, Cumulative Pollutant Loading Rates, which is currently silent on that issue.

Section 64.15(B)(2) was modified to clarify the frequency and method of notification required to assure consistent compliance with this provision. Notification will be accepted at a minimum of one time per calendar year via any of the approved formats. Each biosolids preparer or applier has the freedom to choose the notification process that best fits their operation so small preparers or appliers are not disadvantaged. By making the process of notification easier and at a pre-determined frequency, the Division will be able to identify inactive land application sites.

A new Table 5 was added to Section 64.15(C) to provide a quick reference aid similar to the tables that are currently presented for slope requirements at Section 64.15(E). With the addition of this table, the tables in Section 64.15(E) were re-numbered 6A. and 6B. (previously Tables 5 and 6).

Section 64.15(H), Nutrient Management, was modified to add a paragraph number 4 including a formula which details how plant available nitrogen levels in biosolids must be calculated to ensure a consistent method is used by Colorado preparers, appliers, farmers, regulators and citizens. Historically, this was left to the preparer for interpretation. This formula ensures that plant available nitrogen is calculated uniformly by all interested parties. All remaining items were renumbered accordingly.

The Commission deleted the table in Section 64.16(A)(6), which listed the Division-approved methods for the analysis of sewage sludge for various parameters. It included EPA-approved methods from publication SW-846, which the Commission had incorporated by reference. The Commission found that these methods change frequently and therefore would be better addressed in a more flexible Division policy.

Similarly, Section 64.16(B)(2) was modified to delete the reference to methods for soil analysis from the American Society of Agronomy and Soil Science Society of America. The Commission added language to give the Division general authority to approve methods that will now be included in a more flexible Division policy.

Section 64.16(B)(3) was modified to change the monitoring frequency for soils metals from prior to application and every five years thereafter to prior to application and every ten years thereafter. Currently, entities are required to run two separate extraction methods on soils metals (EPA-TRM, Regulation 64-AB-DTPA). The relaxed frequency will lessen the economic impact of two extractions.

The heading of Section 64.17(B) was modified from "Report Submittal" to "Annual Report Submittal" to clarify the type of report.

Section 64.17(B)(2) was modified to add a new requirement to the annual Self-Monitoring Report. Appliers must now include sufficient information to demonstrate compliance with on-site storage requirements and a list of authorized sites with the status of each. All remaining sections were re-lettered accordingly.

## PARTIES TO THE RULEMAKING HEARING

1. Parker Ag Services, LLC

### **64.30 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE; (January 2008 Hearing)**

The provisions of Colorado Revised Statute Sections 25-8-202(1)(c) and (2), 25-8-205(1)(e), 25-8-501(1) and (2), and 25-8-509 C.R.S, provide the specific statutory authority for the Colorado Biosolids Regulations adopted by the Commission. The Commission has also adopted, in compliance with Colorado Revised Statute Section 24-4-203(4) C.R.S., the following Statement of Basis and Purpose.

#### **BASIS AND PURPOSE**

The Commission found that the reduction of the biosolids fees from \$2.11 per dry ton to \$1.87 per dry ton was necessary because the biosolids program has generated more revenue in the past three years than the legislature has given the program the authority to spend. Therefore the Division is seeking a fee reduction to avoid exceeding the allowable 16.5 % statutory fund balance carryover established under the TABOR amendment. The cost to operate the biosolids program has been below the revenues the program has generated.

### **64.31 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY, AND PURPOSE; February 8, 2010 Hearing; Effective March 10, 2010**

The provisions of Colorado Revised Statute Sections 25-8-202(1)(c) and (2), 25-8-205(1)(e), 25-8-501(1) and (2), and 25-8-509 C.R.S, provide the specific statutory authority for the Colorado Biosolids Regulations adopted by the Commission. The Commission has also adopted, in compliance with Colorado Revised Statute Section 24-4-203(4) C.R.S., the following Statement of Basis and Purpose.

#### **BASIS AND PURPOSE**

The Commission found it necessary to add a new section (Section 64.10(J)) to allow for site transfers between persons in order to facilitate a seamless process. This site transfer process will not only allow farmers to work with the biosolids applier of their choice, but will also help reduce the administrative tasks of the Division. In addition, a definition was added for the term "Site Transfer" to correspond with changes made to the regulation. All remaining definitions were re-lettered accordingly.

The Commission also found that it was appropriate to modify the soil sample analysis method for metals. The method for analysis of soil samples to be performed for metals in Section 64.16(B)(5) was changed from AB-DTPA extraction to the methods listed in the EPA publication "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods," also known as SW-846, which includes EPA Method 3050B. Federal Regulation (40 CFR Part 503.8(b)(4)) requires the methods listed in the SW-846 to be used for biosolids analysis. This change will fully align the soil metals analysis method in this regulation with the Federal Regulation. The Commission found that this will help facilitate a seamless transition from EPA to State oversight when the Division obtains delegation of the biosolids program. Also, this change was necessary to be able to compare the metals accumulated in the soil from biosolids applications to the amount of biosolids metals calculated as the cumulative pollutant loading rates. Because of the addition of the requirement to use EPA Method 3050B is a requirement found in federal regulation, the Commission added "standard" Incorporation by Reference language at Section 64.5 as required by the State Administrative Procedures Act. The section had previously been reserved for this purpose.

The determination of metal speciation in Section 64.16(B)(3) was changed from extractable metals concentrations to total recoverable metals concentrations since EPA Method 3050B yields total recoverable metals concentrations.

Finally, the Commission found that the increase of the biosolids fees from \$1.87 per dry short ton to \$2.40 per dry short ton was necessary to fully fund biosolids program. Program costs have been above the revenues the program has generated.