

# STATE OF COLORADO

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Colorado Department  
of Public Health  
and Environment

**Annual Report to the  
Colorado Legislature and  
Water Quality Control Commission  
Fiscal Year 2009-2010**

Submitted to the Colorado Legislature and Water Quality Control Commission  
by the Water Quality Control Division  
Colorado Department of Public Health and Environment  
October 2010

## **FOREWORD**

I am pleased to submit the Water Quality Control Division's (Division's) Annual Report to the Water Quality Control Commission (Commission) for the period from July 1, 2009 through June 30, 2010 (FY 2010). Pursuant to CRS Section 25-8-305, the Division is to file with the Commission, on an annual basis, a report on the effectiveness of its efforts under the state Water Quality Control Act. In particular, the Division is to:

Include in such report such recommendations as it may have with respect to any regulatory or legislative changes that may be needed or desired. Such report shall include the then current information that has been obtained pursuant to Section 25-8-303 [monitoring] and information concerning the status of the Division's implementation of the discharge permit program established in part 5 of this article.

Further, in accordance with the requirements of section 25-8-305 of the Colorado Water Quality Control Act, this report is also filed with the House Agriculture, Livestock, and Natural Resources Committee and the Senate Agriculture, Natural Resources and Energy Committee.

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October 2010

## TABLE OF CONTENTS

|             |  |    |
|-------------|--|----|
| <b>I.</b>   | <b>INTRODUCTION</b> .....                                      | 1  |
| <b>II.</b>  | <b>NECESSARY LEGISLATIVE OR REGULATORY CHANGES</b> .....       | 1  |
|             | A. Legislative Changes .....                                   | 1  |
|             | B. Regulatory Changes .....                                    | 2  |
| <b>III.</b> | <b>MONITORING ACTIVITIES</b> .....                             | 2  |
|             | A. Routine Sampling.....                                       | 2  |
|             | B. Special Studies .....                                       | 3  |
|             | C. Lake and Reservoir Monitoring .....                         | 4  |
|             | D. Aquatic Life and Habitat Studies .....                      | 5  |
|             | E. Nonpoint Source Monitoring Requirements .....               | 5  |
|             | F. Cooperative Monitoring Activities .....                     | 6  |
|             | G. Augmented Monitoring Funds .....                            | 7  |
| <b>IV.</b>  | <b>PERMIT PROGRAM</b> .....                                    | 7  |
|             | A. Permit Backlog Issues .....                                 | 7  |
|             | B. Permits Required for Application of Pesticides .....        | 10 |
|             | C. EPA’s Clean Water Action Plan .....                         | 10 |
|             | D. Addressing Single Event Violations .....                    | 11 |
|             | E. Environmental Agricultural Program.....                     | 12 |
|             | F. Water Quality Information Systems Improvement Projects..... | 13 |
| <b>V.</b>   | <b>WASTEWATER INFRASTRUCTURE FINANCING PROGRAMS</b> .....      | 14 |
|             | A. Water Quality Improvement Fund .....                        | 14 |
|             | B. American Recovery and Reinvestment Act .....                | 17 |
| <b>VI.</b>  | <b>CONCLUSION</b> .....  | 18 |
|             | APPENDIX A .....   | 19 |
|             | Water Quality Forum Work Groups Status                         |    |

## **I. INTRODUCTION**

The Mission of the Water Quality Control Division (Division) is to protect and restore water quality for public health and the environment in Colorado. The Vision of the Division is to be a top performing organization that implements its programs in such a way that Colorado's drinking water and natural waters are of the highest attainable quality. The Division will achieve its Mission by pursuing the following Clean Water program goals:

- Protect all designated uses by fully attaining water quality standards through improved implementation of the federal Clean Water Act and Colorado Water Quality Control Act and their associated regulations;
- Restore impaired water quality to attainable standards through improved implementation of the federal Clean Water Act and Colorado Water Quality Control Act and their associated regulations; and
- Assist with Colorado's economic recovery by providing increased funding to water infrastructure and non-point source projects through implementation of applicable portions of the American Recovery and Reinvestment Act and associated regulations;

This information should be used as the backdrop for reviewing the effectiveness of the Division's efforts under the state Water Quality Control Act.

