

85.15 STATEMENT OF BASIS, SPECIFIC STATUTORY AUTHORITY AND PURPOSE; MARCH 2012 RULEMAKING (EFFECTIVE _____)

The provisions of sections 25-8-202, 25-8-205, 25-8-304, 25-8-401, 25-8-402, and 25-8-501, C.R.S., provide the specific statutory authority for adoption of ~~the attached regulatory amendments~~ this Control Regulation. 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

I. Overview

In this rulemaking hearing, the Commission has taken two major actions as part of a coordinated strategy to address current and potential future nutrient pollution of Colorado surface waters.

First, the Commission has adopted a new section 31.17 in the Basic Standards and Methodologies for Surface Water, Regulation #31, to address nutrients. Section 31.17 establishes numerical values for phosphorus, nitrogen and chlorophyll a that are deemed to be suitable for the protection of identified categories and subcategories of classified uses of Colorado surface waters. The adoption of the interim phosphorus, nitrogen and chlorophyll a values in section 31.17 is the culmination of a decade-long effort, involving hundreds of hours of staff time and numerous work group meetings with dozens of stakeholders. As discussed further below, these numerical values identify levels that the currently available scientific information indicates would be protective of the corresponding categories of beneficial uses. However, in this proceeding the Commission is not determining for which specific waters it may be necessary and appropriate to adopt standards based on these numerical values.

Second, the Commission has adopted this new Nutrients Management Control Regulation, Regulation #85. This new control regulation establishes numerical effluent limitations for many domestic wastewater treatment plants and industrial wastewater dischargers that are likely to have significant levels of nutrients in their discharges. It also describes requirements for other point source dischargers and voluntary steps for nonpoint sources to address nutrients.

Finally, it establishes monitoring requirements for point source dischargers and a program aimed at monitoring of surface waters for nutrients and related parameters. This effort is geared toward better characterizing nutrient sources, and current nutrient conditions, to help inform future regulatory decisions regarding nutrients.

The Commission has determined that the adoption of the requirements set forth in Regulation #85 are necessary to protect the public health, beneficial uses of Colorado waters, and the environment of the state, based on sound scientific and technical evidence in the record. As part of the overall nutrients management strategy described here, the Commission has decided to divert from its usual practice of adopting numerical criteria in Regulation #31 and then, in subsequent hearings to review individual basin standards, broadly applying those values as segment-specific water quality standards throughout the State. Rather, the Commission believes that Colorado will proceed faster and more expeditiously by focusing the primary control efforts over the next decade on the technology-based approach described below and set forth in this new Nutrients Management Control Regulation. However, section 31.17 includes provisions that identify limited circumstances where the interim numerical values being established may be applied in the adoption of segment specific water quality standards during the next ten years. No new or revised water quality standards are established by this current rulemaking action.

[Placeholder to include discussion regarding the outcome of the Benefit-Cost Study, the Regulatory Analysis, and their relationship to the final version of the Control Regulation adopted by the Commission, including any revisions subsequent to these drafts.]

The Commission has decided that this two-part strategy for addressing nutrients is the best current policy option to make effective progress in addressing nutrients management in Colorado at this time. The Commission believes that to rely on the usual standards-based approach alone (table value criteria, followed by segment-specific water quality standards, along with possible temporary modifications and discharger-specific variances, then assessment and listing decisions, total maximum daily load development, and then incorporation into discharge permits with compliance schedules) would result in substantially less progress in controlling nutrients in the next several years than will the technology-based approach set forth in new Regulation #85. At the same time, the Commission has retained the ability to use the new interim nutrient values established in Regulation #31 as the basis for the adoption of segment-specific water quality standards in appropriate limited circumstances. Although it will inevitably take a significant number of years for existing wastewater dischargers to accomplish the planning, financing and construction of facilities to meet the new Regulation #85 effluent limitations, that approach to implementation of nutrient controls is likely to be considerably more expeditious than that which would result from the delays and transaction costs associated with the traditional standards-based control efforts alone. Moreover, following the initial ten years of implementation of the provisions now being established the Commission will determine whether additional, more extensive standards adoption is necessary to address nutrient control needs that are not fully addressed by the technology-based requirements now being established.

II. Definitions

The Commission adopted definitions for several terms not already defined in statute. The definitions of the terms “BMP”, “MS-4” and “Stormwater” were taken from the Colorado Discharge Permit System Regulations (Regulation # 61); the definition of the term “disadvantaged community” was taken from the 2011 Water Pollution Control Revolving Fund and State Domestic Wastewater Grant Intended Use Plan; and the definitions of “local government” and “nonpoint source” were taken from the Cherry Creek Reservoir Control Regulation (Regulation # 72). The definition of “municipal screener” was taken from EPA’s 1995 “Interim Economic Guidance for Water Quality Standards.”

III. Specific Limitations for Dischargers of Nutrients

The Commission set mandatory requirements for selected existing and new domestic wastewater treatment works (DWWTW) and non-DWWTW (e.g., industrial facilities).

Discharges from DWWTW and certain industrial facilities are known to contain ~~significant~~ concentrations of ~~nutrients~~ total phosphorus and total inorganic nitrogen that are in excess of the effluent limits the Commission has established through this control regulation. For existing facilities, effluent limits for total phosphorus and total inorganic nitrogen were set based on “first level” biological nutrient removal (BNR) that would typically consist of a three stage process (single stages of anaerobic, anoxic, and aerobic zones). For new facilities, total phosphorus and total inorganic nitrogen effluent limits were based on enhanced BNR that would typically consist of a four or five stage process (multiple stages of anaerobic, anoxic, and/or aerobic zones). The evidence presented in support of the adoption of the interim numeric nutrient values in Regulation # 31 indicates that both total phosphorus and total nitrogen can contribute to water quality impacts. Therefore, basing the nutrient effluent limits on BNR technology, which ~~removes~~ reduces total phosphorus and total inorganic nitrogen concentrations, will ensure that progress is made to reduce the concentration of ~~both~~ nutrients in Colorado’s surface waters where facilities subject to the control regulation are located. The Commission does not intend the requirements for new facilities in subsections 85.5(1)(b) and 85.5(2)(a) to apply to expansions or other improvements to existing facilities in the same location.

Effluent limits were set for total phosphorus (TP) and total inorganic nitrogen (TIN). The Commission set limits for TIN rather than total nitrogen (TN) in recognition of the variable fraction of TN that includes “recalcitrant” dissolved organic nitrogen which is difficult or impossible to biologically treat. As a matter of policy, the Commission decided that the expectations for wastewater treatment using BNR should be based on the fraction of TN that can be reliably treated by biological means. ~~The Commission found that the expectation for wastewater treatment using BNR should be based on the fraction of TN that can be treated biologically.~~

There were several factors that guided the Commission in setting the effluent limits and compliance statistics for total inorganic nitrogen and total phosphorus. First, there will be a large number of domestic wastewater treatment plants and a lesser number of industrial facilities that will be required to implement the effluent limits. The Commission found it necessary to find a balance between setting limits that would provide the greatest reduction in TIN and TP concentrations and the need to set limits that each of the regulated entities can finance and which the constructed facilities can reasonably be expected to achieve. The effluent limits adopted by the Commission were established based on consideration of a variety of sources of information including peer reviewed studies of treatment plant performance, industry presentations on expectations for nutrient treatment, modeling results for typically used BNR processes, and a decision support document prepared by a group of contributing consulting engineers who volunteered to provide relevant information on treatment expectations for a wide range of facilities (e.g., size and geographic location) in Colorado. Several specific factors that affect the performance of a BNR facility were identified in these materials. The Commission’s consideration of factors affecting BNR performance is described below.

