

STATE OF COLORADO

Bill Ritter, Jr., Governor
James B. Martin, Executive Director

Dedicated to protecting and improving the health and environment of the people of Colorado

4300 Cherry Creek Dr. S.
Denver, Colorado 80246-1530
Phone (303) 692-2000
TDD Line (303) 691-7700
Located in Glendale, Colorado

Laboratory Services Division
8100 Lowry Blvd.
Denver, Colorado 80230-6928
(303) 692-3090

<http://www.cdphe.state.co.us>



Colorado Department
of Public Health
and Environment

NOTICE OF PUBLIC RULEMAKING HEARING BEFORE THE COLORADO WATER QUALITY CONTROL COMMISSION

SUBJECT:

For consideration of revisions to the Animal Feeding Operations Control Regulation, Regulation #81 (5 CCR 1002-81). The revisions to Regulation #81 proposed by the Colorado Department of Public Health and Environment's Environmental Agriculture Program, along with a proposed Statement of Basis, Specific Statutory Authority, and Purpose, are attached to this Notice as Exhibit 1.

In these attachments, proposed new language is shown with double-underlining and proposed deletions are shown with ~~strikeouts~~. Any alternative proposals related to the revisions proposed in Exhibit 1 and developed in response to those proposed revisions will also be considered.

HEARING SCHEDULE:

DATE: April 14, 2008
TIME: 1:00 p.m.
PLACE: Florence Sabin Conference Room
Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado

PUBLIC PARTICIPATION ENCOURAGED:

The Commission encourages all interested persons to provide their opinions or recommendations regarding the matters to be addressed in this rulemaking hearing, either orally at the hearing or in writing prior to or at the hearing. Although oral testimony from those with party status (see below) and other interested persons will be received at the hearing, the time available for such oral testimony may be limited. Written submissions prior to the hearing are encouraged, so that they can be distributed to the Commission for review prior to the hearing. Oral testimony at the hearing should primarily summarize written material previously submitted. The hearing will emphasize Commission questioning of parties and other interested persons about their written prehearing submittals. Introduction of written material at the hearing by those with party status or mailing list status (see below) generally will not be permitted. The Commission requests that all interested persons submit to the Commission any available information that may be relevant in considering the noticed proposals.

PARTY STATUS/MAILING LIST STATUS:

Participation as a "party" to this hearing or acquisition of "mailing list status", will require compliance with section 21.4(D) of the Procedural Rules, Regulation #21 (5 CCR 1002-21). Mailing list status will allow receipt of all party documents (except individual exhibits more than five pages in length). It is not necessary to acquire party status or mailing list status in order to testify or comment. **For each request for party status or mailing list status, please provide the organization's name, a contact person, mailing address,**

phone number, fax number and email address if available. Written party status or mailing list status requests are due in the Commission Office on or before:

DATE: Tuesday, January 29, 2008
TIME: 5:00 p.m.

Party status or mailing list status requests may be submitted by a fax to 303-691-7702 by this deadline, or by email to cdphe.wgcc@state.co.us, provided that the original and three copies have been mailed by this same date, PLEASE NOTE that, as indicated below, parties will have the option of distributing materials to other parties electronically, except in instances where a party has requested receiving hard copies of documents. Therefore, **anyone requesting party or mailing list status who wishes to receive hard copies of documents instead of emailed copies should so indicate in your party status/ mailing list status request so that this information can be included on the list distributed by the Commission Office.**

PREHEARING STATEMENTS:

PLEASE NOTE that for this hearing two separate deadlines for prehearing statements are established: (1) An original and 13 copies of a **Proponent's Prehearing Statement from the Environmental Agriculture Program as proponent of the revisions proposed in Exhibit 1 attached to this notice**, including written testimony and exhibits providing the basis for the proposal, must be received in the Commission Office no later than **February 5, 2008**; and (2) An original and 13 copies of a **Responsive Prehearing Statement**, including any exhibits, written testimony, and alternative proposals of **anyone seeking party status and intending to respond to the Environmental Agriculture Program's proposal** must be received in the Commission Office no later than **March 4, 2008**. [Note: Although the required number of hard copies of documents must be received in the Commission Office by the specified deadlines, **parties are also strongly encouraged to email a copy of their written documents to the Commission Office**, so that materials received can be posted on the Commission's web site. (Please email to cdphe.wgcc@state.co.us.) In addition, copies of these documents shall be mailed or hand-delivered by the specified dates to all persons requesting party status or mailing list status, and to the Attorney General's Office representatives for the Commission and Division, in accordance with a list provided by the Commission Office following the party status/ mailing list status deadline. **Alternatively, parties may email documents to those with party status or mailing list status by the specified dates**, except to those that the list distributed by the Commission Office identifies as requesting hard copies.

Also **note** that the Commission has prepared a document entitled **Information for Parties to Water Quality Control Commission Rulemaking Hearings**. A copy of this document will be mailed or emailed to all persons requesting party status or mailing list status. It is also posted on the Commission's web site noted above, under "General Information – Public Participation in Commission Proceedings". Following the suggestions set forth in this document will enhance the effectiveness of parties' input for this proceeding. **Please note the new request that all parties submit their hard copies of all hearing documents on three-hole punch paper.**

MAILING LIST STATUS COMMENTS:

Those requesting mailing list status shall provide written testimony, if any testimony is to be offered for the hearing, by the above deadline for responsive prehearing statements – i.e., **March 4, 2008**. Copies shall be submitted and distributed in the same manner as noted above for prehearing statements.

REBUTTAL STATEMENTS:

Written Rebuttal Statements responding to the responsive prehearing statements due on March 4, 2008 may be submitted by anyone seeking party status or mailing list status. Any such rebuttal statements must be received in the Commission Office by **April 2, 2008**. An original and 13 copies of written rebuttal statements must be received in the Commission Office by this deadline, and submission of an emailed copy as noted above is strongly encouraged. In addition, copies of these documents shall be mailed or hand-delivered by that date to all those requesting party status or mailing list status, and to the Attorney General's Office representatives for the Commission and Division. **Alternatively, parties may email documents to those with party status or mailing list status by this deadline**, except to those that the list

distributed by the Commission Office identifies as requesting hard copies. No other written materials will be accepted following this deadline except for good cause shown.

PREHEARING CONFERENCE:

DATE: Thursday, March 13, 2008
TIME: 2:00 p.m.
PLACE: Board Room
Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado

PLEASE NOTE: Attendance at the prehearing conference is mandatory for all persons requesting party status. An opportunity may be available to participate in this prehearing conference by telephone. Persons wishing to participate by telephone should notify the Commission Office as early as possible.

SPECIFIC STATUTORY AUTHORITY:

The provisions of sections 25-8-202 and 25-8-401, C.R.S. provide the specific statutory authority for consideration of the regulatory amendments proposed by this notice.

Should the Commission adopt the regulatory language as proposed in this notice or alternative amendments, it will also adopt, in compliance with section 24-4-103(4) C.R.S., an appropriate Statement of Basis, Specific Statutory Authority, and Purpose.

NOTIFICATION OF POTENTIAL MATERIAL INJURY TO WATER RIGHTS:

In accordance with section 25-8-104(2)(d), C.R.S. any person who believes that the actions proposed in this notice have the potential to cause material injury to his or her water rights is requested to so indicate in the party status request submitted. In order for this potential to be considered fully by the Commission and the other agencies listed in the statute, persons must fully explain the basis for their claim in their prehearing statement which is due in the Commission Office on the date specified above. This explanation should identify and describe the water right(s), and explain how and to what degree the material injury will be incurred.

Dated this 11th day of December 2007 at Denver, Colorado.

WATER QUALITY CONTROL COMMISSION



Paul D. Frohardt, Administrator

EXHIBIT 1
ENVIRONMENTAL AGRICULTURE PROGRAM

DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

Water Quality Control Commission

ANIMAL FEEDING OPERATIONS CONTROL REGULATION

5 CCR 1002-81

Materials incorporated by reference in this regulation, including references to the Code of Federal Regulations (C.F.R.), are available for public inspection during regular business hours at the Colorado Department of Public Health and Environment, Water Quality Control Division, 4300 Cherry Creek Drive South, Denver, Colorado. The regulation incorporates the materials as they exist at the date of the current promulgation of this regulation and does not include later amendments to or editions of the incorporated materials. All material incorporated by reference may be examined at any state publications depository library.

81.0 AUTHORITY

Section 25-8-205, C.R.S. as amended of the Colorado Water Quality Control Act.

81.1 APPLICABILITY

The provisions of this control regulation are applicable to all animal feeding operations and concentrated animal feeding operations, except those defined as housed commercial swine feeding operations under section 61.2 of the Colorado Discharge Permit System Regulations, Regulation No. 61. ~~Concentrated animal feeding operations, including H~~ housed commercial swine feeding operations, are subject to permitting requirements under Regulation No. 61. A concentrated animal feeding operation also is subject to permitting requirements under Regulation No. 61 where it discharges or proposes to discharge to waters of the U.S.

81.2 PURPOSE

The purposes of this control regulation are:

- (1) to ensure that discharges to ground water from permitted and non-permitted concentrated animal feeding operations are controlled in a manner consistent with the performance standards as set forth in this regulation.
- (2) to ensure that non-permitted concentrated animal feeding operations protect surface waters of the state.
- (3) to ensure that non-permitted large concentrated animal feeding operations register with the Division.
- (24) to ensure that animal feeding operations that are not defined as concentrated animal feeding operations protect waters of the state through proper application of "best management practices" that consider existing physical conditions and constraints at the facility site.

This regulation is not intended to address public health nuisance conditions or land use controls such as zoning requirements.

81.3 DEFINITIONS

(1) "AGRONOMIC RATE"

"Agronomic rate" means the rate of application of nitrogen to plants that is necessary to satisfy the plants' nutritional requirements while accounting for applicable nitrogen credits.

(2) "ANIMAL FEEDING OPERATION"

An "animal feeding operation" (AFO) means a lot or facility (other than an aquatic animal production facility) where the following conditions are met:

- (a) Animals (other than aquatic animals) have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and
- (b) Crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility.

(3) "BEST MANAGEMENT PRACTICE"

"Best Management Practice" means activities, procedures, or practices necessary for the reduction of impacts from animal feeding operations on surface or ground water, as described in section 81.9.

(4) "CHRONIC STORM"

"Chronic Storm" means a series of storms that occur during a 10-day period which yield a total precipitation of a magnitude that has a probability of recurring once every ten (10) years.

~~(3) "CLOSED FACILITY"~~

~~"Closed Facility" means a concentrated animal feeding operation that has ceased operation and for which a permit is not in effect.~~

(45) "CONCENTRATED ANIMAL FEEDING OPERATIONS"

"Concentrated Animal Feeding Operation" (CAFO) means an AFO that is defined as a Large or Medium CAFO, or that is designated by the Division as a CAFO pursuant to Section 81.4. Two or more AFOs under common ownership are deemed to be a single AFO for the purposes of determining whether they qualify as a Large or Medium CAFO, if they are adjacent to each other or if they use a common area or system for land application of manure or wastewater.