## **II. NECESSARY LEGISLATIVE OR REGULATORY CHANGES**

### **A. Legislative Changes**

There was no significant water quality legislation passed during the 2010 session of the General Assembly.

Over the past several years, the Division has been challenged with both implementing new regulatory requirements and more stringent standards, coupled with continued growth in the size of the regulated community. The General Assembly provided the Division with additional state funded positions in 2006 and 2007 (12 Clean Water FTE; 10 Drinking Water FTE). Additional staff resources are necessary to fully implement all water quality programs. Since 2007, the state budget long bill requires that on November 1 of each year, the Division submit a report to the General Assembly with a projection of the additional Division staffing needs for the next three year period in order to fulfill all of its regulatory obligations. Last year's report, referred to in the long bill as Footnote 53, projected a need of 71.3 additional FTE for the Division. This is an increase of almost 18 FTE from the 2008 report. All of this increase from last year's report is attributable to increased needs in the Clean Water Program. These needs include the implementation of the NPDES program for pesticide application, plus implementation of sublethal or chronic whole effluent toxicity (WET) limits into permits.

## B. Regulatory Changes

With reference to regulatory changes that may be needed or desired, the Commission is fully aware of the on-going efforts of the Division to address a variety of issues through collaborative work group processes, including those formed under the auspices of the Water Quality Forum. The stakeholder community is advancing many work group proposals. A recent status report on work group efforts is attached as Appendix A.

The Commission held several rulemaking hearings in FY 2010. Those regulations discussed were as follows:

1. July 2009 – Adoption of revisions to the Site Location and Design Approval Regulations for Domestic Wastewater Treatment Works (Regulation # 22).
2. August 2009 – Revisions to the Colorado Discharge Permit System Regulations (Regulation # 61) and the Animal Feeding Operations Control Regulation (Regulation # 81) to implement new fee provisions.
3. October 2009 – Extension of the effective dates of the standards for nonylphenol and dioxane 1, 4 in the Basic Standards for Surface Water (Regulation # 31) and Ground Water (Regulation #41).
4. December 2009 – Annual Temporary Modifications hearing for temporary modifications that were set to expire on or before December 31, 2011 (Regulations # 32 through 38).
5. February 2010 – Revision to an ammonia temporary modification for Ritter Draw in the San Juan Basin (Regulation # 34).
6. April 2010 – Revisions to Water Quality Standards for Segment 16g in the upper South Platte River (Regulation # 38).
7. June 2010 – Revisions to the Basic Standards (Regulation # 31).

## III. MONITORING ACTIVITIES

The Division's surface water monitoring activities for FY 2010 were grouped into four general types: (1) routine sampling; (2) special studies; (3) lake and reservoir monitoring; and (4) aquatic life and habitat studies.

### A. Routine Sampling

The Division uses a rotating basin approach for primary stream monitoring. The entire state is sampled on a five-year cycle that matches the Commission's schedule for triennial reviews of basin standards and classifications. For the purposes of conducting the triennial reviews, the state has been divided into four major river basins. Each of the four major river basins is sampled intensively once every five years. This allows the Division to concentrate its limited resources in one basin in order to provide data for the triennial review scheduled for that basin, and for other data objectives such as impairment determination and source control investment targeting and evaluation. In every fifth year of the cycle, Regulation No. 31 (Basic Standards and Methodologies for Surface Water) is reviewed by the Commission and there is no need to intensively sample one of the

major basins. Sampling is more evenly allocated among the long-term trend sites in the four basins, special studies are conducted, and specific data gaps may be filled.