- ~~Temperature: The Commission found that n~~New facility designs can accommodate normally occurring low wastewater temperatures found in Colorado and still achieve the required effluent limits. For existing facilities not currently designed for nutrient removal, low temperature may limit the ability of existing treatment plants to meet the proposed technology-based numeric nutrient limits and additional basin volume or other design adjustments may be required.
- ~~Influent Wastewater Characteristics: The Commission recognized that f~~Facilities may need to use chemicals to optimize the influent characteristics for nutrient removal and/or add specific chemicals to help enhance or compensate for process upsets. ~~The Commission found it appropriate to include chemical feed as a design aspect of the “characteristic” facility upon which the effluent limits for existing and new facilities are based.~~ The cost of installation of chemical feed is a relatively inexpensive aspect of a BNR project with the operational (chemical) cost being the major concern. ~~The Commission took into account the fact that~~Generally, chemical use would be fairly infrequent where chemical feed is provided as a back-up for process upsets. ~~The Commission understands that s~~Some facilities may have to feed chemicals more routinely where the influent characteristics are not favorable for removal of both TP and TIN to meet the effluent limits without such addition. This may be particularly true to address situations where competing operational issues reduce the removal efficiency for one nutrient (e.g., TP) in favor of the other.
- ~~Influent Wastewater Loading: The Commission considered the fact that a~~Available literature reviewed in preparation for this hearing to~~that~~ characterizes BNR facility performance does not establish identify the current loading as a percentage of design treatment capacity for the facilities cited. Under-loaded wastewater treatment facilities are better equipped to treat beyond the design expectations of the facility due to the ability to establish longer detention times and higher recycle ratios. ~~The Commission notes that the majority (approximately 80 percent) of the mechanical wastewater treatment facilities within Colorado receive flows and/or loadings at less than 60 percent of their design hydraulic capacity. These facilities are therefore positioned to provide a higher level of treatment than at design loadings but as the flow and loading to these facilities increases, the ability to remove nutrients may diminish or disappear. The Commission respects that municipalities and industries have planned~~

~~growth and other economic activity around the availability of the existing facility design capacity and that such capacity should not be presumed to be available for removal of nutrients.~~

- ~~Combined versus Separate Nutrient Treatment Processes: The Commission also recognizes that the literature did not address whether the studied facilities used combined or separate nutrient treatment processes. Separate nutrient treatment processes generally enable better removal than combined nutrient treatment processes. Considering that Colorado wastewater treatment facilities that are required to meet the TP and TIN limits will likely have to accomplish this through use of BNR, the Commission considered this issue when setting the technology-based numeric limits for existing domestic wastewater treatment facilities.~~
- ~~Compliance Statistics/Periods: Nutrients are not in and of themselves toxic and their impact on the water environment generally occurs over a longer period of time. Also, BNR treatment is subject to expected periodic/frequent upsets that may be caused by environmental extremes (e.g., abnormally low temperatures) or introduction of a pollutant to the wastewater influent that is toxic to the sensitive biota providing the nutrient removal. For these reasons, the Commission established annual median and 95th percentile compliance statistics. The Commission decided to require the limits to apply on a rolling basis so compliance will be determined based on the sample results for the most recent twelve months. This will provide a monthly check on the facility performance and ensure that the facilities are continuously operated. The Commission considered setting limits based on long term (annual/quarterly) averages but rejected that approach based on the fact that process upsets can result in relatively high effluent nutrient concentrations that may influence the average over several months.~~

The Commission found that there is no “formula” for characterizing the effluent concentrations that can be achieved by a well-designed and operated BNR facility. Further, the Commission found that it is reasonable and appropriate to include chemical feed as a design aspect of the “characteristic” facility upon which to base effluent limits.

The above factors played a large role in the Commission’s determination of achievable limits that will result in Colorado making significant progress to reduce the discharge of nutrients to its waters from the identified classes of regulated point sources. The modeling work that the Division referenced in its basis for achievable BNR performance affected the decision as well as information the Commission was provided that indicated that the adopted limits are viewed by many in the engineering community as being appropriate for three-stage BNR.

Regarding influent loading, the Commission notes that the majority (approximately 80 percent) of the mechanical wastewater treatment facilities within Colorado receive flows and/or loadings at less than 60 percent of their design hydraulic capacity. These facilities are therefore positioned to provide a higher level of treatment than at design loadings but as the flow and loading to these facilities increases, the ability to remove nutrients may diminish or disappear. The Commission respects that municipalities and industries have planned growth and other economic activity around the availability of the existing facility design capacity and that such capacity should not be presumed to be available for removal of nutrients.

Regarding averaging period for effluent limits, the Commission established annual median and 95th percentile compliance statistics. The Commission decided to require the limits to apply on a rolling basis so compliance will be determined based on the sample results for the most recent twelve months. This will provide a monthly check on the facility performance and ensure that the facilities are continuously operated. The Commission considered setting limits based on long term (annual/quarterly) averages but rejected that approach based on the fact that process upsets can result in relatively high effluent nutrient concentrations that may influence the average over several months.

The Commission finds that is appropriate to set a companion limit to the annual median limit to ensure that BNR facilities are continuously operated. The Commission set such limits for total phosphorus and total inorganic nitrogen based on the 95th percentile of the data for the previous 12 calendar months. This will allow no more than 5% (3 samples/year if sampling occurs weekly) of samples to exceed the numeric limit which will accommodate brief periods when facility performance deteriorates as is expected to occur with BNR facilities. These limits were set based principally on the ratio of annual 95 percentile to annual median data for several Colorado BNR facilities.

The Commission appreciates that some existing facilities have implemented BNR to remove both TP and TIN in advance of any regulatory requirement and recognizes that some of these facilities may not be able to comply with the adopted limits without making improvements. The Commission decided that it is not practical to consider individually all specific facilities in setting limits that are intended to apply to a large fraction of domestic mechanical treatment plants. Therefore, achievable limits were set based on three-stage BNR with chemical addition for existing facilities and four or five stage BNR with chemical addition for new facilities.

Unlike domestic wastewater treatment works that are known to discharge ~~significant~~ concentrations of ~~nutrients~~ total phosphorus and total inorganic nitrogen that are in excess of the effluent limits the Commission has established through this control regulation, industrial treatment facilities may or may not discharge nutrients in ~~significant~~ such concentrations. Therefore, the Commission required an evaluation of the facility's discharge to determine whether the effluent limits will be applied. This test is to be based on "credible evidence" (e.g., effluent concentration data for the facility or published information for an industrial sector), that would indicate whether the discharge is expected to exceed the applicable effluent limits without additional treatment. Where effluent data is used to make the determination, the Commission intends the term "credible evidence" in subsections 85.5(2)(a) and (b) to be interpreted in a manner that will result in the use of a reasonably robust set of data (e.g., not a single sample).

IV. Exclusions

At this time, the Commission decided to exclude DWWTW owners with a lagoon facility with a design capacity of 1 million gallons per day (MGD), disadvantaged communities, and DWWTW owners of any facility with a capacity of 0.5 MGD or less from the requirement to meet the effluent TP and TIN limits. The Commission chose to exclude minor (< 1 MGD) lagoon systems as these facilities would have to be entirely replaced to implement BNR in order to meet the effluent limits, at a much higher average cost. The Commission also found that it is appropriate to exclude disadvantaged communities from the requirement to meet the limits as the cost of BNR is likely beyond their means.

Finally, the Commission decided to exclude the remaining DWWTW mechanical facilities with a capacity of 0.5 MGD or less from the requirement to meet the nutrient effluent limits. ~~Based on estimates taken from the Cost-Benefit Study prepared by CDM on the record,~~ the lagoon facilities of 1 MGD capacity or less, the disadvantaged communities, and the non-disadvantaged mechanical facilities with a design capacity of less than or equal to 0.5 MGD (247 facilities) comprise approximately 6% of the total flow at design capacity of all DWWTW and the mechanical facilities greater than 0.5 MGD and lagoon facilities of greater than 1.0 MGD (117 facilities) comprise approximately 94% of the total flow at design capacity of all DWWTW. Therefore, the effluent limits will only apply to approximately 32% of the domestic facilities but will control 94% of the design flow for domestic facilities in the state. The Division expends considerable time and resources working with small communities, which can be time consuming given that these communities are usually dependent on outside resources for planning and operations that are relatively expensive or in short supply. The Commission finds that the level of effort, on the part of hundreds of the smallest communities and the Division to achieve compliance with the effluent limits is out of scale with the benefit to be achieved by addressing the small fraction of the total nutrient loading these communities contribute to Colorado's waters.

These exclusions may be revisited in future rulemakings and effluent limits may be reconsidered at that time if determined appropriate by the Commission as a matter of public policy.