~~(56)~~ "CONVEYANCE STRUCTURE"

"Conveyance Structure" means a natural or constructed conduit (e.g., berm, channel, ditch, pipe, culvert) that carries process-generated wastewater from production area buildings (such as milking barns), or that captures open-lot wastewater from production areas, and diverts the wastewater to an impoundment or between impoundments.

~~(67)~~ "DISCHARGE"

"Discharge" means the introduction or addition of a pollutant into waters of the state.

~~(78)~~ "DIVISION"

"Division" means the Water Quality Control Division of the Department of Public Health and Environment.

~~(9)~~ "FACILITY"

"Facility" means the production area and land application sites of an animal feeding operation or concentrated animal feeding operation.

~~(10)~~ "FREEBOARD"

"Freeboard" means the vertical distance measured downward from the top elevation of an impoundment to the maximum water level.

~~(811)~~ "GROUND WATER"

"Ground Water" means subsurface waters in a zone of saturation which are or can be brought to the surface of the ground or to surface waters through wells, springs, seeps, or other discharge areas.

~~(912)~~ "GROUND WATER RECHARGE"

"Ground water Recharge" means the entry into the saturated zone of water made available at the water-table surface, together with the associated flow away from the water table within the saturated zone.

~~(4013)~~ "IMPOUNDMENT"

"Impoundment" means a natural topographic depression, man-made excavation, or diked area formed primarily of earthen materials (although it may be lined with man-made materials or other seepage control materials), or any other structure which is used for the storage, treatment, evaporation or discharge of pollutant-containing waters, sludge or associated sediment.

~~(4414)~~ "LAND APPLICATION SITE"

"Land Application Site" means land under the control of an animal feeding operation or concentrated animal feeding operation operator, whether it is owned, rented, or leased, to which manure or wastewater from the production area is or may be applied.

~~(4215)~~ "LARGE CONCENTRATED ANIMAL FEEDING OPERATION"

"Large Concentrated Animal Feeding Operation" (Large CAFO) means an AFO that stables or confines as many as or more than the numbers of animals specified in any of the following categories:

- (a) 700 mature dairy cows, whether milked or dry;
- (b) 1,000 veal calves
- (c) 1,000 cattle other than mature dairy cows or veal calves. Cattle includes but is not limited to heifers, steers, bulls, and cow/calf pairs;
- (d) 2,500 swine each weighing 55 pounds or more;
- (e) 10,000 swine each weighing less than 55 pounds;
- (f) 500 horses;

- (g) 10,000 sheep or lambs;
- (h) 55,000 turkeys;
- (i) 30,000 laying hens or broilers, if the AFO uses a liquid manure handling system;
- (j) 125,000 chickens (other than laying hens), if the AFO uses other than a liquid manure handling system;
- (k) 82,000 laying hens, if the AFO uses other than a liquid manure handling system;
- (l) 30,000 ducks (if the AFO uses other than a liquid manure handling system) or
- (m) 5,000 ducks (if the AFO uses a liquid manure handling system).

~~(1316)~~ "MAN-MADE DRAINAGE SYSTEM"

"Man-made drainage system" means a drainage ditch, flushing system, or other drainage device which was constructed by man and is used for the purpose of transporting manure or wastewater.

~~(1417)~~ "MANURE"

"Manure" means feces, litter, and/or urine and materials, such as bedding, sludge, compost, feed waste, dry harvested forage, and any raw material used in or resulting from the operation of an animal feeding operation, that have been commingled with feces, litter, and/or urine.

~~(18)~~ "MEDIUM ANIMAL FEEDING OPERATION"

"Medium Animal Feeding Operation" (Medium AFO) means an AFO with the type and number of animals that fall within any of the ranges listed in section 81.3(19), and which has not been defined or designated as a CAFO.

~~(1519)~~ "MEDIUM CONCENTRATED ANIMAL FEEDING OPERATION"

"Medium Concentrated Animal Feeding Operation" (Medium CAFO) means an AFO with the type and number of animals that fall within any of the ranges listed in (a) below and which has been defined or designated as a CAFO. An AFO is defined as a Medium CAFO if:

- (a) The type and number of animals that it stables or confines falls within any of the following ranges:
 - (I) 200 to 699 mature dairy cows, whether milked or dry;
 - (II) 300 to 999 veal calves;
 - (III) 300 to 999 cattle other than mature dairy cows or veal calves. Cattle includes but is not limited to heifers, steers, bulls, and cow/calf pairs.
 - (IV) 750 to 2,499 swine each weighing 55 pounds or more;
 - (V) 3,000 to 9,999 swine each weighing less than 55 pounds;
 - (VI) 150 to 499 horses;
 - (VIII) 3,000 to 9,999 sheep or lambs;

- (IX) 16,500 to 54,999 turkeys;
- (X) 9,000 to 29,999 laying hens or broilers, if the AFO uses a liquid manure handling system;
- (XI) 37,500 to 124,999 chickens (other than laying hens), if the AFO uses other than a liquid manure handling system;
- (XII) 25,000 to 81,999 laying hens, if the AFO uses other than a liquid manure handling system;
- (XIII) 10,000 to 29,999 ducks (if the AFO uses other than a liquid manure handling system); or
- (XIV) 1,500 to 4,999 ducks (if the AFO uses a liquid manure handling system); and
- (b) Either one of the following conditions are met:
 - (I) Pollutants are discharged into surface waters of the state through a man-made drainage system; or
 - (II) Pollutants are discharged directly into surface waters of the state which originate outside of and pass over, across, or through the facility or otherwise come into direct contact with the animals confined in the operation.

~~(1620)~~ "NEW SOURCE"

"New Source" means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced after the promulgation of standards of performance for the particular source, pursuant to section 306 of the Clean Water Act. The term also applies where a standard of performance has been proposed, provided that the standard is promulgated within 120 days of its proposal. Except as otherwise provided in an applicable new source performance standard, a source is a "new source" if it meets this definition of "new source", and:

- (a) It is constructed at a site at which no other source is located; or
- (b) It totally replaces the process or production equipment that causes the discharge of pollutants at an existing source; or
- (c) Its processes are substantially independent of an existing source at the same site. In determining whether these processes are substantially independent, the Division shall consider such factors as the extent to which the new facility is integrated with the existing plant; and the extent to which the new facility is engaged in the same general type of activity as the existing source.

~~(1721)~~ "OPEN-LOT WASTEWATER"

"Open-Lot Wastewater" means any precipitation that comes into contact with manure; any spillage or overflow from animal or poultry watering systems in production area facilities that are not roof-covered; and spray-cooling water used in open-sided pole sheds that are not flushed.

~~(1822)~~ "OPERATOR"

"Operator" means any person who owns, leases, operates, controls, or supervises an animal feeding operation or concentrated animal feeding operation.

~~(1923)~~ "PERMIT"

"Permit" means a permit issued pursuant to Regulation #61 of the Water Quality Control Commission and therefore includes Colorado Discharge Elimination System permits, including new permits, renewals, general permits, GPPA permits and temporary permits.

~~(2024)~~ "PERSON"

"Person" means an individual, corporation, partnership, association, state or political subdivision thereof, federal agency, state agency, municipality, commission, or interstate body.

~~(2425)~~ "POLLUTANT"

"Pollutant" means dredged spoil, dirt, slurry, solid waste, incinerator residue, sewage, sewage sludge, garbage, trash, chemical waste, biological nutrient, biological material, radioactive material, heat, wrecked or discarded equipment, rock, sand, or any industrial, municipal, or agricultural waste.

~~(2226)~~ "PROCESS-GENERATED WASTEWATER"

"Process-generated Wastewater" means wastewater, except tank overflow and open-lot wastewater, resulting from waters being directly or indirectly used in the operation of an animal feeding operation for any or all of the following: spillage or overflow from animal or poultry watering systems, washing, cleaning, or flushing barns, manure pits, or other roof-covered production area facilities; washing of animals; spray-cooling of animals (except in open-sided pole barns in open lots); cooling or cleaning feed mills (also known as blowdown water); or direct contact swimming by animals. Process-generated wastewater includes any wastewater, except tank overflow and open-lot wastewater, which results from water coming into contact with any raw materials, products, or byproducts, including manure, litter, feed, milk, or eggs.

~~(2327)~~ "PRODUCTION AREA"

"Production Area" means that part of an AFO or CAFO that includes the animal confinement area, the manure storage area, the raw materials storage area, and wastewater containment areas. The animal confinement area includes but is not limited to open lots, housed lots, feedlots, confinement houses, stall barns, free stall barns, milkrooms, milking centers, cowyards, barnyards, medication pens, walkers, animal walkways, and stables. The manure and residual solids storage area includes but is not limited to lagoons, runoff ponds, storage sheds, stockpiles, under house or pit storages, liquid impoundments and tanks, static piles, and composting piles. The raw materials storage area includes but is not limited to feed silos, silage bunkers, and bedding materials. The waste containment area includes but is not limited to settling basins, and areas within berms and diversions which separate uncontaminated storm water. Also included in the definition of production area is any egg washing or egg processing facility, and any area used in the storage, handling, treatment, or disposal of mortalities.

~~(2428)~~ "PUBLIC DRINKING WATER SYSTEM"

"Public Drinking Water System" means a system for the provision to the public of piped water for human consumption, if such system has at least 15 service connections or serves an average of at least 25 persons daily at least 60 days out of the year. A public drinking system includes both community and non-community systems.

~~(2529)~~ "SETBACK"

"Setback" means a specified distance from waters of the state, or potential conduits to waters of the state.

~~(2630)~~ "SMALL CONCENTRATED ANIMAL FEEDING OPERATION"

"Small Concentrated Animal Feeding Operation" (Small CAFO) means an AFO that is designated by the Division as a CAFO, and is not a Medium CAFO.

(31) "SOLID/LIQUID WASTE SEPARATION FACILITY"

A "Solid/Liquid Waste Separation Facility" means a filtration or screening device, settling tank, settling channel used to separate a portion of solids from a liquid wastewater stream.

(32) "STOCK WATERING POINT"

"Stock Watering Point" means a fenced area with a hardened surface that limits access to surface water for a very small number of animals (typically one or two at a time) for the purpose of the animals obtaining drinking water.

(33) "STORMWATER"

"Stormwater means precipitation induced surface runoff from land, except that defined as wastewater.

(2734) "SURFACE WATER"

"Surface Water" means all waters of the state, except ~~subsurface waters~~ ground water, and ~~but including~~ ground water that may be hydrologically connected to non-subsurface water.

(2835) "TANK"

"Tank" means a stationary device designed to contain an accumulation of pollutant-containing water, which is constructed primarily of non-earthen materials (e.g., wood, concrete, steel, plastic) which provide structural support.