The number of sites and the number of times a specific site is sampled each year is controlled by the Division's fixed monitoring budget for laboratory analyses, which in FY 2010 was \$477,909. The samples collected are analyzed by the Department's Laboratory Services Division. Depending upon the amount of data sought for a particular site and the accessibility of the site, sites were visited on a regular schedule, such as monthly, bimonthly or when weather and road conditions allow access. In State FY2010, the specific river basin focus was the San Juan and Gunnison River basins, and routine water chemistry samples were collected from a network of 299 sampling sites located across the state. The Division concentrated 13.7 percent of the sampling in the South Platte River Basin, 12.7 percent located to the Colorado River Basin, 9.4 percent located Arkansas and Rio Grande Basins, and 64.2 percent located in the San Juan and Gunnison River Basins. This sampling resulted in the collection of 1136 sample sets. Samples were analyzed for a suite of constituents including metals, inorganics, nutrients and *E. coli*. Field parameters such as dissolved oxygen, pH, conductance, and temperature were also collected.

Sampling needs of other parts of the Division as well as citizen and performance partner demands for water quality sampling services exceed the fiscal and staff resources currently available to the Division. Increasing analytical costs and a relatively fixed monitoring budget have caused fewer water body locations to be sampled on annual basis in past years, which results in less information for future water quality management decisions. The small increases in sampling sites are currently supported by additional funding from EPA and may not be permanent.

#### B. Special Studies

Special studies monitoring includes synoptic sampling events for total maximum daily load determinations, fish tissue sampling, and other water quality investigations. Synoptic sampling continued on selected tributaries to the lower Arkansas River below John Martin Reservoir in June 2009. This sampling is intended to characterize selenium and uranium contributions associated with smaller tributaries that, for the most part, have not previously been sampled. Selenium and uranium sampling was also initiated in-lake, and at inflow and outflow points, for five reservoirs within the basin which are impaired for selenium. These include Lake Meredith, Lake Henry, Adobe Creek Reservoir, John Martin Reservoir and Nee Gronda Reservoir.

Several synoptic sampling events were also completed on Boggs Creek (selenium, uranium and zinc), the Rio Grande River in the vicinity of Del Norte (copper), Illinois Gulch (cadmium) and Wildhorse Creek (*E. coli*).

Substrate and biological sampling was performed on Trout Creek. Several other waters that appear on the Monitoring and Evaluation List for sediment were also assessed. These included Trail Creek, Fourmile Creek, Spring Creek, Pine Creek and Sugar Creek.

Fish tissue sampling to detect the presence of mercury was completed at 2 reservoirs across the state from July 1, 2009 through June 30, 2010. Of these 2 water bodies, none exceeded the action level for mercury and therefore were not candidates for issuance of fish consumption advisories. As of July 1, 2010, there are 24 fish consumption advisories for lakes and reservoirs in Colorado.

Arsenic and selenium were also analyzed in fish tissues from these reservoirs. The Division is currently working with the Department's Disease Control and Environmental Epidemiology Division to determine a risk assessment approach for both of these parameters.

A focused study by Colorado State University researchers began in 2010 on three mercury impaired reservoirs on Colorado's 303(d) list (Brush Hollow, Carter, and Horsetooth reservoirs) and one unlisted reservoir, Pueblo Reservoir. Extensive biological and water quality data have been collected in a collaborative effort funded by the Department and the Colorado Division of Wildlife. This project is to support TMDL development and evaluate ways to reduce mercury bioaccumulation through food web manipulation.

#### C. Lake and Reservoir Monitoring

The Division continued its lake and reservoir sampling in FY2010 and was focused on the San Juan/Gunnison basins in order to provide data for the upcoming triennial review. Ten lakes from the San Juan/Gunnison were sampled three times each through the growing season. An additional 8 lakes from the Arkansas/Rio Grande basins were sampled one time each to help determine which lakes would be the focus of sampling for the following year (FY2011). Lakes from other basins were also sampled for a variety of special lake studies. At each lake, depth profiles of dissolved oxygen, pH, conductivity, and temperature were collected at one-meter intervals. Water quality samples were taken from near the surface and near the bottom. Samples were analyzed for a suite of chemical parameters including nutrients, metals, and inorganics. In addition, the surface sample was analyzed for the chlorophyll a content as a measure of trophic status and for the phytoplankton population to determine the algal species composition.

In cooperation with the Division, EPA collected and analyzed lakes information from seven lakes in the South Platte and Arkansas River Basins to assist the Division in their nutrient criteria development efforts. EPA's sampling protocols were similar to Division protocols except that no bottom samples were collected.