V. Facilities Subject to Other Nutrient Control Regulations

The Commission provided a ten year delay in the implementation of the nutrient effluent limits for TP and TIN for existing DWWTW and industrial dischargers in the Dillon, Cherry Creek, Chatfield and Bear Creek reservoir basins. These entities are required to meet effluent limits for total phosphorus that are at least as stringent as those required under this regulation and have invested tens of millions of dollars in treatment facilities, the vast majority of which do not use BNR. The Commission found that requiring these entities to meet the new effluent limits would necessitate installation of BNR for removal of TIN at significant additional cost. The Commission provided an exemption in order to provide time for these entities to plan for any additional measures needed to meet BNR-based requirements for nitrogen and phosphorus.

VI. Compliance Schedules

Given the challenge of implementing a BNR project for even the largest treatment facility owner, the Commission determined that it is appropriate to specifically recognize the factors to be taken into account by the Division in establishing a compliance schedule in a permit for this type of infrastructure project. Planning and construction of a BNR project is more complex than for other wastewater infrastructure projects such as a facility expansion. These projects are expensive and financing their construction and ongoing operation will likely require increases in user rates and the entity will need additional time to educate decision makers (Council/Board members) and to develop and present information to the ratepayers in support of the project. Also, these projects typically involve the addition of new treatment basins that had not been anticipated during the initial design of the facilities, therefore determining the right location can be challenging. Finally, these projects will require a higher level of operator expertise so significant time will be needed to train existing staff and/or to obtain new operators. The Commission recognizes that in many instances long-term compliance schedules will be needed for existing dischargers to complete these and other potential steps necessary to implement BNR treatment.

VII. Exceptions

The Commission provided exceptions to the requirement to meet the nutrient effluent limits for several situations where the discharge from a treatment facility ~~would~~ is presumed to not have a significant impact ~~upon~~ nutrient loads in the receiving waters or downstream reservoirs.

The Commission found it appropriate to make an exception for facility owners that demonstrate that the discharge from the wastewater treatment plant (i.e., without additional nutrient removal) ~~of nutrients from the raw wastewater~~ will not cause the receiving water to exceed the interim numeric nutrient values for total nitrogen and/or total phosphorus in Regulation #31 ~~as this would be protective of the uses of the receiving water.~~

The Commission applied an exception to discharges of noncontact cooling water that withdraw water from the stream receiving the discharge and to which no nutrients (nitrogen or phosphorus) are added. This is appropriate as there would be no nutrients added and the load being returned to the receiving stream would be no greater than that withdrawn.

Similarly, the Commission provided an exception for discharges of ground water being pumped to draw down the ground water level. Typically this would apply to construction dewatering which is a temporary activity and to building sumps that usually discharge relatively small amounts of water. Normally these activities are pumping very shallow (alluvial) ground water that is connected to the receiving stream and any impact will be short-lived or minor.

VIII. Variances

As part of this rulemaking, the Commission adopted subsection 85.5(3)(c) that describes the process and criteria for granting a variance and provides for the implementation of alternative effluent limits for TIN and TP in certain situations. For process wastewater discharges, a variance establishes an alternative effluent limit value for a specific point source discharge that takes the place of the technology-based effluent limit specified in section 85.5. During the term of the variance, all other effluent limits not specifically modified remain applicable. Variances ensure that the highest attainable level of nutrient water quality is achieved that is consistent with the reasonable relationship test. Variances must be reviewed at the time of permit renewal and may be revised, renewed or denied as appropriate.

Variances granted by the Division pursuant to this regulation affect only the requirement to meet the effluent limitations at 85.5. There is no presumption regarding whether a discharger-specific variance to a water quality standard, (pursuant to subsection 31.7 (4)), would be granted by the Commission. Consideration of such variances would only be considered after nutrient water quality standards are adopted for the segment.

Criteria for granting a variance: The Commission adopted a “reasonable relationship” test based on the Legislative declaration in the Colorado Water Quality Control Act, C.R.S.section 25-8-102(5): *the water quality benefits of the pollution control measures [shall] have a reasonable relationship to the economic, environmental, energy and public health costs.*

The reasonable relationship test relies on an evaluation of the total wastewater treatment cost (including the cost of meeting the section 85.5 effluent limits), the community’s ability to pay, and the ~~apportionment of the responsibility for~~ relative contribution of the current nutrient condition loading from the facility in the watershed where the discharge is located. In this way, this regulation establishes a more rigorous test for a variance where point sources ~~contribute are responsible for~~ more of the nutrients in a watershed than unregulated sources, based on an evaluation of appropriate nutrient monitoring data.

Economic analysis: The Commission intends that the Division rely upon portions of EPA’s *Interim Economic Guidance for Water Quality Standards* (EPA 1995) methodology for determining whether a specific pollution control measure results in “substantial impacts.” For the reasonable relationship test, the Commission is not relying upon the portion of the EPA guidance that evaluates whether the impacts are “widespread”.

For public sector entities, the economic evaluation depends on the calculation of the Municipal Screener (referred to in the 1995 Guidance as the “Municipal Preliminary Screener”). The Municipal Screener acts as an index of ability to pay and means the total annualized cost of water pollution control at the DWWTW, including the cost of meeting the effluent limitation at 85.5, divided by the median household income:

$$\text{Municipal Screener} = \frac{\text{Average Total Wastewater Treatment Cost per Household}}{\text{Median Household Income}}$$

Chapter 2 of the 1995 Guidance provides direction and explanation of how to calculate the Municipal Screener. A definition “Municipal Screener” was added at 85.4(5). A larger Multiple Screener indicates that the community has a lower ability to pay.

For private sector entities, the economic evaluation depends on an assessment of the primary measure of profitability. The secondary measures of liquidity, solvency and leverage can be used to show a similar reduction in ability to pay. Chapter 3 of the 1995 Guidance describes how these factors are evaluated.

For both public sector and private sector entities the specific values adopted for different categories of facilities based on a policy choice in light of currently available information. If practical experience in

implementing this regulation warrants, the Commission can consider revising these values in subsequent triennial reviews.

Apportionment of Responsibility/Relative Nutrient Contribution: The second part of the reasonable relationship test involves determining the relative contribution of apportioning responsibility for the nutrient ~~conditions~~ loadings within the 8-digit hydrologic unit code (HUC8) watersheds in which the discharge is located. The ~~responsibility~~ relative contribution is determined ~~apportioned~~ based on the percentage of the total incremental nutrient load that is contributed by permitted process wastewater point sources. The “incremental load” is the mass of nutrients generated within a watershed unit (e.g. HUC8), independent of the sources upstream from the watershed unit.

Stepwise Scale for Granting a Variance: The Commission has established tiered criteria for the Division to follow when granting a variance to the effluent limits contained in section 85.5 based on the reasonable relationship test. For public sector entities, these criteria relate the incremental load attributable to point sources to the municipal screener value. Where point sources are responsible for a greater portion of the majority of the TN or TP load, a higher Municipal Screener is necessary to qualify for a variance. Likewise, where they have a relatively small effect on the incremental load, a variance may be granted for a lower Municipal Screener. Since WWTPs can be optimized for treatment of one nutrient at the expense of the other, each nutrient is assessed separately and a different conclusion may be reached for TN than TP.

The first tier is for watersheds where more than 50 percent of the TN or TP load results from aggregated sources that are required to institute nutrient controls by this regulation. In this tier, for public entities, a Municipal Screener value of 2 or more is necessary to qualify for a variance from the TIN or TP limits at 85.5(1). For private sector entities, the required increase in treatment will cause a 10 percent or greater change in the entity’s level of profitability, or have a similar effect on the entity’s liquidity, solvency, and leverage.

As the aggregate point source responsibility decreases, for public sector entities, a lower Municipal Screener value qualifies the discharger for a variance. For private sector entities, the required changes in profitability and other measures also decline. At 20 percent or less responsibility for the TN or TP aggregate point source incremental load, a Municipal Screener value of 1 (or a 5 percent change in profitability) qualifies a discharger for a variance.

Selection of the Alternative Effluent Limits for Process Wastewater Dischargers: A request for a variance must be accompanied by proposed alternate effluent limits that represent the highest degree of nutrient removal that is consistent with the reasonable relationship test. During the term of the variance, it is the Commission’s intent that the permit require progress towards meeting the alternative limit as quickly as feasible. Steps necessary to document that progress will depend on facts of a specific situation and the basis for the variance. In some cases, investigation of treatment technologies should continue; in others, it may require long-range planning for wastewater reuse, where allowed, or process modification.