(2936) "TANK OVERFLOW"

"Tank Overflow" means livestock drinking water in constant-flow ~~cattle~~ watering troughs that overflows into in-trough drain pipes and is retained separately from ~~process~~ wastewater storage.

(37) "25-YEAR, 24-HOUR STORM"

"25-Year, 24-Hour Storm" means a storm of a 24-hour duration which yields a total rainfall of a magnitude which has a probability of recurring once every twenty-five years.

(3038) "WASTEWATER"

"Wastewater" means that defined as process-generated wastewater and/or open-lot wastewater.

(39) "WASTEWATER TREATMENT STRIP"

"Wastewater Treatment Strip" means a treatment component of an agricultural waste management system consisting of a strip or area of herbaceous vegetation that assimilates pollutants and within which wastewater runs via sheet flow.

(3440) "WATERS OF THE STATE"

"Waters of the State" means any and all surface and subsurface waters which are contained in or flow in or through this state, except waters in sewage systems, waters in treatment works of disposal systems, waters in potable water distribution systems, and all water withdrawn for use until use and treatment have been completed.

(41) “WATERS OF THE U.S.”

“Waters of the U.S.” means waters as defined in 40 C.F.R. Part 122.2.

(3242) “WATER QUALITY STANDARD”

“Water Quality Standard” means any standard promulgated pursuant to section 25-8-204, C.R.S.

81.4 DESIGNATION OF AN ANIMAL FEEDING OPERATION AS A CONCENTRATED ANIMAL FEEDING OPERATION

The Division may designate any AFO as a CAFO upon performing an on-site inspection and determining that it reasonably could be a significant contributor of pollutants to ~~surface water~~ waters of the U.S.

- (1) The following criteria shall be considered to determine if an AFO will be designated as a CAFO:
 - (a) The size of the AFO and the amount of ~~wastes~~ manure and wastewater reaching ~~surface water~~ waters of the U.S.;
 - (b) The location of the AFO relative to ~~surface water~~ waters of the U.S.;
 - (c) The means of conveyance of ~~animal wastes~~ manure and wastewater into ~~surface water~~ waters of the U.S.;
 - (d) The slope, vegetation, rainfall, and other factors affecting the likelihood or frequency of discharge of manure and wastewater into ~~surface water~~ waters of the U.S.; and
 - (e) Other relevant factors.
- (2) No AFO with animal numbers below those established for a Medium CAFO shall be designated as a CAFO unless:
 - (a) Pollutants are discharged into ~~surface water~~ waters of the U.S. through a manmade ditch, flushing system, or other similar manmade device from the animal feeding operation; or
 - (b) Pollutants from the animal feeding operation are discharged directly into ~~surface water~~ waters of the U.S. that originate outside of the facility and pass over, across, or through the facility or otherwise come into contact with the animals confined in the operation.
- (3) Where an AFO is at risk of being designated a CAFO, the AFO operator shall submit to the Division, within 60 days of receiving written notice by the Division of such a risk, one of the following:
 - (a) In consultation with the Division, an approvable work plan and associated timeline for reducing actual or potential environmental impacts such that the Division would not designate the AFO as a CAFO. The operator shall implement the plan within 30 days of it being approved by the Division; or
 - (b) A written statement indicating the operator's intention to operate as a CAFO and submit a complete application to be covered under a CAFO discharge permit within 180 days of the date of such statement.
- (4) Where an operator does not complete and implement a work plan pursuant to section 81.4(3)(a), or does not submit a written statement pursuant to section 81.4(3)(b), the AFO may be

designated a CAFO by the Division and be required to submit a complete application to be covered under a CAFO discharge permit within 90 days of receiving written notice by the Division of such a designation and permit application requirement.

81.5 REQUIREMENT TO REGISTER WITH DIVISION - NON-PERMITTED LARGE CAFOs

The operator of a Large non-permitted CAFO shall register the facility with the Division by no later than February 27, 2009.

(1) The registration shall be submitted to the Division and include the following information about the facility:

(a) Legal name

(b) Names of legal owner and current operator

(c) Facility phone number

(d) Physical address

(e) Mailing address

(f) County in which the facility exists

(g) Latitude/longitude coordinates at the entrance of the facility and source of the datum

(h) Maximum number and type of all animals the facility will confine in the production area

(i) A Standard Operating Procedure (SOP) for removal of manure from impoundments in accordance with section 81.8(3), unless the facility has previously submitted such an SOP.

(2) At such time that any of the above information changes, the operator shall submit to the Division a revised registration by no later than 30 days after a change occurs.

81.6 FACILITY MANAGEMENT PLAN: NON-PERMITTED LARGE CAFOs

The operator of a non-permitted Large CAFO shall develop and implement a facility management plan (FMP). The FMP must, to the extent applicable, include the following information. Elements of the FMP specified in sections 81.6(1), 81.6(2), and 81.6(3) shall be included in the FMP by the dates indicated in the respective sections.

(1) Surface water protection elements – Production Area. The operator of a non-permitted Large CAFO must develop and implement the following design, construction, and performance requirements for the production area by no later than May 30, 2011. The operator of such a CAFO that comes into existence after May 30, 2011, shall develop and implement the requirements upon being defined as such a CAFO.

(a) By the implementation deadline stated in section 81.6(1), as applicable, the operator shall include in the FMP the requirements that have been developed and implemented.

(b) Control of wastewater shall be accomplished using the following structures, methods, and procedures:

- (i) An impoundment(s) designed, constructed, and maintained so that it is capable of storing, the volume of all liquid manure and wastewater, including the runoff resulting from a 25-year, 24-hour storm or Chronic Storm, whichever is greater, plus two (2) feet of freeboard.
- (ii) A conveyance structure(s) designed, constructed, and maintained so that it is capable of carrying the flow expected from a 25-year, 24-hour storm or Chronic Storm, whichever is greater.
- (iii) For open lot wastewater only, in addition to the conveyance structures as described in section 81.6(1)(b)(ii), one of the following structures or methods: 1) an impoundment(s) designed, constructed, and maintained as described in section 81.6(1)(b)(i); 2) a solid/liquid waste separation facility in conjunction with a wastewater treatment strip designed, constructed, and maintained in accordance with sections 81.6(1)(b)(iii)(A-B), below; or, 3) a method approved by the Division.

 - (A) A solid/liquid waste separation facility in conjunction with a wastewater treatment strip designed, constructed, and maintained so that it is capable of managing the flow expected from a 25-year, 24-hour storm or Chronic Storm, whichever is greater.
 - (B) The system described in subsection (A) above shall also be designed in accordance with United States Department of Agriculture – Natural Resources Conservation Service standards, or other standards approved by the Division.
- (iv) For process-generated wastewater, the operator may use the wastewater control system described in section 81.6(1)(b)(iii) where the Division approves a plan submitted by the operator demonstrating that the system will be sustainable, including that wastewater released into the treatment strip will be properly assimilated by the vegetation.
- (c) Install a depth marker(s) in all discharging impoundments to clearly indicate the minimum capacity necessary to contain a 25-year, 24-hour storm or Chronic Storm, whichever is greater. In addition, depth markers shall be clearly marked, at minimum, in one (1) foot increments.

 - (i) Perform weekly inspections of depth markers and record the wastewater level in each discharging impoundment as indicated by the depth markers.
- (d) Design, construct, and maintain structures that are sized to divert stormwater from running onto a production area as the result of a 25-year, 24-hour storm or Chronic Storm, whichever is greater.
- (e) Procedures to ensure proper operation and maintenance of the impoundments, including the following:

 - (i) Whenever the storage capacity of impoundments and tanks is less than the volume required to store runoff from the designed storm event, the structures shall be dewatered to a level that restores the required capacity once soils on a land application site has the water holding capacity to receive the wastewater, or in accordance with section 81.6(2)(b)(i)(C).

- (2) Surface water protection elements – Land Application Sites. The operator of a non-permitted Large CAFO shall develop and implement the following practices and procedures for land application sites by no later than February 27, 2009. The operator of such a CAFO that comes into existence after February 27, 2009, shall develop and implement the practices and procedures upon being defined as such a CAFO.
- (a) By the implementation deadline stated in section 81.6(2), as applicable, the operator shall include in the FMP the developed and implemented practices and procedures.
- (b) Apply manure and wastewater to a land application site in accordance with the following practices and procedures beginning no later than February 27, 2009. The operator of such a CAFO that comes into existence after February 27, 2009 shall so apply manure and wastewater upon being defined as such a CAFO.
- (i) Conservation Practices - Site-specific conservation practices that have been identified and implemented, including as appropriate, buffers or equivalent practices, to control runoff of pollutants to surface water. Such practices shall include, but are not limited to:
- (A) Solid manure shall be incorporated as soon as possible after application, unless the application site has perennial vegetation or is no-till cropped, or except where the operator adequately demonstrates that surface water quality will be protected where manure is not so incorporated.
- (B) Where wastewater is applied to a land application site via furrow- or flood-irrigation, it shall be applied in a manner that prevents any wastewater runoff into surface water.
- (C) There shall be no discharge to surface water from land application activities when the ground is frozen or saturated.
- (D) Manure or wastewater shall not be land-applied within 150 feet of domestic water supply wells, and within 300 feet of community domestic water supply wells.
- (ii) Sampling and Analysis - Manure, wastewater, and soil shall be sampled and analyzed with the following frequency. The results of the analyses shall be used in determining application rates for manure and wastewater.
- (A) Manure and wastewater shall be sampled and analyzed a minimum of once annually for nitrogen and phosphorus content.
- (B) The top one foot of soil of land application sites shall be sampled and analyzed for available phosphorus a minimum of once every five years, or as otherwise necessary to meet the transport risk assessment requirements of section 81.6(2)(c)(i), below.
- (iii) Protocols established by the operator for land applying manure or wastewater in accordance with site specific nutrient management practices that ensure appropriate utilization of the nutrients in the manure or wastewater. Such protocols shall include, but are not limited to:
- (A) No application of manure or wastewater shall be made to a land application site at a rate that will exceed the capacity of the soil and the

planned crops to assimilate plant available nitrogen within twelve (12) months of the manure or wastewater being applied.

(B) Manure and wastewater shall be applied as uniformly as possible with properly calibrated equipment.

(C) Application rates of manure and wastewater shall be calculated using: 1) the current published fertilizer suggestions of Cooperative Extension in Colorado or adjacent states; 2) a method provided in a complete and current Comprehensive Nutrient Management Plan (CFMP) that meets United States Department of Agriculture – Natural Resources Conservation Service standards; 3) the current nutrient management planning guidelines for Colorado as published by the United States Department of Agriculture – Natural Resources Conservation Service; or, 4) a method approved by the Division.

(iv) Records - Records identified by the operator that will be maintained to document the implementation and management of the elements described in sections 81.6(2)(b)(i-iii), above.

(A) Such records shall be maintained on-site for five years from the date they are created.

(B) Such records shall be made available to the Division or its designee, upon request.

(c) Nutrient Transport Minimization - Application rates for manure and wastewater applied to a land application site must minimize phosphorus and nitrogen transport from the sites to surface water and shall be in accordance with the following standards.