In conjunction with the development of nutrient criteria, sampling was undertaken to study direct use water supply reservoirs and provide a statistical basis for establishing relationships between chlorophyll and disinfection byproducts (DBPs) production. Recent studies of disinfection byproduct formation potential in New York lakes provided the basis for proposing nutrient and chlorophyll criteria to protect drinking water. The Division is testing the applicability of the New York proposals to Colorado reservoirs.

#### D. Aquatic Life and Habitat Studies

Macroinvertebrate and habitat samples were collected at 44 sites across the state. At each of the habitat sites, water quality samples were taken and analyzed for a specific suite of constituents. These data, plus habitat scores, periphyton samples, and occasionally substrate measurements, will be used in the development of stream and river nutrient criteria and assessment of aquatic life use.

The aquatic life studies included targeted sampling of 303(d) and Monitoring and Evaluation (M&E) listed stream segments (Boulder Creek, St. Vrain Creek, and lower Clear Creek), and special studies of sediment impacted streams in the Deckers/Florissant areas (approximately 18 sites). The Division worked collaboratively with the Eagle River Water and Sanitation District by collecting macroinvertebrate samples from 16 sites around the Vail/Minturn/Avon area. The Division also provided the necessary sampling equipment for the Bear Creek Watershed Association to continue sampling macroinvertebrates at eight sentinel monitoring stations along Bear Creek, and sampling equipment to Routt National Forest staff to collect macroinvertebrates at 10 monitoring stations in the upper North Platte River basin.

#### E. Nonpoint Source Monitoring Requirements

Grant requirements under the Clean Water Act Section 319(h) prescribe measurable results be reported for nonpoint source projects that pertain to on-the-ground restoration and remediation. EPA defines measurable results as “restoring waters to partial or full uses and standards, or as a minimum, reducing pollutant loads such as nutrients and sediment.” To accomplish this, existing nonpoint source impacts need to be more accurately quantified in order to provide a water quality baseline from which to measure improvements. Surrogate measures, such as a record of the best management practices installed, can be used to evaluate the total project effort but do not provide data that equate to water quality improvements.

Few nonpoint source project sponsors have the expertise needed to prepare an adequate sampling and analysis plan that can be used to assess changes in water quality. As a result, the Division modified its approach to monitoring and evaluating nonpoint source projects. Starting with the 2004-2005 Nonpoint Source Section 319 project cycle, sponsors are required to provide more definitive water quality data to substantiate project outcomes during the terms of the project contract. This additional monitoring requirement was continued during FY 2010. Improvements such as a sampling and analysis plan template have been developed to assist project sponsors in complying with the increased emphasis on measurable water quality outcomes. Additional monitoring requirements have resulted in additional staff workload in order to assess the data collection methods and determine the effectiveness of nonpoint source management activities. Additional staff data evaluation capacity is needed to meet this increasing federal grant requirement.



A Measurable Results Project (MRP) was established via an external contractor in FY2010 to increase the Division's capacity regarding base-line and post-project monitoring of Nonpoint Source projects. The MRP is designed to assist the Division with collecting data to establish the effectiveness of a nonpoint source project both prior to implementation and following project completion. The MRP provides the ability to assess the on-the-ground restoration activities and the associated water quality improvements outside the project contract terms. The MRP was established to coincide with the annual Nonpoint source Section 319 project cycle, and therefore can be modified to fulfill project monitoring requirements based on future nonpoint source management activities.

Nonpoint source management activities are implemented by using a focused watershed-based approach. This approach was initiated by synchronizing nonpoint source monitoring needs with the five-year, basin-monitoring schedule used to collect water quality data in support of the triennial review of basin classifications and standards. For FY2010, the nonpoint source management activities focused on the South Platte River basin, and included several watershed planning efforts in the upper and lower segments of the basin.

#### F. Cooperative Monitoring Activities

To ensure that the maximum amount of relevant data are assessed each year, the Division issues a "call for data" to numerous cooperators, including federal and state entities, basin authorities, dischargers, and watershed groups, as well as River Watch and nonpoint source- management project sponsors. Through this mechanism, the Division accumulates a considerable amount of data beyond what it can directly sample and analyze.