IX. Trading

Point Source to Point Source Trading: The Commission established provisions for point source to point source trading with the understanding that the owner of an upstream facility would have to agree to reduce its loading in an amount equal to the load that a downstream facility will discharge in excess of that allowed under Regulation #85. Trading will be useful in many situations, particularly where a smaller downstream facility can receive a large increase in effluent concentration by a large upstream facility taking a relatively small reduction in effluent concentration below the effluent limit.

Nonpoint Source to Point Source Trading: ~~The Division is still contemplating adding specific provisions for this type of trading.~~ The purpose of section 83.5(3)(d) is to establish an alternative that allows CDPS permit holders flexibility in achieving the concentration/load-based reductions in total phosphorus (TP) and total inorganic nitrogen (TIN) that would otherwise be achieved by the new effluent limits. The

Commission anticipates that by allowing such voluntary water quality measures, it will: (a) Improve water quality and optimize the use of cost effective approaches to achieving and maintaining reduced nutrient loading; (b) Provide for point source nutrient concentration/loading reductions equal to, or greater than, the effluent limitations authorized by Regulation 85; (c) Provide for voluntary nonpoint source reductions and point source discharge reductions beyond those authorized by Regulation 85; (d) Encourage early point source nutrient load reductions and accelerated progress toward meeting pending numeric nutrient water quality criteria (Regulation #31); and (e) Encourage a watershed approach that achieves multiple environmental and economic benefits, such as wetland restoration or the implementation of management practices that improve water quality and aquatic habitat and health. The Colorado Pollutant Trading Policy (Policy) is intended to provide the Division with guidance in implementing section 83.5(3)(d). While the Policy does not allow for trading where there are technology-based effluent limits, that provision was based on a prohibition of trading against federal technology-based effluent limits. Because the effluent limits in Regulation #85 are state-only limits, the Commission finds that it is appropriate to allow trading. The Commission recognizes that nonpoint source to point source trading may require significant resources for implementation. Unless the Division receives additional resources for this purpose the Commission understands that review of trades, particularly those for nonpoint source to point source, may not occur expeditiously.

X. Nutrient Source Reductions at MS4s

~~The Commission found that there is relatively little information on the contribution of nutrients from MS4s. In view of that, the Commission finds that it is an appropriate initial step for MS4s to be required to enhance the public education and outreach and municipal operations efforts undertaken as a result of the requirements in their existing permits. This will be done by focusing attention on nutrients discharged from municipal operations and other sources of nutrients to effect reasonable reductions.~~

~~In the area of public education and outreach, this should include evaluation, identification and targeting of specific residential, industrial, agricultural, and/or commercial nitrogen and phosphorus sources that are contributing, or to have the potential to contribute, nutrients to the waters receiving the discharge authorized under the permit for the MS4. Evaluation and identification should be documented and include identification and assessment of current potential nutrient contributions to the MS4, identification of sources for which a reduction in nutrient discharges are likely to be obtained through education, and prioritization of sources for implementation of the education program based on these assessments.~~

~~In the area of municipal operations, this should include evaluation, identification and targeting of specific nitrogen and phosphorus sources that are contributing, or to have the potential to contribute, nutrients to the MS4 permittee's receiving waters.~~

~~This Control Regulation establishes monitoring requirements for MS4s. Based on review of the information that is collected from that monitoring, the Commission intends in future triennial reviews to revisit the substantive requirements for MS4s.~~

The Commission finds that it is an appropriate initial step for MS4 permittees to be required to address nutrients through public education and outreach and municipal operations programs. In accordance with the regulation, these requirements shall be incorporated into the CDPS Permit for discharges from MS4s that are required to obtain a CDPS Permit pursuant to Regulation #61. The Commission does not currently have adequate information to determine the relative contribution of nutrients from MS4 to state waters that would support an assessment of the need for controls beyond those identified above.

Public education and outreach regarding nutrients must include identification and targeting of nitrogen and phosphorus sources that are contributing, or have the potential to contribute, nutrients to discharges from the permitted MS4. Identification should include types of sources for which a reduction in nutrient discharges are likely to be obtained through education, and prioritization of sources for implementation of the education program.

The MS4 permittees' municipal operations programs should include reducing nitrogen and phosphorus sources in runoff from municipal operations. To meet this requirement, an MS4 permittee must evaluate its operations and facilities to identify sources of nitrogen and phosphorus discharges from the MS4 that can be controlled through implementation of structural and nonstructural pollutant control practices.

The Commission encourages MS4 permittees to participate in collaborative efforts to evaluate, identify, target and provide outreach that addresses sources state-wide or within the specific region or watershed that includes the receiving waters impacted by the MS4 permittee's discharge(s).

Based on review of the information that is provided, as well as information from potential future monitoring requirements, the Commission intends to revisit the substantive requirements for MS4s in future triennial reviews.

XI. Nonpoint Source Discharges of Nutrients

The Commission has determined that control of nonpoint sources of nutrients is an essential part of the protection of water quality and assigned uses within Colorado. Section 85.5(5) identifies entities with responsibility for activities or facilities that cause, or could be reasonably expected to cause, nonpoint source nutrient pollution and the need for implementation for nonpoint source controls. These activities include the areas of Best Management Practices, Public Information and Education, and Additional Nonpoint Source Actions as necessary nonpoint nutrient management activities. The Commission identified these nonpoint source controls as a means to make progress towards protecting existing or restoring impaired classified uses from nutrient pollutants.

A. Best Management Practice Implementation

Section 85.5(5) emphasizes that Best Management Practices (BMPs) are to be voluntarily implemented by entities responsible for nonpoint source nutrient pollutants. All applicable entities are encouraged to be active participants in reducing the impacts of nonpoint source nutrient pollutants through these efforts. The Commission will evaluate the implementation of BMPs during each triennial review of this regulation. Prior to each triennial review, the Division will request information from the responsible entities and other relevant stakeholders to determine the extent of implementation. In subsequent triennial reviews, the Division will request information to determine the effectiveness of voluntary BMP implementation.

The specific agricultural BMP of nutrient management planning is also encouraged to be implemented through this control regulation. The development of nutrient management plans for irrigated crop production operations are an important initial means of reducing nonpoint source nutrient impacts to surface and ground water resources. The Commission requests that the Division coordinate with the Colorado Department of Agriculture, U.S. Department of Agriculture Natural Resources Conservation Services, and Colorado State University Extension Service to develop a process to identify, implement, and verify the application of this specific BMP. The Commission also requests that the Division collaborate with owners/operators of agricultural operations in pursuing incentive, grant, and cooperative programs to control nonpoint source pollution related to agricultural and silvicultural practices. Entities including the Colorado Department of Agriculture, Colorado Water Resources and Power Development Authority, U.S. Department of Agriculture Natural Resources Conservation Services, and others will be engaged to identify potential funding opportunities.

B. Public Information and Education

The regulation encourages that a public information and education program be developed and implemented by the Division and entities responsible for nonpoint source nutrient pollutants. The Commission recognizes that public information and education is an effective means to address all

nonpoint source pollution impacts. A focused information and education effort is anticipated to reduce current and potentially avoid future water quality impacts from excessive nutrients.

C. Additional Nonpoint Source Actions

The Commission has determined that the progress and implementation of the activities identified in this section will be reviewed at each triennial review. These periodic evaluations will be used to assess the effectiveness of voluntary nonpoint source nutrient pollution controls. The existing extent of nutrient nonpoint source impacts, especially from irrigated crop production, has not been consistently assessed from a statewide perspective. Additionally, water quality improvements resulting from BMP implementation typically require several years for implementation to be measurable, and therefore require that a reasonable timeframe be used for evaluation. After 10 years, the Commission may consider adoption of additional prohibitions or precautionary measures if voluntary controls on nonpoint sources are shown to be ineffective in reducing nutrient loads and protecting classified uses. The Commission considers 10 years a reasonable period for potential funding sources to be identified and appropriate nutrient nonpoint source management activities to be successfully implemented and evaluated. This evaluation will be based on the provisions identified in section 25-8-205(5), C.R.S. and the success in voluntary BMP implementation relative to existing incentive, grant, and cooperative programs.