(i) Assessments shall be made for each land application site of the potential for phosphorus and nitrogen transport from the site to surface water and that address the form, source, amount, timing, and method of application of nitrogen and phosphorus to achieve realistic yield goals, while minimizing nitrogen and phosphorus movement to surface water.

(A) Phosphorus transport risk assessments shall be made using a transport risk-screening tool approved by the Division and that is current, readily available, peer-reviewed, and appropriate for use in Colorado. The screening tool shall provide for off-site transport risk scores of either 'low', 'medium', 'high', and 'very high'.

(B) An initial assessment of the potential for phosphorus and nitrogen transport risk to surface water shall be made prior to manure or wastewater being applied to an application site after the operator's Facility Management Plan (FMP) is implemented.

(ii) Phosphorus-based manure and wastewater application rates shall be made to an application site where the risk of off-site phosphorus transport is scored as 'high'.

(iii) No application of manure or wastewater shall be made to a land application site where the risk of off-site phosphorus transport is rated as 'very high'. Where the initial assessment of a land application site is scored as 'very high', the operator shall have a three-year period within which to manage the site for the purpose of lowering the phosphorus transport risk assessment rating to 'high' or less.

During this period, manure and wastewater may be applied to the site at either nitrogen- or phosphorus-based rates.

- (iv) No application of manure or wastewater shall be made to a land application site where the risk of off-site nitrogen transport to surface water is not minimized.
- (v) After an initial assessment is made of the potential for phosphorus and/or nitrogen transport from a land application site to surface water, additional assessments shall be made at the following frequency, whichever is sooner:
 - (A) Of both phosphorus and nitrogen transport risk, every five (5) years; or,
 - (B) Where a crop management change has occurred, assess phosphorus transport risk within one (1) year after such change would reasonably result in an increase in the phosphorus transport risk assessment score, and assess nitrogen transport risk within one (1) year after such a change would reasonably result in the nitrogen transport to surface water not being minimized; or,
 - (C) Where a phosphorus transport risk assessment score was 'very high', assess phosphorus transport risk within six (6) months of intending to apply manure or wastewater, except as provided in section 81.6(2)(c)(iv), above.
 - (D) Where a nitrogen transport risk assessment reveals that nitrogen transport to surface water is not minimized, assess nitrogen transport risk within six (6) months of intending to apply manure or wastewater.
- (vi) Where a multi-year phosphorus application was made to a land application site, no additional manure or wastewater shall be applied to the same site in subsequent years until the applied phosphorus has been removed from the site via harvest and crop removal.
- (c) Inspect Land Application Equipment - Periodically inspect for leaks equipment used for land application of manure or wastewater. At minimum, such inspection shall be made annually and within the six month period prior to the first application of manure or wastewater, and at least once daily when wastewater is being applied.
- (d) Setback Requirements – Unless the operator exercises one of the alternatives provided below, manure and wastewater shall not be applied closer than 100 feet to any down-gradient surface waters, open tile line intake structures, sinkholes, agricultural well heads, or other conduits to surface water.
 - (i) As a setback alternative, the operator may substitute the 100-foot setback with a 35-foot wide vegetated buffer where applications of manure or wastewater are prohibited.
 - (ii) The Division may approve an alternative setback or buffer based on a demonstration by the operator that a required setback or buffer is not necessary because implementation of alternative conservation practices or land application site conditions will provide pollutant reductions equivalent or better than the reductions that would be achieved by the 100-foot setback.

- (e) Mortalities - Ensure proper management of animal mortalities to ensure that they are not disposed of in a wastewater storage system that is not specifically designed to treat animal mortalities.
- (f) Prevent direct contact of confined animals with surface water.
- (g) Ensure that chemicals and other contaminants handled on-site are not disposed of in any manure or wastewater storage system unless specifically designed to treat such chemicals and other contaminants.
- (3) Ground water protection elements – Production Area. The operator of a non-permitted Large CAFO shall include in the FMP the following information by no later than February 27, 2009. After February 27, 2009, the FMP shall be updated as necessary to meet the requirements of the sections of this regulation cited below, and by the deadlines specified in the sections.
 - (a) The impoundment liner certification(s) specified in section 81.8(2)(b).
 - (b) The current approved Standard Operating Procedure (SOP) specified in section 81.8(3)(a).
 - (c) Information demonstrating that the facility is in compliance with the depth marker, conveyance structure, and setback requirements specified in sections 81.8(4-6).

81.7 ADDITIONAL REQUIREMENTS – NON-PERMITTED LARGE CAFOs

- (1) Performance Standards – Surface Water Protection
 - (a) There shall be no discharge of manure or wastewater from the production area to waters of the U.S. without a discharge permit.
 - (b) There shall be no discharge of manure or wastewater from the production area to surface water, except whenever precipitation causes a discharge and the production area is designed, constructed, operated, and maintained to contain all manure and wastewater, including the runoff and direct precipitation from a 25-year, 24-hour storm or Chronic Storm, whichever is greater.
 - (c) The discharge of manure and wastewater to waters of the U.S. from a CAFO as the result of the application of that manure or wastewater by the CAFO to a land application site is a discharge from that CAFO subject to permit requirements, except where it is an agricultural storm water discharge. Where the manure or wastewater has been applied in accordance with the requirements of sections 81.6(2)(a-d), a precipitation-related discharge of manure or wastewater from the site to waters of the U.S. is an agricultural storm water discharge.
 - (d) Manure and wastewater shall not be applied directly to surface water.
- (2) Recordkeeping – The operator shall create, maintain at the facility for five years from the date they are created, and make available to the Division or its designee, upon request, the following records:
 - (a) A copy of its current FMP shall be compiled and maintained in one discrete place at the facility, such as an office or filing cabinet.
 - (b) The land application records specified in section 81.6(2)(a)(iv).

(c) Weekly records of the depth of the manure and wastewater in discharging impoundments as indicated by the depth markers, as a result of the inspections required by section 81.6(1)(c)(i).

(d) The records and certifications specified in sections 81.8(2)(c) and 81.8(3)(d).

(3) Discharge Reporting – The operator shall notify the Division of a discharge of manure or wastewater to surface water.

(a) Such notification shall be made by telephone, electronic mail, or facsimile within 24 hours after the operator becomes aware of the discharge.

(b) The notification shall describe, at minimum, the date, time, cause of the discharge, approximate volume of the discharge, the estimated length of time of the discharge, the level of wastewater in the discharging impoundment(s), and whether the discharge entered, or could enter, waters of the U.S.

81.58 GROUND WATER PROTECTION REQUIREMENTS - CONCENTRATED ANIMAL FEEDING OPERATIONS (PERMITTED AND NON-PERMITTED)

(1) Tanks at concentrated animal feeding operations shall be operated and maintained so as not to discharge wastewater to ground water.

(2) Impoundment liners

(a) An impoundment at a concentrated animal feeding operation shall be constructed and maintained to comply with one of the following standards, as applicable:

(i) The seepage rate from an impoundment shall not exceed 1×10^{-6} cm/sec; or

(ii) Where approved by the Division for an impoundment with an earthen liner, the seepage rate from the impoundment shall not exceed 7.35×10^{-6} cm/sec. The operator of the impoundment shall submit to the Division a request that the impoundment be approved to meet this seepage standard. Such a request shall include, but not be limited to, information documenting that only open-lot wastewater will be diverted to the impoundment, that the impoundment is not designed as an evaporation impoundment, and that the ten (10) foot soil depth zone immediately beneath the impoundment has a cation exchange capacity of at least 15 meq/100 g of soil. Demonstration of compliance with the cation exchange capacity criteria requires the following:

~~(H)~~(A) At least seven soil samples shall be acquired from below the entire surface area of the impoundment and analyzed for cation exchange capacity.

~~(H)~~(B) The soil samples shall be reasonably equidistant from each other, with five locations being within ten feet of, and downslope of, the two-foot freeboard elevation of the impoundment, and two locations from the middle of the impoundment.

~~(H)~~(C) The operator shall have available a map of the impoundment and soil sampling locations.

~~(H)~~(D) Where soil samples were taken below existing impoundments, the operator shall have available documentation from a professional

engineer registered in the State of Colorado of how the core locations were sealed to meet a 1×10^{-6} cm/sec maximum seepage rate.

- (b) CAFO operators shall have available documentation, including supporting information, prepared by a professional engineer registered in Colorado certifying that the provisions of section 81.58(2) have been met, and stating what constitutes each constructed liner (e.g., synthetic, clay). ~~For impoundments constructed prior to June 30, 2004, such documentation shall be available no later than April 13, 2006. For any impoundment constructed by an operator on or after June 30, 2004 such documentation shall be available at least 30 days prior to wastewater entering the impoundment.~~ Copies of such documentation shall be made available to the Division or its designee, upon request.
- (i) For impoundments constructed prior to June 30, 2004, such documentation shall be available no later than April 13, 2006.
 - (ii) For any impoundment constructed by an operator on or after June 30, 2004 such documentation shall be available prior to wastewater entering the impoundment.
 - (iii) Supporting information shall include, but not be limited to, the following information, as appropriate for each liner:
 - (A) The method used to determine the maximum seepage rate for each liner (e.g., the taking and analysis of cores from an earthen liner, the specific in-situ analysis)
 - (B) The number of cores taken in each earthen liner and analyzed for permeability
 - (C) The location of cores taken in each earthen liner
 - (D) The seepage rate calculations using Darcy's Law
 - (E) The mil rating of plastic liners and the specifications to which the liners were installed.
 - (F) For a concrete liner, that a visual inspection revealed that the concrete is free of visible defects and distress that would reasonably cause the liner to not be capable of having a maximum seepage rate of 1×10^{-6} cm/sec.
- (c) A CAFO operator shall visually inspect the exposed liner of an ~~earthen~~ impoundment weekly to identify physical changes or deficiencies that may affect the integrity of the liner. Such deficiencies and physical changes shall be corrected within thirty (30) days of having been identified.
- (i) The operator shall record the date of the inspection, deficiencies identified, corrective actions taken, and dates that corrective action was completed.
 - (ii) Deficiencies not corrected within 30 days shall be accompanied by an explanation of the factors preventing completion of corrective actions within this time period.
 - (iii) The records shall be maintained on-site for five years from the date of creation and shall be made available to the Division upon request.

- (3) Removal of manure or wastewater from an impoundment shall be accomplished in a manner that does not damage the integrity of the liner. The operator shall submit to the Division for approval a Standard Operating Procedure ("SOP") that demonstrates how manure, including sludge, will be removed such that the liner integrity of impoundments is not damaged. The SOP also shall indicate the expected frequency with which manure will be removed from impoundments.

(a) The approved SOP must be available on-site and be submitted to the Division upon request.

(ab) The operator shall follow the approved SOP whenever manure, including sludge, is removed. Where the SOP was not followed, the Division may require that the operator make the liner available for inspection. Where the Division has just cause as a result of the inspection, the Division may require re-certification of the liner by a professional engineer registered in Colorado.