As a charter member of the Colorado Water Quality Monitoring Council (Council), the Division has discussed cooperative monitoring efforts with other stakeholders. To facilitate data sharing, the Council has initiated a Data Sharing Network. The Data Sharing Network is a statewide, web-based, water quality database and interactive map. The water quality database and interactive map are housed on the Council's website ([www.coloradowaterquality.org](http://www.coloradowaterquality.org)). Version 1.0 of the new water quality data map utility powered by Google Earth technology is currently under development and will allow users to find and download data.

A Clean Water Act Section 319 grant from the Division provided the initial funding for the Data Sharing Network project and continues to provide support. Data Sharing Network products and services assist the project sponsors in developing and implementing watershed plans, demonstration projects and information and education efforts. In addition, data generated by NPS funding must be uploaded into the EPA WQX (STORET) database, and Data Sharing Network provides support to project sponsors to meet that requirement. Data Sharing Network is also supported with cash and in-kind services from other federal, state agencies and local governments, special districts, private and non-profit sectors. The Division is continually working on ways to build its

capacity to gather water quality data through partnerships with other agencies and citizen groups.

#### G. Augmented Monitoring Funds

In order to upgrade state monitoring efforts and encourage implementation of the Monitoring and Assessment Strategies for States, the EPA placed an additional \$17 million in the Clean Water Act Section 106 state grants in Federal FY 2007 to be used for monitoring purposes. Colorado received \$374,000 of these “Monitoring Initiative” funds for a two-year period to facilitate the implementation of EPA’s 10 Elements document and to conduct a state-wide Probabilistic Survey of water quality as part of a national project. The Division has earmarked these funds for conducting a human health risk assessment for bioaccumulated arsenic and selenium in fish tissue, additional monitoring of rivers and lakes, a USGS study of mercury methylation processes in lakes, additional monitoring equipment, increased data management capabilities, and ambient ground water monitoring. This program continues to fund Colorado’s effort to expand its monitoring and assessment capabilities.

### IV. PERMIT PROGRAM

#### A. Permit Backlog Issues

In the time since the Division originally received approval from EPA of the backlog reduction plan in May of 2000, EPA’s backlog reduction program has expanded to include individual process water and stormwater permits and general process water permits. The Performance Partnership Agreement between the Department and EPA for Federal FY 2009 (October 2008 – October 2009) included a goal that 82.5 percent of the permits included in EPA’s backlog reduction program would be current (17.5 percent backlogged). The Division’s best estimate of backlog as of October 1, 2008 was 84 percent current (16 percent backlogged), which met the 82.5 percent target. The PPA commitment for Federal FY 2010 (October 2009 – September 2010) is 80 percent current (20 percent backlogged), and the Division anticipates that by the end of September 2010 80.4 percent of permits will be current (19.6 percent backlogged).

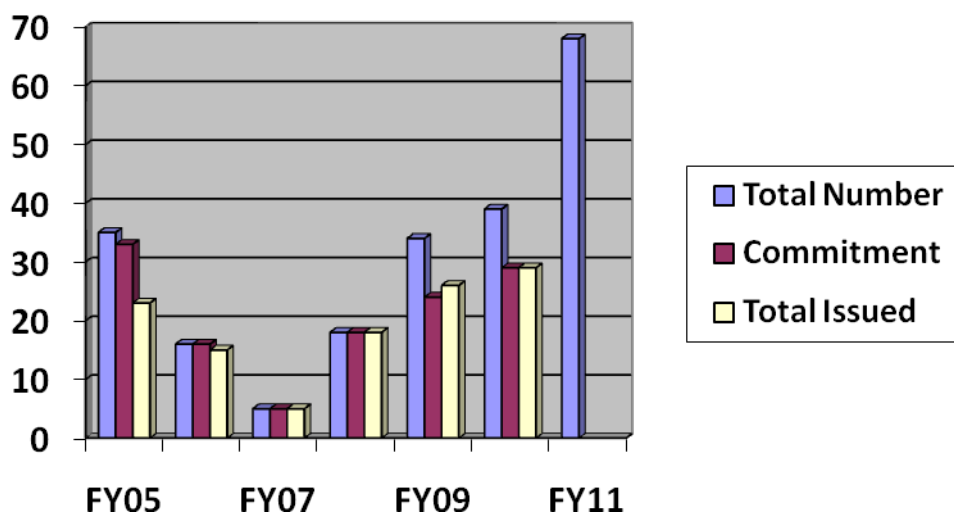
While the Division includes the same universe of permits in its backlog measure as EPA does, the Division reports backlog results based on “true” backlog, or permits that are not renewed prior to their expiration date and new permits that are not issued within 180 days. EPA includes an additional “180 day grace period” in reporting backlog results and they have stated in the past that this is done to allow time for data entry into ICIS. The Division reports on true backlog to provide a more accurate reflection of permit backlog and to report the measure in a way aligned with state statutory requirements and public understanding.