Nationally, there has recently been increased discussion of options to provide “agricultural certainty” with respect to nonpoint source control of nutrients. The general concept is that if agricultural producers implement certain control efforts voluntarily, they would receive some protection from additional requirements at the time that requirements may become mandatory. At the first triennial review of this new control regulation, the Commission may consider developing a regulatory certainty framework for agricultural producers not required to be permitted under this control regulation in addition to the existing BMPs and Public Information and Education activities. Consideration of this additional action will be based on the progress and implementation of these activities and further assessment of the viability of the agricultural certainty concept. The Commission’s goal in considering a regulatory certainty framework is to increase producer adoption of nutrient nonpoint source controls consistent with this control regulation by providing incentives that increase the pace and extent of measurable nutrient load reductions. The framework would be designed to provide assurance to agricultural operations that investment in appropriate nutrient nonpoint source controls that result in substantive progress in reducing nutrient loads as envisioned in this control regulation will be recognized at the time that any new mandatory requirements may be established in the future. The development and implementation of this framework would require coordination with local, state, and federal agencies such as state conservation districts, Colorado Department of Agriculture, and the U.S. Department of Agriculture Natural Resources Conservation Services to ensure the effectiveness, efficiency, and leveraging of available technical and financial resources. The Commission will consider the availability of funding for Division development of the framework and the implementation of the appropriate activities by the applicable agricultural operations in determining the need for adoption of this additional nonpoint source provision.

XII. ~~Process Wastewater Monitoring~~

The Commission has determined that monitoring nutrient conditions is an important component of a statewide nutrient pollution control strategy and is appropriate to include in this control regulation. The Colorado Water Quality Control Act directs the Commission to “develop and maintain a comprehensive and effective program for prevention, control, and abatement of water pollution and for water quality protection throughout the entire state” and authorizes it to “exercise all incidental powers necessary or proper for carrying out the purposes of [the Act].” C.R.S. § 25-8-202(1)(i). The Commission is “authorized to take all action necessary and appropriate to secure to this state...the benefits of said act.” C.R.S. § 25-8-202(6). The legislature specifically directed the Commission to “promulgate such regulations as may be necessary and proper for the orderly and effective administration of permits for the discharge of

pollutants...The regulations may pertain to and implement...restrictions with respect to...monitoring.” C.R.S. § 25-8-501(3)(d). While the Commission decided to implement monitoring through this Control Regulation rather than through permit requirements, monitoring and data collection is required under the Control Regulation for permitted point sources subject to the permitting requirements.

The Commission has authority to adopt control regulations to describe effluent limitations on specifically identified pollutants (C.R.S. § 25-8-205(1)(a)) and to describe precautionary measures that must be taken by any party that could reasonably be expected to cause pollution of state waters in violation of control regulations (C.R.S. § 25-8-205(1)(c)). The purpose of this control regulation is for the reduction of nutrients in state waters. Therefore the Commission is adopting effluent limitations as well as monitoring requirements as a precautionary measure to implement the effluent limits. The focus of this data collection effort will be to evaluate the effectiveness of this control regulation in protecting and restoring use classifications, to support quantification of sources, to identify nutrient trading opportunities, and to facilitate eventual implementation of appropriate and necessary source control measures. The monitoring provisions in section 85.6 are an initial phase of surface water data collection and analysis. The Commission recognizes that the provisions of these monitoring requirements might change at subsequent triennial reviews of this regulation.

A. Comprehensive Data Collection and Assessment

Success of a comprehensive nutrient control strategy will depend on adequate data to support decision making. The Commission recognizes that in order to be comprehensive, data collection must extend beyond the domain of this control regulation. While monitoring requirements in this control regulation described in the following sections have a narrow set of objectives, a broader focus will be needed to answer the factual and policy questions that will arise as Colorado moves toward developing and implementing a comprehensive strategy.

The focus of the requirements in this regulation is to gather data that can be assessed to inform an analysis of the effectiveness of this control regulation, to support quantification of sources, and to support development of requirements for additional source controls shown to be necessary. Other factual and policy questions for which data collection is an important part include: the appropriate refinements to nutrient table values; the appropriate nutrient site-specific standards; which waters exceed standards after development; and, the appropriate load allocations and wasteload allocations if a TMDL becomes necessary.

This Control Regulation is not the appropriate vehicle to facilitate the acquisition of data to address all of these data needs. Currently, water quality data collection efforts around the state are focused on specific questions which may or may not be useful in a larger context. Therefore, the Commission urges the Division and stakeholders to coordinate future planning and sampling efforts to maximize the usefulness of the data.

The monitoring requirements specified in Regulation 85 will impose additional service demands on the monitoring, assessment, and reporting areas within the Division. The Commission recognizes that unless additional resources are acquired, current state-wide monitoring responsibilities other than nutrients cannot be maintained unless other parties conduct additional monitoring in lieu of the Division. The impacts to the state-wide monitoring activities will be assessed by the Division and provided to the Commission on an annual basis.

The Commission directs the Division to evaluate the data gathered in response to the monitoring requirements in Regulation 85 to identify potential information gaps, both for the goals of the Control Regulation and from a state-wide perspective. At the first triennial review of Regulation #85, the Division should report on the progress of Control Regulation monitoring requirements and other nutrient monitoring focused on the other broader issues.

B. Process Wastewater Monitoring

Entities shall commence data collection no later than March 1, 2013. This deadline provides time to allow for coordination with nearby point source facilities, non-point sources, and other known monitoring efforts, as well as to allow for the purchase of equipment and requisite training.

Past and current nutrient data collection efforts have been conducted by the State, local and private entities that focus on a variety of other aspects of the nutrient conditions in the state. The Commission encourages the implementation of a statewide, appropriately scaled watershed-based monitoring program, but realizes that site-specific and facility-specific circumstances may prove challenging. Existing monitoring networks may fulfill the requirements of this section.

1. Applicability

The monitoring requirements in this section apply to all CDPS-permitted facilities that discharge nutrients that may, without treatment, discharge total nitrogen or total phosphorus concentrations in excess of the respective effluent limitations identified in this regulation. Facilities identified as exempt from the effluent limits are required to implement the identified monitoring activities. The scope of monitoring requirements is reduced for discharges to lakes or groundwater as noted below.

2. Required Elements

Monitoring elements include the sampling location, ~~certain physical~~, chemical, ~~and biological~~ parameters, frequency of sampling, and timing considerations relevant to the types of water bodies of interest. At each location, samples shall be analyzed for both total nitrogen and total phosphorus. Total nitrogen is required in this portion of the control regulation because that is the most representative of the nitrogen in the environment. The Commission recognizes that a portion of the nitrogen discharged by wastewater treatment plants may not be immediately bioavailable, but over the timescale of days to weeks, much of this nitrogen will become available. Total nitrogen may be determined either as a single constituent (such as by the Lachat Method) or by calculation using the component fraction (such as total Kjeldahl nitrogen plus nitrate-nitrite nitrogen). Laboratory method detection limits (MDL) are specified to ensure that loads can be calculated on a scale that is useful for regional and statewide assessments. The Commission recognizes that there is a greater uncertainty in any values reported for individual data points between the minimum reporting limit (MRL) and MDL (also known as "J data" because such values are flagged with a "J"). However, the patters of data points that includes "J data" at a location can provide important and useful information about the nutrient conditions at that location. The Commission and Division will not base decisions on "J data" results alone and will take into account the confidence and precision of any analytical results.

3. Process Wastewater Point Source Monitoring

In addition to compliance monitoring to ensure that the technology-based effluent limits in section 85.5 are not exceeded, dischargers are required to sample, analyze and report on nutrient conditions and flow in the effluent and receiving waters.

Effluent Monitoring: Effluent monitoring is required to commence March 1, 2013. The Commission has determined that final action adopting this Control Regulation in April 2012 provides sufficient time for dischargers to develop and implement an effluent monitoring plan by March 2013. Effluent shall be sampled at a point before it is discharged in to the receiving water body. This location is the same point at which permit compliance samples are taken. Nutrient concentration (total nitrogen and total phosphorus) of the effluent, along with daily average effluent flow shall be determined. Flow and nutrient concentrations must be concurrent so that accurate nutrient loading can be calculated on each sampling date.