(bc) An existing CAFO shall submit the SOP no later than December 31, 2004. ~~A new CAFO shall submit the SOP no later than 120 days after animals are placed on the production area.~~

(i) A CAFO that comes into existence after December 31, 2004 shall submit the SOP no later than 120 days after animals are placed on the production area.

(ii) The operator shall submit a revised SOP for approval within 30 days of a change having been made to the impoundment(s) at the facility that requires a revision of the SOP, such as a new impoundment or different liner having been constructed.

(ed) The operator shall certify after each manure or sludge removal event that the manure or sludge was removed in accordance with the approved SOP.

(i) For a concrete-lined impoundment, where a certification for each removal event is not completed, the operator shall:

(A) Drain and clean the impoundment every five years and use best professional judgment to determine whether the liner integrity is damaged such that the impoundment is no longer capable of having a maximum seepage rate of 1×10^{-6} cm/sec.

(B) Where the operator determines that the liner integrity is such that the impoundment remains capable of having a maximum seepage rate of 1×10^{-6} cm/sec, the operator shall so certify within five days of the liner inspection. The certification shall include photographs supporting the determination.

(C) Where the operator determines that the liner integrity is damaged such that the impoundment is no longer capable of having a maximum seepage rate of 1×10^{-6} cm/sec, the operator shall:

(I) Repair the impoundment within 30 days of the liner inspection so that the liner integrity is such that the impoundment is capable of having a maximum seepage rate of 1×10^{-6} cm/sec.

(II) Within 14 days of the impoundment having been repaired, submit to the Division evidence of the repair having been properly completed. The evidence shall consist either of

photographs with accompanying written documentation or of other evidence approved by the Division.

- (dii) The certifications ~~and approved SOP~~ must be available on-site and be submitted to the Division upon request.
- (e) Where the SOP is not followed the operator shall provide notice to the Division within 30 days of the date of manure removal.
- (4) Any depth marker in an impoundment shall be installed in a manner that maintains the integrity of the liner and maintains the required seepage rate standard.
- (5) Earthen Wastewater Conveyance Structures - Earthen conveyance structures shall be maintained to minimize ponding of wastewater. In addition, such structures shall be constructed and maintained as follows for the purpose of limiting seepage of wastewater in the structures:
 - (a) Conveyance structures that carry open-lot wastewater
 - (i) Where constructed in soils that have 35-60 percent gravel, a conveyance structure shall be constructed by sufficiently compacting the existing soil material (less than 60 percent gravel) in place with at least two passes of rubber-tired construction equipment, four passes of track-type equipment, or equivalent, over the entire surface of the conveyance structure. Moisture content of the soil material during compaction shall be maintained to promote sufficient compaction of the in-place materials. The soil should be wet to the touch and leave a stain on the hand when squeezed.
 - (ii) Where constructed in soils that have greater than 60 percent gravel, or in loamy sand or sandy soils with greater than 35 percent gravel, a conveyance structure shall be constructed by placing a compacted liner over the entire surface of the conveyance structure. A conveyance structure liner shall be constructed of soils having less than 60 percent gravel, shall be twelve (12) inches thick, and shall be compacted with at least two passes of rubber-tired construction equipment, four passes of track-type equipment, or equivalent, over the entire surface of the conveyance structure. Moisture content of the soil material during compaction shall be maintained to promote sufficient compaction of the soil liner material. The soil should be wet to the touch and leave a stain on the hand when squeezed. In addition, the constructed liner shall be maintained to retain these standards.
 - (iii) Where constructed in soils having less than 35 percent gravel, a conveyance structure does not need to be lined or compacted.
 - (b) Conveyance structures that carry process-generated wastewater intermittently (greater than 48 hours between conveyance events) – Earthen conveyance structures that carry process-generated wastewater intermittently shall be constructed and maintained in accordance with the standards specified in section 81.58(a)(ii), above.
 - (c) Conveyance structures that carry process-generated wastewater non-intermittently (48 hours or less between conveyance events) – Earthen and non-earthen (e.g., pipe or concrete) conveyance structures that carry process-generated wastewater non-intermittently shall be constructed and maintained to have a maximum seepage rate of 1×10^{-6} cm/sec.

- (d) Where upon inspection the Division has just cause to determine that the required liner is not in place, the Division may require that the operator submit to the Division a certification that the conveyance structure meets the requirements of section 81.58(5)(b) or (c), or 81.58(5)(a)(ii). The certification shall be made by a professional engineer registered in the State of Colorado.
- (6) Setbacks for Impoundments – Impoundments of new source CAFOs shall not be located:
- (a) ~~For earthen lined impoundments, where the seasonally high ground water level is located within 20 feet of the soil surface; and~~
- (ba) Except as provided below, Where the seasonally high ground water level is located within four (4) feet of an impoundment bottom the bottom of the impoundment liner; and
- (i) Where the seasonally high ground water level is located within four (4) feet of the bottom of the impoundment liner, the impoundment shall be constructed and maintained in accordance with the design by a professional engineer registered in the state of Colorado that prevents ground water from contacting the impoundment's liner.
- (eb) Within 150 feet of a private domestic water supply well or within 300 feet of a community domestic water supply well.
- (7) Ground Water Monitoring - Where an impoundment is not in compliance with section 81.58(2), or where the Division determines that an impoundment liner is not being properly maintained, the Division may require the operator to conduct site-specific ground water quality monitoring of, but not limited to, total nitrogen, ammonia-nitrogen, nitrate-nitrogen, and fecal coliform. In making a determination of whether ground water monitoring is required, the Division shall consider all pertinent factors, including but not limited to: whether the impoundment poses a significant potential risk to beneficial uses of ground water, whether there is suspected contamination of ground water attributable to the facility, whether early detection of ground water contamination is essential to protect valuable drinking water sources, and whether there has been a significant failure on the part of the operator to comply with Section 81.58(2), (3), (4), (6), or (7).
- (8) Ground Water Remediation - When the Division determines that non-compliance with Section 81.8(2), (3), (4), (6), or (7) has caused, or contributed to, the exceedance of established ground water quality standards, the Division will require the operator to prepare a ground water remediation plan (RP) within 60 days. The RP will delineate the nature and extent of the release by identifying:
- (a) The full vertical and horizontal extent of ground water impacts.
- (b) All potential human and environmental receptors, including:
- (i) All surface water features including springs, streams, and lakes that could be impacted.
- (ii) All municipal, agricultural, and domestic ground water users.
- (c) Other site-specific hydrogeologic data related to the fate and transport of the release. These should include, but not be limited to, the hydraulic conductivity of all hydrogeologic units, associated porosity values, ground water flow directions, regional and local hydraulic gradients, and pumping rates associated with all wells.

The RP will also include a comparison of all appropriate and applicable remediation alternatives, including innovative technologies, the associated performance and costs of each alternative, and estimated timelines to achieve the required remediation goals. Remediation alternatives will be reviewed based on technological, economic, and environmental risk factors. In determining economic reasonableness the Division may take into account such factors as costs of the various alternatives, the potential impact of the alternatives on a project's profitability or competitive position, and any long-term energy impacts. In determining environmental risk factors the Division will include potential exposures of sensitive human and environmental receptors. In cases where sensitive human and environmental impacts could occur, the Division may require interim, or emergency, remedial activities. After review and approval of the RP the Division will require that the operator submit associated design and plans for implementation of the preferred alternative.

- (89) Impoundment Closure – The operator of a A-closed facility shall remove manure and wastewater from all a closed impoundments, to the fullest extent practicable within 60 days of the impoundment being closed, unless an alternative timeline is approved by the Division, and backfill Within one hundred twenty (120) days of an impoundment being closed, earthen impoundments an impoundment shall be backfilled with at least five (5) feet of soil that is graded to blend with surface topography and prevent ponding within one hundred twenty (120) days of the facility being closed, unless an alternative procedure and timeline is approved by the Division.

81.69 ANIMAL FEEDING OPERATIONS - BEST MANAGEMENT PRACTICES

The following Best Management Practices (BMPs) shall be utilized by animal feeding operations, as appropriate based upon existing physical conditions, and site constraints. Best management practices means, for purposes of this regulation, activities, procedures, or practices necessary for the reduction of impacts from animal feeding operations on surface or ground water, as described in Section 81.69.

The following practices, designed to decrease runoff volume from animal feeding operations, are BMPs within the meaning of this regulation:

- (1) Operators of animal feeding operations shall divert runoff from uncontaminated areas away from animal confinement areas and manure and wastewater control facilities to the extent practicable through:
 - (a) Construction of ditches, terraces or other waterways;
 - (b) Installation of gutters, downspouts and buried conduits to divert roof drainage;
 - (c) Construction of roofed areas over animal confinement areas everywhere it is practicable.
- (2) Practices to decrease open lot surface area:
 - (a) Where practicable, operators of animal feeding operations shall:
 - (i) Reduce lot size;
 - (ii) Improve lot surfacing to support increased animal density;
 - (iii) Provide roofed area to the maximum extent practicable; and
 - (iv) ———Collect manure frequently; and

- (v) Eliminate animal confinement areas and manure and wastewater control facilities in areas that slope in directions such that wastewater/rainfall cannot be collected.

(3) Practices to decrease water volume:

- (a) Repair or adjust ewaterers and water systems to minimize water wastage.
- (b) Use lowest practical amounts of water for manure and wastewater flushing.
- (c) Recycle water used to flush manure from paved surfaces or housed confinement areas, if practical.

(4) Practices to decrease wastewater discharges to ~~watercourses~~ surface water:

- (a) Collect and allow process-generated wastewater to evaporate.
 - (i) For Medium AFOs, design, construct, and maintain an impoundment(s) that is capable of storing, at minimum, the volume of all liquid manure and process-generated wastewater for 180 days, at minimum.
- (b) Collect and evenly apply wastewater to land application sites at agronomic rates.
 - (i) For Medium AFOs, design, construct, and maintain an impoundment(s) that is capable of storing, at minimum, the volume of all liquid manure and process-generated wastewater for 120 days, at minimum.
 - (ii) The operator shall keep records demonstrating that wastewater has been applied to each land application site at an agronomic rate.
 - (A) Such records shall be maintained on-site for five years from the date they are created.
 - (B) Such records shall be made available to the Division or its designee, upon request.
- (c) Treat wastewater through use of one of the following:
 - (i) A wastewater treatment strip; or,
 - (A) Inflow to a wastewater treatment strip shall be pretreated by a solid/liquid waste separation facility, as appropriate based upon site constraints and to have the wastewater treatment strip adequately assimilate pollutants.
 - (ii) A method approved by the Division.
- (d) Animals shall not have direct contact with surface water. A stock watering point may be used where animals have access to no other source of drinking water. A stock watering point shall be cleaned frequently of manure and have wastewater diverted at the watering point entry.
- (ee) Operators shall not deposit such waste which might pollute waters of the state in such locations that storm water run-off or normally expected high stream flow will carry the waste into the waters of the state.