Approximately 1452 permits are included in the backlog measure. Of these approximately 370 are individual permits and approximately 1082 are general permit covered facilities. Looking at these areas independently, individual permits are expected

to be about 60 to 65 percent current (35 to 40 percent backlogged) at the end of September 2010. The backlog in individual permits has increased, and is expected to continue to increase until additional resources are obtained. In the past few years the universe of individual permits has increased due to new sources being constructed, but more significantly due to the increased complexity of permit actions which has resulted in discharges that were formerly covered under general permits being more appropriately covered under individual permits. Some of the drivers in this trend have been the pollutant potential of the sources, the need for comprehensive antidegradation reviews, and increased public involvement in the permitting process. The backlog in general permits fluctuates greatly since the number of facilities under a single general permit varies from 13 to 280. The Division estimates that approximately 85 percent of general permits will be current (15 percent backlogged) at the end of September 2010.

Another important element of EPA's backlog reduction efforts is priority permits. EPA considers any expired permit for which a renewal application has been submitted and which has been administratively extended for two years or more, or any application for a new permit that has not been acted upon for two years or more, to be a priority permit. As part of the Performance Partnership Agreement between the Department and EPA, the Division makes a priority permit issuance commitment. For federal FY 09, the Division committed to issuing 24 of 34 high priority permits and was able to issue 26 by September 30, 2009. For Federal FY 2010, the Division committed to issuance of 29 of 39 high priority permits and expects to meet that commitment. As indicated in the graph below, the number of high priority permits has increased substantially over the last few years, and is expected to increase to an even higher rate in federal FY11. This can be attributed to an expansion of the universe defined as a high priority permit, such as inclusion of permits that have a TMDL wasteload allocation to be implemented, a significant increase in backlog in individual permits, and the inability to issue 100% of all priority permits each year, which compounds the number. The Division agrees with EPA that these permits are a high priority, and would like to commit to issuance of 100% of these permits each year. However, because of resource limitations, the Division has been able to commit to issue only a fraction of the high priority permits the last couple of years. The Division expects this trend to continue until additional resources can be obtained.

## Priority Permits



The Colorado Discharge Permit System Regulations require any domestic sewage system that discharges to groundwater obtain a permit. This is a state-only permit program. The Division estimates that there are approximately 200 facilities that should be permitted, however many of these facilities do not have current permits. The Division has been implementing a process to ensure that these facilities do obtain the appropriate permits. This process is resource intensive because many facilities without appropriate permit coverage need to upgrade their level of treatment. To assist these facilities, the Division is working with them to upgrade their systems prior to issuing new permits. Progress has been slow due to the lack of adequate compliance assistance resources to spend working with these small businesses (e.g., campgrounds, lodges) and towns. In addition, the engineering work to review and approve the required facility treatment upgrades was not anticipated and will exceed the Division's capacity to complete reviews within a reasonable time. The Division continues to make incremental progress in that 38% of the 200 facilities have new permit coverage, up from 35 percent a year ago.