Effluent monitoring serves two purposes. First, it defines the baseline of nutrient loads for each facility. In all but a few situations, it is anticipated that March 2013 will precede significant nutrient removal activities at these facilities. As the other sections of this control regulation become effective at individual facilities, baseline loads will help determine actual nutrient removal effectiveness. Second, effluent monitoring will provide a portion of the data needed to help the Division and stakeholders quantify sources and begin to assess the relative source contributions on a regional and watershed scale. The monitoring and assessment activities determine the practical effect of implementing the control regulation.

Stream Nutrient Upstream Monitoring Locations: Total nitrogen and total phosphorus concentrations will be monitored in the receiving water immediately above the point of discharge. This information will provide the basis for reasonable potential determinations and an essential component of WQBEL calculations where needed.

Downstream Monitoring: Total nitrogen and total phosphorus concentrations and flow are also required to be monitored at one fully mixed location downstream of the discharge. ~~Additional flow measurements between scheduled nutrient concentration sampling are necessary to determine the flow regime of the receiving water body and improve the accuracy of nutrient loading estimates calculated for each sampling date.~~

Two alternatives for this monitoring are identified in the control regulation. One option is for the entity to select a Colorado Division of Water Resources or USGS active flow gage station downstream of their discharge and to collect samples at that location. This option has the benefit of being able to rely upon publically available daily flow records and thereby relieve the entity of the necessity of measuring flow as well as taking the water sample. The daily flow measurements are necessary to determine the flow regime of the receiving water body between scheduled nutrient sampling dates and improve the accuracy of nutrient loading estimates on a larger time scale. The Commission recognizes that there may be other nutrient sources between the outfall and the sampling location. This requirement should not be construed to mean that the discharger is "responsible" for the nutrients, only for characterizing the flow and concentration at that point.

The second alternative is based on recognition that ~~several point source discharges~~ stakeholders wanted flexibility on the location of downstream monitoring locations to make efficient use of existing collaborative water quality monitoring programs. There are several watersheds in Colorado where coordinated monitoring programs have been in place for some time. Examples include those associated with reservoirs subject to control regulations (Dillon, Cherry Creek, Chatfield, and Bear Creek) and those operated by watershed groups (i.e., Big Dry Creek, Upper Clear Creek, Poudre, Upper Gunnison, Animas, and others).

These reservoir control regulations and watersheds groups have a considerable investment in a monitoring record that could be helpful for addressing the implementation of this Control Regulation. The Commission agrees that it makes sense to build on past efforts where an existing sampling site provides information of comparable value to the new site, and would have the added benefit of a longer period of record. The Commission expects the Division to evaluate the data from an existing monitoring program on a case-by-case basis, as long as the sampling site(s) meet the flow and parameter requirements, and determine its applicability to the monitoring program.

The Commission recognizes that there may be stream segments where an established gauging station is not available or is located a significant distance below a discharge. An alternative stream flow calculation methodology may be submitted to the Division to meet the requirements of this section. The Division will review the submittal to determine its ability to provide the necessary data.

Lake and Reservoir Monitoring: The Commission has not imposed receiving water monitoring requirements on those entities that discharge to lakes and reservoirs at this time. In order to obtain useful data, monitoring water quality in lakes and reservoirs involves boats, special equipment and training. Currently, there are very few facilities in this category and most are already engaged in cooperative monitoring efforts. In future reviews of this regulation, the Commission anticipates that this provision will be re-evaluated to see if specific lake and reservoir information can be obtained effectively using this vehicle.

Monitoring Frequency: Monitoring frequency is based on the size of the facility. Major facilities (generally discharging 1 million gallons per day (MGD)) are required to sample on a monthly basis. Minor facilities (generally discharging less than 1 MGD) are required to monitor once every two months.

C. Stormwater Monitoring Data Collection

~~[THIS SECTION WILL BE FURTHER REVISED AFTER CONTINUING DISCUSSION WITH STAKEHOLDERS]~~

A. ~~Applicability~~

~~The Commission included Municipal Separate Storm Sewer System (MS4) monitoring requirements for cities, towns, counties, and city and counties that are required to have a CDPS discharge permit pursuant to Regulation #61 for stormwater discharges from an MS4. The Commission did not include requirements for "non-standard" MS4 permittees (e.g., special districts, school districts, universities, etc.) at this time as these entities are generally smaller and the Commission expects that the required MS4 monitoring will be representative of these additional MS4s. The monitoring requirements are also only applicable to entities for which permit coverage was obtained prior to March 1, 2012. It is expected that several additional MS4s will be permitted in 2013 following release of 2010 census data. Although the monitoring requirements included in this version of the regulation will not apply to the new permittees, the Commission encourages these permittees to consider a voluntary monitoring program to provide data consistent with the monitoring requirements and deadlines in the regulation. Information obtained from MS4 monitoring required by this regulation, and any voluntary monitoring, will be used by the Commission to determine the need for and potential nature of future monitoring or nutrient control requirements for MS4s. Providing voluntary data will allow for data specific to the new permittees' MS4 discharges to be considered in future rulemakings and permitting decisions.~~

~~Monitoring requirements have not been included in this regulation for additional point source discharges of stormwater. The Commission has not identified these discharges as a whole as a significant relative contributor of nutrients to State waters. If, based on additional evaluation and consideration, specific activities and facilities associated with point sources other than MS4s are identified as potentially significant sources of total nitrogen or total phosphorus, this determination will be reconsidered in future triennial reviews.~~

B. ~~Municipal Separate Storm Sewer System Discharge Monitoring~~

~~The goal of the MS4 monitoring requirements is to obtain quantitative and qualitative information and analysis to determine the relative contribution of nutrients to state waters from the largest MS4 discharges. The intent is to characterize current conditions. This initial effort to characterize discharges from MS4s is intended to focus on the contribution from MS4 discharges in Colorado on a broad basis, instead of for specific outfalls. However, the regulation requires an MS4 permittee to provide data that is representative of its discharges to help ensure that the characterization identifies information adequate to inform potential next steps for assessment to determine if stormwater-related nutrient loads to Colorado's surface waters need to be further~~

reduced. The regulation does not include requirements for on-going monitoring after the initial characterization. The Commission envisions monitoring requirements for MS4s to be an iterative process for which initial monitoring results will be evaluated to determine the need for and focus of future regulatory requirements, including evaluation of the effectiveness of this Control Regulation.

Characterization of discharges from MS4s poses unique challenges that require consideration of the specific system, contributing areas, and monitoring information that is representative. The Commission recognizes this challenge and has therefore generally not dictated prescriptive requirements for data collection. Instead, the regulation provides flexibility through a series of options for an MS4 permittee to follow to meet the overall initial intent to support characterization of nutrient contributions from MS4s. The Commission intends for the requirements included in this control regulation for characterization of discharges from MS4s to be supported by issuance of a Division policy that provides further guidance on the actions required to meet the regulation's requirements. This approach will allow for a more consistent, collaborative, and effective statewide implementation.

The Commission recognizes that there are existing monitoring programs that are collecting samples from MS4 discharges and/or from receiving waters relevant to the characterization required by this regulation. In addition, previous studies exist that provide nutrient concentrations and/or loads from MS4 discharges from a variety of land uses. It is not the intention of the Commission to require MS4 permittees to duplicate these efforts. This regulation includes an option and associated direction for using existing data and monitoring programs that will result in representative information being provided. It is the responsibility of the MS4 permittee to review and analyze the data as necessary to ensure it is representative and will provide a sound basis for future decision-making, including potential future requirements for monitoring or implementation of controls that may apply to the permittee.

The Commission also strongly encourages, and has authorized explicitly in this regulation, collaboration between MS4 permittees to meet the requirements of this regulation. Included in this authorization, is an allowance for an MS4 to contribute to and rely on data collection associated with discharges and/or receiving water outside of its own system. The Commission intends for this flexibility to provide an opportunity to increase the efficiency and accuracy of the data while ensuring that the data are representative of the quality of the stormwater flowing from the MS4. The Division's guidance for monitoring should also include approaches and processes to help ensure that when a collaborative effort is used, that the overall scale of information collected must be consistent with what would be realized through separate efforts by the individual MS4s.