(ef) Wastewater retention structures shall not be located within a mapped 100 year flood plain as designated by the Colorado Water Conservation Board (CWCB) unless proper flood proofing measures (structures) are designed and constructed.

(g) The operator shall manage animal mortalities in a manner that prevents a discharge of pollutants to surface water.

(5) Practices to minimize manure transport to ~~watercourses~~ surface water:

(a) Manure stockpiles shall be located away from ~~watercourses~~ surface water, above the 100 year flood plain as designated and approved by CWCB, unless adequate flood proofing structures are provided, and bermed to minimize runoff.

(b) Operators of animal feeding operations shall provide adequate manure storage capacity based upon manure and wastewater production.

(c) Settleable solids shall be removed by the use of solids-setting basins, terraces, diversions, or other solid removal methods. Construction of solids-settling facilities shall not be required where the Division determines existing site conditions provide adequate settleable solids removal.

(d) Removal of settleable manure and wastewater solids shall be considered adequate when the velocity of waste flows has been reduced to less than 0.5 foot per second for a minimum of five minutes. Sufficient capacity shall be provided in the solids-settling facilities to store settled solids between periods of manure and wastewater disposal.

(e) Apply manure to land application sites at an agronomic rate, ~~and avoid applications on saturated soils and lands subject to excessive erosion.~~

(i) The operator shall keep records demonstrating that manure has been applied to each land application site at an agronomic rate.

(A) Such records shall be maintained on-site for five years from the date they are created.

(B) Such records shall be made available to the Division or its designee, upon request.

(f) Avoid applications on saturated soils and lands subject to excessive erosion.

(fg) Operators of animal feeding operations shall use edge-of-field, grassed strips, filter fences or straw bales to separate eroded soil and manure particles from the field runoff.

(h) Collect manure frequently.

(6) Practices to Protect Groundwater.

(a) Operators of animal feeding operations shall locate manure and wastewater management facilities hydrologically downgradient and a minimum horizontal distance of 150 feet from all water supply wells.

(b) When applying manure and wastewater to land, operators of animal feeding operations shall utilize a buffer area around water wells sufficient to prevent the possibility of waste transport to groundwater via the well or well casing.

(c) An impoundment at a Medium AFO shall have a liner that is constructed and maintained such that the seepage rate from the impoundment does not exceed 1×10^{-6} cm/sec.

(i) The operator of such a facility shall have documentation prepared by a professional engineer registered in Colorado certifying that each impoundment has a liner that does not allow a seepage rate in excess of 1×10^{-6} cm/sec.

(A) For an impoundment constructed prior to May 31, 2008, such documentation shall be on-site no later than December 30, 2010.

(B) For an impoundment constructed on or after May 30, 2011, such documentation shall be available prior to wastewater entering the impoundment.

(C) The operator shall make a copy of such documentation available to the Division or its designee, upon request.

(ed) Where the Division determines that an animal feeding operation, other than a Medium AFO, could adversely affect ground water quality, the operator of such an AFO shall install a liner in all impoundments such that the seepage rate from each impoundment does not exceed 1×10^{-6} cm/sec.

(i) The Division shall determine that such an AFO could adversely affect ground water quality by demonstrating that it is in a location:

(IA) Where significant ground water recharge occurs as determined using the United States Department of Agriculture- Natural Resources Conservation Service's current "Agricultural Waste Management Field Handbook, Part 651, Chapter 7, Geologic and Ground Water Considerations"; or,

(IB) Where contamination from the AFO could cause ground water to exceed the standards adopted by the Water Quality Control Commission; or

(IC) Where a water source susceptibility analysis results in the AFO having a "medium-high" or "high" potential for contaminating existing or reasonably likely future public drinking water system withdrawals. Such an analysis shall examine the physical setting of ground water and the contaminant threat that the AFO poses to the ground water source. Factors that shall be considered in examining the physical setting include aquifer sensitivity at the water source intake location, depth to the water source, structural integrity of the water system at the withdrawal point, flow of the water source, and first draw of the water source. Factors that shall be considered in examining the contaminant threat are migration potential, contaminant hazard, potential volume, and likelihood of contaminant release.

(ii) Where required, the liner shall be installed according to a work plan approved by the Division. The operator shall, in consultation with the Division, develop and submit to the Division within 60 days of receiving written request by the Division the approvable work plan that includes a timeline for installing each liner.

(IA) The operator shall implement the plan within 30 days of it being approved by the Division.

- (#B) The operator shall submit to the Division, within 30 days of each liner having been properly constructed, documentation prepared by a professional engineer registered in the State of Colorado certifying that the seepage rate from each impoundment does not exceed 1×10^{-6} cm/sec.

81.710 SEVERABILITY

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

81.811 – 81.14 RESERVED

. . . .

PROPOSED

81.23 STATEMENT OF BASIS, SPECIFIC AUTHORITY AND PURPOSE: APRIL, 2008 **RULEMAKING, EFFECTIVE DATE OF JUNE 30, 2008**

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

A. BACKGROUND

This hearing was held to consider changes as recommended in the triennial review informational hearing for this regulation on May 14, 2007, and in subsequent testimonies provided by stakeholders and parties to the hearing process.

As a result of this rulemaking proceeding, the Commission adopted the following amendments to this regulation.

B. DISCUSSION OF AMENDMENTS

Section 81.1 (Applicability): On February 28, 2005, the U.S. Second Circuit Court of Appeals in Waterkeeper Alliance et al., v. EPA, 399 F. 3d 486 (2nd Cir. 2005) (Waterkeeper), vacated the requirement that a concentrated animal feeding operation (CAFO) has a “duty to apply” for a National Pollutant Discharge Elimination System (NPDES) permit. This requirement was specified in the federal CAFO rule that became effective on April 14, 2003 (“federal CAFO rule”). Therefore, the Commission revised Section 81.1 to delete the requirement that all CAFOs are subject to permitting requirements, and to add a sentence that reflects the current permitting requirement as found in the federal CAFO rule that became effective on XXXXXXXX YY, 2008 [enter the date when it becomes known].

Section 81.2 (Purpose): As discussed below, today’s adopted rule added the requirements that non-permitted CAFOs protect surface water and register with the Division. The “Purpose” section, therefore, was revised accordingly.

In addition, the four purposes were arranged to cite the ground water protection purpose first, since it applies to all CAFOs, whether permitted or not, to cite as second and third the purposes pertaining only to non-permitted CAFOs, and to list in fourth position the purpose pertaining to AFOs.

Section 81.3 (Definitions): The Commission added definitions of the following words, which are used in today’s adopted regulation: best management practice, chronic storm, facility, freeboard, medium animal feeding operation, solid/liquid waste separation facility, stock watering point, stormwater, “25-year, 24-hour storm”, wastewater treatment strip, and waters of the U.S. The definitions of chronic storm and “25-year, 24-hour storm” were taken from the Colorado Discharge Permit System Regulations (Regulation No. 61, 5 CCR 1002-61) in order to have consistency.

Regarding the stock watering point definition, the Commission intends for the term “hardened surface” to mean one that protects against water erosion, and includes surfaces made of gravel, concrete, cushioned padding, or stone cobbles.

The Commission revised for clarity the definitions of surface water and tank overflow. The surface water definition was revised to change “subsurface waters” to “ground water” and to make two minor edits. The

tank overflow definition was revised to delete the word “cattle” and the word “process” in front of “wastewater.”

The Commission deleted the definition of closed facility since this term is not used in today’s adopted rule.

Section 81.4 (Designation of an AFO as a CAFO): The Commission amended this section to change “surface water” to “waters of the U.S.” so that it reflects the language in the federal CAFO rule; that is, the federal CAFO rule provides for the designation of an AFO to a CAFO to be tied to waters of the U.S. This revision also makes the language consistent with that in section 61.17(4) of Regulation No. 61.

The Commission also revised the word “wastes” to read “manure and wastewater” in order to clarify the regulatory meaning and intent of the word.

New Section 81.5 (Register with Division): CAFOs are, by definition, point sources of pollution [per Section 25-8-103(14), C.R.S., of the Colorado Water Quality Control Act]. The Commission believes that all CAFOs have the potential to discharge to waters of the state as a result of, for example, blizzards, sudden and intense rainfall events, or operational errors. Where a discharge is to waters of the U.S., it is subject to permit requirements (except those that are agricultural stormwater discharges), in accordance with sections 61.17(2)(b-c) of Regulation No. 61. However, as a result of the Waterkeeper ruling, a CAFO no longer has a duty to apply proactively for a NPDES permit. Where a CAFO elects to not apply for a permit, the Division may not have knowledge of its location and contact information. Such knowledge is important to help ensure that non-permitted CAFOs are in compliance with this regulation, including the ground water and agricultural stormwater exemption provisions, and with the permit requirement language in section 61.17(2)(b) of Regulation No. 61.

The information also is important for use by the Division to respond in a timely and effective manner to citizen complaints about a facility, including allegations of a discharge to waters of the U.S. Therefore, this regulation was revised to include a new section that requires non-permitted CAFOs to register with the Division by submitting information such as facility name, location, facility phone number, mailing address, and number of animals to be confined.

Regarding the number of animals that will be confined, the Commission intends for the number to represent the maximum number that a facility will confine in a year, and for the number to be broken down by the type of animals that will be confined (e.g., cattle, horses, dairy heifers, mature dairy cows, buffalo). It is not intended to be the cumulative or additive number of animals to be confined in a year.

New Section 81.6 (Facility Management Plan): Agreement among parties existed of the need for core documents required by the regulation (as opposed to dynamic documents, such as inspection records) to be located in one document on a CAFO site for the benefit of the producer and for facilitation of inspections. As a result, the Commission created a new section that requires non-permitted CAFOs to develop and implement a Facility Management Plan (FMP) that contains specified information under the following categories: 1) surface water protection elements –production area; 2) surface water protection elements – land application sites; 3) ground water protection elements – production area. The term Facility Management Plan was selected because the plan contains more than one category of information (e.g., it addresses more than nutrient management), has information about both the production area and land application sites, and to distinguish it from the nutrient management plan required of permitted CAFOs.

1. Surface water protection elements (background information). The Commission is aware that surface water protection provisions existed in the regulation prior to May 2004 and were removed because, as a result of the 2003 federal CAFO rule, all CAFOs would protect surface water as a result of having the duty to apply for a permit. However, as a result of the Waterkeeper ruling on February 28, 2005, a CAFO no longer has a duty to apply for a NPDES permit unless it discharges to waters of the U.S. As a result of this ruling, it is anticipated that a majority of the estimated 200 CAFOs in the state will elect to not apply for a NPDES permit. Some of these

CAFOs are located where a release of wastewater could discharge into surface waters of the state (from either the production area or a land application site), but not waters of the U.S. While such a discharge would not require a permit, it would be allowed under the previous Regulation No. 81 and would cause pollution of state waters.