The Commission is requiring a three-stage process for developing and implementing a program to provide the required data and supporting information: development of plans, data collection, and data analysis.

Discharge Assessment Plans: Discharge Assessment Plans must be developed and submitted by 2014. The plan is to include identification of existing data, and what is essentially a gap analysis to identify whether additional data must be obtained through monitoring. The plan is then required to lay out the process that will be implemented to generate representative data and to identify the approach to analyze the data so that the relative contribution of nutrients being discharged from the MS4 is established. The plan is required to identify the sources that will be relied on (e.g., studies, databases, past monitoring plans, etc) for existing data that will be used for the assessment. If the assessment will need to rely on data generated through new monitoring activities, either from existing monitoring programs or development and implementation of new programs, the plan must include the procedures that will be followed to obtain this data. The plan must include specifics on the monitoring plans that will be implemented

to obtain representative data, including identification of the planned monitoring locations and sampling frequency.

In the interest of keeping the Division's workload at a reasonable level and to encourage collaborative efforts, the Commission is requiring permittees that do not develop a collaborative plan on a watershed level to have a qualified third-party review their Discharge Assessment Plan prior to submittal to the Division. The Commission recognizes that data assessment plans may require revision during the implementation. Permittees must document modifications by amending the plans.

Wet Weather Data Collection: The control regulation provides two options for collecting data to characterize the quality and load of nutrients from precipitation-driven discharges from MS4s.

The first option is to base the characterization on information regarding discharges from the MS4. Significant existing data is available that provides information on nutrient concentrations for wet-weather MS4 discharges for specific land uses. A permittee incorporating this existing data into its representative data bank must obtain information on the source of the data and on the information for the permitted area (e.g., land uses, imperviousness, watershed hydrology, and precipitation data) to allow for analysis to ensure that the data is representative of the MS4's discharge. Some existing sources may not provide adequate supporting information or may be based on conditions that are not suitable to meet the requirement to determine and document that the data is representative. New monitoring data can be used in place of, or to supplement, existing data. Permittees conducting monitoring of their own MS4s, either individually or collaboratively may rely on monitoring of selected specific locations that is supported by analysis to provide representative information for the collective MS4 discharges, in place of monitoring the majority of, or all, outfalls.

Alternatively, characterization may be based on data of nutrient concentrations and flows in a receiving stream that can then be used to approximate the loading to the stream from MS4 discharges. The Commission recognizes that this second approach may be more cost-effective and provide a more comprehensive characterization of the contribution of nutrients from an MS4 when done as part of a collaborative effort. When done by an individual MS4, costs would be higher and difficulties in identifying representative monitoring locations may limit the suitability for some MS4 permittees. Because in-stream monitoring provides for data that is from the entire watershed contributing runoff from a storm event, the data does not provide the same opportunity for analysis and application to MS4s outside of that watershed that is allowed for by individual outfall monitoring. For this reason, in-stream monitoring is required to be from the receiving water for the specific MS4(s) using this option. The regulation does allow for previously obtained data for the receiving water to be used, when the data is representative of current conditions.

Dry Weather Data Collection: A variety of non-precipitation driven discharges occur from MS4s. The Commission is requiring an initial focus on characterizing dry weather nutrient contributions from discharges associated with urban turf and landscape irrigation (e.g., residential, park, and golf course watering). Additional sources are initially assumed to not be significant contributors of nutrients; or are currently being addressed directly by CDPS permit requirements applicable directly to the discharge or through the MS4 permits that are expected to reduce or eliminate nutrient contributions from the source. The Commission recognizes the challenges of implementing a monitoring plan that isolates irrigation flows, however, the requirements of the regulation are expected to result in data that can provide viable information to determine the overall potential for this source to be contributing significant loads of nutrients. In many cases this may require that monitoring data be from within a collection system, in locations that minimize influence from other sources. Existing data may be available that provides information on nutrient concentrations in MS4 discharges from irrigation flows. As with wet-weather data collection for outfalls, using existing data will require analysis to provide representative information to characterize the MS4s' discharge. For data collection using new discharge

~~monitoring, only a subset of discharge events and locations are required to be monitored, as necessary to provide representative data.~~

~~Data Analysis: The Commission notes the importance of assessing the collected data to the point where general conclusions can be reached as to the contribution of nutrients from the MS4. The Commission recognizes that a full understanding of the analysis necessary may not be known until after the data collection has been initiated. However, the analysis requirement has been included in the regulation at this time to set an overall goal for the plan development and data collection stages. A longer time period is allowed for completion of collection to support the analysis when significant new monitoring will be needed, as determined in the specific plans. The data analysis required will be similar for data collection from both existing data sources and new monitoring. Both sources will require analysis based on the actual variables associated with the MS4 to provide a representative characterization of the relative contribution of nutrients from the MS4. When using existing data sources, more extensive analysis will likely be necessary to manipulate the data in such a way to account for the likelihood of more significant differences between conditions applicable to the permittee's MS4 and those specific to the area originally monitored to obtain the data.~~

A. Applicability

The Commission included requirements for specific entities (e.g., cities and counties) that are required to have a CDPS discharge permit pursuant to Regulation #61 for stormwater discharges from a Municipal Separate Storm Sewer System (MS4). These MS4s are required to identify representative available information and necessary additional information (the "gap") that in combination can be used to characterize the relative contribution of nutrients from the MS4 discharge to state waters. The Commission did not include requirements for "non-standard" MS4 permittees (e.g., special districts, school districts, universities, etc.) at this time as these entities are generally smaller and the Commission expects that the information required to be provided in the regulation will be representative of these "non-standard" MS4s. The requirements are also only applicable to entities for which permit coverage was obtained prior to March 1, 2012. It is expected that several additional MS4s will be permitted in 2013 following release of 2010 census data. Although the requirements included in this version of the regulation will not apply to the new permittees, the Commission encourages those permittees to consider voluntary participation in collaborative data collection efforts with other MS4 permittees that is consistent with the regulation. Information obtained from MS4 data collection required by this regulation, and any voluntary data collection, will be used by the Commission to determine the scale and scope of future monitoring or nutrient control requirements for MS4s. Providing voluntary data will allow for data specific to the new permittees' MS4 discharges to be considered in future rulemakings and permitting decisions.

Requirements to provide information to characterize discharges from additional point source discharges of stormwater have not been included in this regulation (e.g., stormwater discharges associated with industrial activities and construction). The Commission has not identified these discharges as a significant relative contributor of nutrients to state waters. If, based on additional evaluation and consideration, specific activities and facilities associated with point sources other than MS4s are identified as potentially significant sources of total nitrogen or total phosphorus, regulatory requirements for these additional stormwater discharges may be reconsidered. The Commission intends to address future monitoring requirements for MS4s in the first triennial review of Regulation #85 that will take place in 2015. Therefore, the data report to identify existing information and to characterize the information gap will be due in October of 2014 to provide time for the Division to review and make necessary changes in time for final information to be used to inform the regulatory changes.

B. Municipal Separate Storm Sewer System Discharge Data Collection

The goal of the MS4 data collection requirements is to identify information that exists, and the need for additional monitoring to be conducted in the future, to determine the approximate nitrogen and phosphorus contribution to state waters due to discharges from the MS4. The intent is to ultimately fill the

gap in data so that a one-time “snapshot” of the contribution of nutrients to state waters is provided. This initial effort to characterize discharges from MS4s is intended to focus on the contribution from MS4 discharges in Colorado on a broader basis instead of for specific outfalls. However, the regulation requires a MS4 permittee to assess data that are representative of its discharges to help ensure that the characterization identifies information adequate to inform potential next steps for assessment to determine if stormwater-related nutrient loads to Colorado’s surface waters need to be further reduced.

The Commission recognized that there are existing monitoring programs that have provided data based on samples having been collected from MS4 discharges, as well as additional monitoring programs that can provide information relative to characterizing discharges from MS4s. In Colorado, these monitoring programs are being implemented by Phase I MS4 cities, in watersheds where phosphorus control regulations have been adopted, and through other voluntary efforts. In addition, previous studies exist that establish concentration ranges for wet weather discharges from a variety of land uses. It is not the intention of the Commission to require MS4 permittees to duplicate these efforts. Therefore, the regulation is not requiring that additional monitoring be conducted until these existing sources of information have been assessed.