Similarly some CAFOs that elect to not hold a discharge permit are located where a release of wastewater could discharge into waters of the U.S. Where such a CAFO elects to not hold a permit, significant discharges to surface waters (albeit unauthorized discharges) can result from either no or a minimum of wastewater runoff controls being in place. In addition, wastewater runoff could flow unabated onto a crop field or neighboring property, which could be considered a nuisance.

Agreement among parties to the hearing existed of the desire to have non-permitted CAFOs design their production areas, and to operate their production areas and application sites, substantially consistent with the standards specified for permitted CAFOs in section 61.17 of Regulation No. 61. This results in greater water quality protection, as well as a less confusing regulatory environment and equalization of economic positions among facilities.

The Commission is aware, based on the above discussion, that such standards would affect all non-permitted CAFOs, whether or not a facility could discharge into waters of the U.S. In addition, the Commission considered the fact that where a non-permitted CAFO implements such standards and discharges to waters of the U.S., the discharge is a violation of sections 61.17(2)(b-c) of Regulation No. 61 (i.e., no discharge without a permit).

The Commission concluded that, in the interest of protecting surface waters, and in light of the fact that surface water protection requirements for CAFOs existed in the regulation prior to May 2004, it is appropriate to have non-permitted CAFOs proactively protect surface waters by amending this regulation to require surface water protection provisions that reflect, where reasonable, those required of permitted CAFOs. Specifics of the requirements are discussed below.

2. Surface water protection elements – production area. The regulation was revised to include a subsection containing surface water protection requirements for the production area of non-permitted CAFOs. The main requirement is that wastewater control structures be designed and constructed to be capable of storing the volume of all liquid manure and wastewater, including the runoff resulting from a 25-year, 24-hour storm or chronic storm, whichever is greater, plus two feet of freeboard. These are the same standards required of permitted CAFOs. The regulation also provides for, as an option to conventional impoundments, the use of a solid/liquid waste separation facility in conjunction with a wastewater treatment strip. The Commission is aware that, depending on the storm size or intensity, wastewater could exit the end of the treatment strip and discharge into waters of the U.S. Where a non-permitted CAFO operator elects to use this wastewater control system, and a discharge to waters of the U.S. occurs, it is clear from sections 61.17(2)(b-c) of Regulation No. 61 that such a discharge is subject to permit requirements.

In recognition that a number of CAFOs currently do not have in place the required control structures, the Commission determined that three-years was a reasonable amount of time for the structures to be constructed. Therefore, a deadline of May 31, 2011 was placed in the regulation.

The adopted regulation includes language from section 61.17(8)(c)(i)(B) of Regulation No. 61 indicating when an impoundment must be dewatered once the storage capacity is less than that required to store runoff from the designed storm event ("pumping level"). The language from section 61.17(8)(c)(i)(A) requiring that a minimum of two feet of freeboard exist in an impoundment was not included in today's adopted rule since it is a moot requirement where it is the pumping level that must be maintained and this level is lower than two feet of freeboard.

The adopted rule includes the requirement from section 61.17(8)(g)(vii)(D) of Regulation No. 61 that depth markers be clearly marked, at minimum, in one (1) foot increments. The Commission intends that the markers show the depth of the impoundment, beginning at the top of the impoundment.

3. Surface water protection elements – land application sites. The regulation was revised to include a subsection containing surface water protection requirements for the land application sites. In order to have consistency with section 61.17(8)(c) of Regulation No. 61, a deadline of February 27, 2009, was set for the elements to be developed, implemented, and included in the FMP.

The surface water protection requirements are the same as those required of permitted CAFOs, except as follows: (1) The permit regulation requirement that process wastewater not be applied to either frozen or flooded land application sites was revised to state that “there shall be no discharge to surface water from land application activities when the ground is frozen or saturated.” The Commission determined that the revision is appropriate because the permit regulation requirement is a technical standard not specified in the federal rule and the revised standard is protective of surface waters while providing flexibility in application timing. This provision also is applicable to where applied wastewater freezes on the soil surface and subsequently melts and runs off of the application site. (2) The permit regulation requirement that the soil water holding capacity of the soil cannot be exceeded when wastewater is sprinkler-applied was omitted since it would conflict with the revised language noted in number (1) above.

As in the CAFO permit regulation (section 61.17(8)(c)(x)(A) of Regulation No. 61), the adopted regulation requires that phosphorus transport risk assessments be made using a screening tool approved by the Division that is current, readily available, peer-reviewed, and appropriate for use in Colorado. The Commission is aware that one evaluation tool, the Colorado Phosphorus Index Risk Assessment published by the United States Department of Agriculture – Natural Resources Conservation Service (“P Index”), exists for phosphorus transport risk assessments and that this tool is useful and applicable to Colorado agronomic conditions. This tool rates transport risks as ‘low’, ‘medium’, ‘high’, or ‘very high’. Therefore, today’s adopted language specifies that assessments of phosphorus transport risk be made using a screening tool that results in a risk score of ‘low’, ‘medium’, ‘high’, or ‘very high’. The Commission intends that the most current P Index be the preferred assessment tool, unless the Division has approved an equivalent or better tool.

The Commission is aware that a published tool suitable for assessing nitrogen transport risk does not currently exist. Therefore, it finds that use by operators of the technical standards specified in sections 81.6(2)(b)(i) and (iii), in conjunction with the requirement that land application sites be evaluated for phosphorus runoff risk, will result in nitrogen transport to surface waters being minimized.

The Commission is aware that an evaluation of the risk of phosphorus runoff from land application sites has not previously been a requirement for CAFOs applying process wastewater or manure, and that some land application sites may have a very high risk of such runoff. Therefore, the Commission adopted language that provides for a three (3) year phased implementation of phosphorus-based nutrient management for land application sites that have a very high risk of phosphorus runoff when first evaluated after the adoption of today’s rules.

Regarding soil sampling protocols, the Commission clarifies that the appropriate soil sampling depth be governed by commonly accepted nutrient budget methodologies, such as Colorado State University Cooperative Extension fertilizer recommendations or a nutrient management plan that meets United States Department of Agriculture – Natural Resources Conservation Service standards. Where a methodology indicates that a certain sampling depth is necessary and a deeper depth is preferred, sampling to the former depth meets the intent of these regulations.

The adopted regulation requires that land application equipment be inspected for leaks. The Commission intends that such inspections be made within the six-month period prior to the first application of manure or wastewater being made in any given year. In addition, such equipment shall be inspected at least once daily when applying process wastewater.

The adopted regulation requires that manure and wastewater be applied as uniformly as possible with properly calibrated equipment. Dry manure is notably difficult to apply uniformly and evenly. Testimony in the record showed that contract haulers typically apply dry manure at a rate of between 10%-20% of the target agronomic rate (e.g., 20 tons/acre) and that Colorado State University research shows that the amount of manure applied to a field as calculated from two common calibration methods is not significantly different from the amount that contract haulers stated that they applied to the same field. Therefore, the Commission concludes that where the amount of dry manure applied to a field with properly calibrated equipment is within 10%-20% of the calculated agronomic rate, the application is compliant with this adopted provision. In addition, the Commission recognizes as a calibration method where a contract hauler adjusts his/her application rate "on-the-go" during application to a field.

4. Ground water protection elements – production area. As noted above, one purpose of the FMP is to have core documents (not records) required by the regulation to be located in one document on a CAFO site for the benefit of the producer and for facilitation of inspections. Thus, the regulation was revised to specify that certain documents required by the ground water protection provisions of this regulation, such as the approved Standard Operating Procedure, be placed in the FMP. The Commission determined that these documents should be in the FMP by February 27, 2009, which is the same date that surface water protection provisions must be in place.
5. New Section 81.7 (Additional requirements): The Commission established a new section of this regulation to include certain performance standards, and recordkeeping and discharge reporting requirements, as they are not appropriate for inclusion in other previous or revised parts of this regulation. The provisions of new sections 81.7(1)(b) and 81.7(2)(c) pertain to the agricultural stormwater discharge criteria specified in section 61.17(2)(b-c) of Regulation No. 61, and are included here to have the criteria be enforceable outside of the permitting regulation.

The Commission decided that the discharge reporting requirements are necessary because the Division does not have adequate staff to monitor, in real time, all discharges to waters of the U.S. Certain timely information is needed about a discharge prior to making the determination that a CAFO must apply for a discharge permit, in accordance with sections 61.17(2)(b-c) of Regulation No. 61.

New Section 81.8 (Ground water protection – CAFOs): This section previously existed as section 81.5. The section title was revised to show that it applies to both permitted and non-permitted CAFOs, as opposed to the new sections 81.6 and 81.7, which are applicable to only non-permitted CAFOs.

1. Liner certifications. As a result of previous liner certifications submitted by CAFOs, the Division recommended that certifications include some information indicating how the maximum seepage rate of a liner was determined. There being no disagreement in the testimony, the Commission revised subsection 81.8(2)(b) to require supporting information and provided six acceptable forms of such information.

Subsection 81.8 (2)(b) also was revised to move the two liner certification deadlines to become new subsections 81.8(2)(b)(i-ii). In addition, the new subsection 81.8(2)(b)(ii) was revised to remove the requirement that for any impoundment constructed after June 30, 2004, liner documentation needs to be in place 30 days prior to wastewater entering the impoundment. It is sufficient simply to have the certification be in place prior to wastewater entering the impoundment.

The Commission revised subsection 81.8(3)(b) to show that a liner re-certification needs to be made by a professional engineer registered in Colorado.

2. Liner inspections. The Commission is aware that both earthen and synthetic (e.g., plastic) liners are subject to damage from various causes. Thus, subsection 81.8(2)(c) was revised to delete the word "earthen" prior to "impoundment" to have the provision require that both earthen and synthetic liners be inspected weekly.
3. Manure removal certifications. To have the requirement be more appropriately positioned and more easily identified, the requirement that the approvable standard operating procedure (SOP) be on-site (previously part of subsection 81.8(3)(d)) was moved to become the new subsection 81.8(3)(a).

The Commission modified for clarity section 81.8(3)(c) to have the phrase "a new CAFO" read "a CAFO that comes into existence after December 31, 2004."

Subsection 81.8(3)(d) requires an operator to certify after each manure removal event that the manure was removed in accordance with the approved SOP. Implementation of this provision revealed that some concrete-lined impoundments are cleaned of manure daily, and some are cleaned a number of times daily, such as slurry pits in some dairy freestall barns. For such impoundments, it is not reasonable to expect an operator to certify after each cleaning that manure was removed in accordance with the approved SOP. However, where a certification is not provided after each removal event, the Commission is aware that concrete liner integrity can deteriorate with time, which can result in the rate of seepage exceeding the 1×10^{-6} cm/sec threshold. Therefore, the Commission provided the option that where the operator does not complete a certification after each manure removal event, the impoundment must be drained and cleaned every five years and evaluated for liner integrity. The Commission expects that the evaluation determine whether the concrete is free of visible defects and distress that would reasonably cause the liner to not be capable of having a maximum seepage rate of 1×10^{-6} cm/sec. It is appropriate to have the operator use best professional judgment in making the integrity evaluation as opposed to having a professional engineer make the evaluation. The adopted regulation specifies that damaged concrete liners be repaired and that evidence of liner evaluations and repairs, such as photographs, be kept and be submitted to the Division.

4. Impoundment setbacks. Subsection 81.8(6)(a) requires a setback distance to ground water of 20 feet for earthen-lined impoundments at new source CAFO sites. As the result of testimony, the Commission concludes that this requirement is not relevant for the purpose of protecting ground water from impoundment seepage and for protecting impoundment liners from the affects of hydrostatic pressure. Therefore, this subsection was deleted by this rulemaking.

Subsection 81.8(6)(b) requires a setback distance of four feet from seasonally high ground water to the liner of a new source impoundment. The intent of this setback was to ensure that hydrostatic pressure from ground water will not affect the liner integrity; that is, it provided an insurance factor that allowed for some increase in the ground water level after impoundment construction to occur without the ground water contacting the liner. The Commission believes that the four foot setback is still appropriate as an insurance factor, but finds that a liner can also be protected from hydrostatic pressure where ground water is less than four feet from the liner by installation of an engineered feature (such as a dewatering system) that prevents ground water from contacting the liner. Thus, the adopted regulation includes language that allows for a liner to be constructed closer than four feet to ground water where the impoundment is constructed and maintained in accordance with the design by a professional engineer registered in Colorado that prevents ground water from contacting the impoundment liner. The purpose of such a design is to prevent hydrostatic pressure from affecting liner integrity. In addition, the adopted language clarifies that the bottom of an impoundment is the bottom of the impoundment liner.

The Commission is aware that it may be desirable to construct a CAFO impoundment nearby to a structure that contains surface water, such as a berm of an irrigation canal. Where such an impoundment meets the liner construction and protection requirements of this regulation, a release of pollutants from the liner to ground water is not considered a discharge to the ground water, in accordance with subsection 61.14(9) of Regulation No. 61. The Commission clarifies, however, that where a release of pollutants from the liner is to surface water (for example, the irrigation canal water), such a discharge is a discharge to surface water that is subject to the permitting requirements of section 61.17(2)(b) of Regulation No. 61.

5. Ground water remediation (new subsection). The Commission recognized in its 1992 rulemaking the need to protect ground water under CAFOs by including in this regulation the “Ground Water Protection Requirements – Concentrated Animal Feeding Operations.” Where the Division determines that an operator caused ground water contamination through non-compliance with this regulation, the Commission finds it is appropriate that the operator remediate such contamination. To this end, a “Ground Water Remediation” subsection was added that specifies that the Division must determine that non-compliance by the CAFO with these regulations caused or contributed to the exceedance of ground water quality standards and, where so determined, the requirement that the CAFO submit to the Division for approval a remediation plan. The new subsection includes the required elements of the plan.
6. Impoundment closure. The previous impoundment closure language pertains only to where a CAFO facility closes. Implementation of this language revealed that situations exist where an impoundment needs to be closed even though the facility as a whole is not closing. The previous language also specifies that the default requirement for a closed earthen impoundment is backfilling with at least five feet of soil. Depending on the impoundment depth, such backfilling could cause ponding of rainfall and stormwater, which may cause material injury to state water rights. Therefore, the Commission revised the regulation to have impoundment closure pertain to any closed CAFO impoundment, to require that soil fill be sufficient to prevent ponding, and to have the soil fill requirement pertain to any closed impoundment, including synthetic-lined impoundments.

The Commission retained the provision that an operator can close an impoundment using an alternative procedure and timeline approved by the Division. The Commission intends that one approvable alternative is backfilling with at least two feet of soil that is graded to reasonably prevent water ponding and provides for stormwater to drain from the impoundment through, for example, a breached berm of the impoundment.

In addition, the adopted language requires that manure and wastewater be removed from a closed pond within 60 days of closure, but flexibility is provided to have the Division approve an alternative timeline proposed by an operator that addresses site specific needs, conditions, and/or circumstances.

New Section 81.9 (Animal Feeding Operations - BMPs): This section previously existed as section 81.6. The following revisions were adopted as a result of this rulemaking.

1. Collect manure frequently. This best management practice (BMP) currently exists under the general BMP category of “Practices to decrease open lot surface area.” The Commission determined that this BMP was more appropriate under the general BMP category of “Practices to minimize manure transport to surface water”, and moved it accordingly.
2. Practices to decrease wastewater discharges to watercourses. The word “watercourses” in this general BMP header was changed to “surface water”, which is a defined term in this regulation.

An existing BMP provides for an AFO to “collect and allow wastewater to evaporate.” The Commission has concerns that storage and evaporation of open-lot wastewater (which results primarily from runoff from pens as a result of precipitation) may cause material injury to state

water rights. As a result, the BMP was modified to have it pertain to process-generated wastewater only. In addition, since process-generated wastewater typically has a higher concentration of pollutants than open-lot wastewater, and a Medium AFO can produce a significant volume of process-generated wastewater (such as from a dairy milking parlor), and inadequately controlled process-generated wastewater can have a significant impact on surface water quality, the Commission added a design standard that a Medium AFO have the capability of storing process-generated wastewater for 180 days, at minimum. However, where a Medium AFO anticipates eventually confining enough animals to be defined as a Large CAFO, the Commission encourages the operation to construct the impoundment to meet the capacity standard required of CAFOs.

An existing BMP provides for an AFO to “collect and evenly apply wastewater to land application sites at an agronomic rate.” Since a Medium AFO can produce a significant volume of wastewater (open-lot plus process-generated wastewater), and a number of Medium AFOs operate with animal numbers that are close to the Large CAFO threshold numbers, and inadequately controlled wastewater can have a significant impact on surface water quality, the Commission established a minimum design standard that a Medium AFO have the capability of storing wastewater for 120 days, at minimum. This is a reasonable length of time during which no land application can typically occur due to conditions during winter months (e.g., cold weather). However, where a Medium AFO anticipates eventually confining enough animals to be defined as a Large CAFO, the Commission encourages the operation to construct the impoundment to meet the capacity standard required of CAFOs.

Where a BMP requires that manure or wastewater be applied at an agronomic rate, the Commission finds it appropriate that an AFO keep records showing that agronomic rate applications have occurred. Thus, sections 81.9(4)(b) and 81.9(5)(e) of the regulation were revised accordingly.

The Commission has become aware that management methods other than impoundments, such as a wastewater treatment strip, are available that can appropriately satisfy the intent of decreasing wastewater discharges to surface water. In addition, impoundments typically are not appropriate for AFOs located over shallow ground water. Therefore, the Commission added flexibility to this regulation by adding a wastewater treatment strip as a BMP, and stating that other methods are appropriate where approved by the Division. These methods are appropriate for managing open-lot wastewater only, for reasons previously discussed above.

As specified in sections 81.3(19) and 81.4 of the regulation, where animals at an AFO have direct contact with waters of the U.S., the AFO is either defined as a Medium CAFO or is at risk of being designated as a CAFO. Because of these provisions, the Commission added to section 81.9(4) a BMP prohibiting animal access to surface water. However, the Commission is aware that a number of AFOs were historically located adjacent to flowing water, which served as the water source for the confined animals. This flowing water often is the sole source of water for the animals because, for example, a well permit or diversion right (which could be used to divert water from a river to a stock tank) can't be acquired in these times of heavily appropriated water. In recognition of these realities, the Commission concluded that it is reasonable to allow animals to obtain drinking water from surface water where the animals do not reasonably have access to any other source of drinking water, and that for such situations, surface water will be reasonably protected by animal access to the surface water being strictly limited via a constructed stock watering point. The Commission provided in the BMP and in the definition of a stock watering point the design and operational standards for a stock watering point.

Improperly handled animal mortalities can be a significant source of surface water contamination. In recognition of this, section 25-1-612, C.R.S., specifies that dead animals shall not be placed in surface water or other specified areas. The Commission decided to emphasize the need for AFOs to properly handle mortalities by requiring that a discharge from mortalities to surface water be prevented.

3. Practices to minimize manure discharges to watercourses. The word “watercourses” in this general BMP header and in subsection 81.9(5)(a) was changed to “surface water”, which is a defined term in this regulation.
4. Practices to protect ground water. As discussed previously, a Medium AFO can produce a significant volume of wastewater (open-lot and/or process-generated wastewater), especially those that operate with animal numbers that are just below the Large CAFO threshold numbers. Where an impoundment is in place to store the wastewater, ground water quality is at risk from pollutants (especially nitrogenous compounds) percolating through the vadose zone under the impoundment. In light of this risk, the Commission revised the regulation to add a new subsection 81.9(6)(c) requiring that an impoundment at a Medium AFO be lined such that the seepage rate from the impoundment does not exceed 1×10^{-6} cm/sec, which is the same standard required of CAFOs. In addition, the facility must have at the facility documentation from a professional engineer registered in Colorado certifying that a liner of an impoundment does not allow a seepage rate in excess of 1×10^{-6} cm/sec.

As a result of this regulatory addition, the Commission amended sections 81.9(6)(c) and 81.9(6)(c)(i) to have them not pertain to Medium AFOs.

The Commission recognizes that Medium AFOs will need time to test existing liners and, where a seepage rate is in excess of 1×10^{-6} cm/sec, time to install a compliant liner. Therefore, a deadline of May 30, 2011, was set for a Medium AFO to have at the facility the required documentation from a professional engineer. This is the same deadline by which non-permitted CAFOs must have constructed in the production area the surface water protection structures specified in section 81.6(1). For an impoundment constructed after the effective date of this rulemaking, the documentation from a professional engineer must be available prior to wastewater entering the impoundment.

Administrative Revisions

The Commission added the following phrase to the first sentence of the introductory paragraph of this regulation because the acronym C.F.R. is used in the regulation: “including references to the Code of Federal Regulations (C.F.R.).”

In sections 81.8(2)(b), 81.8(5)(b and d), and 81.8(7), the Commission amended references to section 81.5 to be section 81.8, because section 81.5 was changed to be section 81.8.

The Commission modified for correctness section 81.8(2)(a)(ii) to have the outline notations I, II, III, and IV read A, B, C, and D, respectively.

The Commission modified for correctness section 81.9(3)(a) to have “caterers” read “waterers.”

In order to segregate two requirements, the Commission moved the phrase “avoid applications on saturated soils and lands subject to erosion” from section 81.9(5)(e) and placed it in a new subsection 81.9(5)(f).

The Commission modified for clarity section 81.9(5)(g) to have the phrase “edge of field, grassed strips filter fences” read “edge of field grassed strips, filter fences.”

The Commission modified for correctness sections 81.9(6)(c)(i) to have the outline notation I, II, and III read A, B, and C, respectively.

The Commission modified for correctness sections 81.9(6)(c)(ii) to have the outline notation I and II read A and B, respectively.