Because the data assessed may be from monitoring not associated with the permitted MS4, it is the responsibility of the MS4 permittee to review and analyze the data to ensure it is providing information that is representative and will provide a sound basis for future decision-making, including requirements for monitoring and the implementation of controls that may apply to the permittee in the future. In addition, if data are provided that are not adequate in quality or do not include information to allow for analysis that meets the objectives of the regulation, future data collection may be required to meet the objectives of this regulation.

The Commission envisions requirements for the characterization of nitrogen and phosphorus in discharges from MS4s to be an iterative process. The “gap analysis” information, as well as information from assessment of the data and supporting information, will be evaluated by the Division and then the Commission to determine the need for and focus of future regulatory requirements. The Commission’s intent is for the information provided in accordance with this regulation to be used to understand the significance of MS4s as nutrient sources and to develop future regulatory requirements for monitoring, as necessary, to adequately characterize nitrogen and phosphorus contributions from MS4 discharges in Colorado. For this reason, the Commission strongly encourages MS4 permittees to be diligent in the identification of existing data that will maximize the ability for assessment to characterize nitrogen and phosphorus in the MS4s’ discharges. The extent to which the information provided identifies the need for further monitoring and data collection efforts to provide adequate information for future decision making will directly drive the scope and scale of monitoring requirements in future revisions to this regulation.

The Commission also strongly encourages, and has explicitly authorized in this regulation, that MS4 permittees collaborate in the development and documentation of the MS4 data collection information required by this regulation. The Commission intends for this flexibility to provide an opportunity to increase the efficiency and accuracy of the data while ensuring that the data are representative of the quality of the stormwater flowing from the MS4. Discussions with participating MS4 stakeholders indicate that a single, state-wide program will be the most cost-effective way to accomplish the goal of the monitoring requirement and is likely to result in the most comprehensive and useful information. Future nutrient permit conditions placed upon MS4s participating in collaborative efforts will be based upon the collaborative analysis and representative data. Permittees choosing not to participate in a collaborative effort can still provide a data analysis based on data collected from their MS4s. The Water Quality Control Division is committed to participating in the planning and development of the MS4 permittees’ data collection efforts. The extent to which the Division will have the ability to provide direct coordination with MS4 permittees on the development of Data Reports will likely be highly influenced by the extent that MS4 permittees collaborate with other MS4 permittees in development of collaborative reports.

XIV. Nonpoint Source Monitoring and Unpermitted Point Source Monitoring

The Commission encourages entities responsible for nonpoint sources and unregulated point sources of nutrients to monitor and assess surface water resource quality to determine the extent and magnitude of nutrient impacts. This monitoring will provide the other portion of the total nutrient loading data needed to help the Division and stakeholders quantify sources and begin to assess the relative source contributions on a regional and watershed scale. This data is equally important to the overall goal of this nutrient control regulation.

The Commission directed the Division to collaborate with these entities in developing and implementing a nutrients nonpoint source monitoring program to meet the requirements of this control regulation. The Division may provide technical expertise related to sampling and analysis plan development and overall logistics to develop and implement an appropriate monitoring program. The Division can also provide guidance on the coordination between point and nonpoint sources, the Colorado Agricultural Chemicals Program, and other relevant local, state, and federal monitoring efforts.

The Commission encourages responsible entities to identify potential funding sources and pursue options for monitoring in areas that do not have a current or future nutrient monitoring program. Collaborative efforts to identify and acquire the necessary funding may support regional or watershed-based monitoring and assessment activities. These efforts will provide essential information for use in future triennial reviews of the effectiveness of nonpoint source nutrient management planning and BMP implementation.

XV. Availability and Reporting of Data

Data collected pursuant to section 85.6 of this regulation shall be submitted to the Division by April 15 of 2014 and each year thereafter. The 2014 submittal shall include data from March 1, 2013 through September 30, 2013. Subsequent submittals shall cover data collected from the most recent October 1 through September 30 period.

It is the Commission's intention that the data collected under this control regulation will be publically available and in a form that is easily downloaded for evaluation. The Commission recognizes two specific alternatives that currently meet those submittal requirements. The first alternative is to submit the data directly to the Division in an agreed upon electronic data deliverable format. This format is used by the Division for submittal of water quality impairment assessment consideration. The second alternative is to submit the data to an alternative publically available data repository. An example of this is the Colorado Data Sharing Network. In addition, data collected pursuant to the control regulation must be designated as publically available. If data are to be submitted via the second alternative, the Division must be notified by April 15 of each year.

The water quality data submitted under section 85.6 will be assessed by the Division at each triennial review to evaluate the effectiveness of this ~~control~~ regulation in controlling nutrients discharged to surface waters management control. The Commission encourages data assessment by collaborative regional water quality monitoring efforts to be submitted. The level of assessment by the Division will be dependent upon future available resources necessary to complete the assessment. The Division will report their water quality assessment to the Commission at each triennial review informational hearing.

XVI. Relationship to Section 303(d) Listings Implementation

The Commission does not intend that the numerical nutrient values set forth in sections 31.17(2b), (3c) and (4d) will be used directly as a basis for identifying impaired waters to include on Colorado's Section 303(d) List. In the limited circumstances where these numeric values are used prior to 2022 as the basis for adopting site-specific numerical water quality standards, as described in sections 31.17(5e) and (6f), those adopted numerical standards would be used as the basis for listing decisions.

The Commission agrees with input suggesting that it is important to address how Colorado will implement the current narrative standards, as they may apply to nutrients, in making section 303(d) listing decisions. The Commission requests that the Division address this issue in development of the Section 303(d)

Listing Methodology for the 2014 listing cycle. The Commission intends that listing decisions based on the narrative standards would be based on a “weight of the evidence” approach. In the absence of applicable numerical water quality standards, it is appropriate to look at all relevant considerations in making a determination about attainment of uses and compliance with the narrative standards.

In the event that a water body is determined to be impaired due to nutrient enrichment, a related standard such as DO or pH is not attained, or an investigation of an aquatic life use impairment shows that the cause is nutrient enrichment, the Commission envisions the following process would be followed:

1) Where the impairment is downstream of permitted discharges that are subject to controls in Regulation #85, it would receive a low priority for TMDL development until the Regulation #85 source controls are fully implemented, and the water body water quality reflects any resultant improvement.

2) If the water body remains impaired due to nutrients after implementation of Regulation #85, the Division will develop a TMDL that will determine what site-specific numeric nutrient values are appropriate to protect the applicable uses. The Division will propose to use those values as site-specific standards for the water body.

3) Where the Commission has adopted site-specific numeric standards, water-quality based effluent limits will be developed for the dischargers that have a reasonable potential to cause or contribute to an exceedance of those standards. (Compliance schedules and discharger-specific variances will be available according to the policies governing each.)

4) Where the impairment is upstream of permitted discharges that are subject to controls in Regulation #85, TMDL development will be designated a higher priority for the water body.

XVII. Relationship to Implementation of Narrative Water Quality Standards

The Commission has determined that the requirements of this regulation, including the numerical effluent limitations for process wastewater dischargers, constitute a reasonable and appropriate first step in the implementation of Colorado’s narrative standards as they relate to nutrients. In accordance with section 25-8-205(c), C.R.S., the provisions of this control regulation establish appropriate precautionary measures to avoid or minimize the risk of violation of Colorado’s narrative water quality standards as they relate to nutrients. As discussed elsewhere in this statement of basis and purpose, the Commission has determined that the nutrient controls resulting from implementation of this control regulation provide the most expeditious approach to achieving progress in nutrient pollution management in Colorado. During subsequent triennial reviews of this regulation, the Commission will determine whether additional steps are needed, in terms of point source discharge permit requirements or other measures, to attain and maintain compliance with narrative water quality standards relative to nutrients. Therefore, the Commission does not intend that the interim numerical values for nutrients being adopted in this rulemaking in Regulation #31 would be used as the basis for implementing Colorado’s narrative water quality standards set forth in section 31.11 in discharge permits. Therefore, compliance with Regulation #85 will be deemed to be compliance with the narrative standards unless and until the Commission adopts subsequent revisions to Regulation #85 and/or Regulation #31.