While the challenges that exist today are large, they are expected to grow in the coming years for several reasons. Many of the general permits will be due for renewal in 2011 and 2012. These renewals will be resource intensive due to the large number of discharges covered under the general permit, and the fact that increasingly complex regulatory requirements must be met. This will require more analysis by the Division and increased contact with permittees. The Division must also implement new water quality standards adopted by the Commission, which requires additional analysis to issue the permits. Engineering reviews are required for new wastewater treatment facilities needed to meet discharge limits based on the new standards and compliance assistance/assurance resources are needed to work with permittees, most of which are smaller municipalities. In addition, EPA is requiring the Division to implement additional permit requirements for whole effluent toxicity, a complicated and resource intensive work area for which

expertise that does not exist in the Division will be required. Finally, due to a court ruling requiring permits for pesticide application, the Division expects that regulated universe of permitted entities to increase by several hundred entities by mid-2011.

#### B. Permits Required for Application of Pesticides

A 2009 federal appeals court decision resulted in a requirement for entities applying pesticides in or near waterways to obtain discharge permit coverage for their discharges by the April 9, 2011 court-ordered deadline. EPA noticed a draft National Pollutant Discharge Elimination System (NPDES) general permit for comment by July 19, 2010. EPA plans to respond to comments received, make any appropriate changes to the permit, and issue a permit for the discharge of pesticides by December of 2010. Since the Division has exclusive authority to issue NPDES permits for non-federal activities in Colorado, the EPA permit will not apply here and the Division is required to issue a permit for the use of pesticides in the state.

The Division intends to issue a short-term (18 months to 2 years) general permit based on the final EPA permit. The permit will provide automatic authorization of pesticide applications statewide without the need to submit an application. Submittal of a post card to the Division identifying the entity and the location (county) where pesticides are intended to be applied may be required. This will allow the Department time to seek and obtain permitting and compliance assurance resources to issue permits that require more robust applicant information for larger applicators and to conduct a reasonable level of compliance assurance in the 2011 legislative session through a fee bill. The Division is working with the Department of Agriculture to coordinate activities since that department is responsible for licensing many of the larger applicators under the Federal Insecticide, Fungicide, and Rodenticide Act.

#### C. EPA's Clean Water Action Plan

In October of 2009 EPA issued a Clean Water Act Action Plan that lays out the strategic direction for permitting, compliance oversight, and enforcement at the federal and state levels. The Plan includes three basic tenants. First, EPA must hold the states accountable to meet the performance requirements for delegation of the federally delegated NPDES permit program. Second, the Plan requires improved transparency of the compliance status of permitted facilities so that the public can weigh in on how violations are being resolved. Third, the plan requires that EPA and the states target compliance oversight and enforcement resources to the most important water pollution problems.

This plan will require the Division, in cooperation with EPA Region 8, to revisit priorities for responding to reported violations and inspection discovered violations. EPA is also proceeding to adopt an electronic reporting rule that will require monitoring data, reports required as a condition of a permit, and, potentially, permit applications to be submitted electronically so that information can more easily flow into the federal database. The Division is already moving forward to implement a voluntary program for electronic

reporting of discharge monitoring data. Finally, the Division and Region 8 will decide on how the joint state-EPA resources will be deployed to best meet the priorities through a work-sharing agreement. A draft agreement will be developed by March of 2011 and final commitments will be included in the federal fiscal year 2011-2012 Performance Partnership Agreement between the Department and EPA

#### D. Addressing Single Event Violations

The Division has been unable to measure, track, and appropriately escalate most unresolved field-discovered single event violations (SEVs) because inspection results are not codified and reported to a central data repository. The Division is failing to meet a PPA commitment related to determining and reporting SEVs. Furthermore, the State will not be able to meet new EPA Significant Non-Compliance (SNC) determination and reporting requirements or manage towards measurable outcomes without the ability to manage field-discovered violations. The Division sought and received an EPA grant to fund the analysis and development of business processes in the work units that collect violation data in the field and through complaints and spills. The grant proposal summarized the proposal as follows:

*“The State proposes to develop and pilot electronic forms and an automated workflow management solution to transition field-collected compliance data from the local data repository to ICIS-NPDES for POTWs and wet weather dischargers. Successful management and reporting of field-based compliance data will inform the division’s long-term transition plan for ICIS-NPDES implementation, including compliance with reporting requirements in other EPA program policies, particularly focused on the wet weather sector.*

*“The project will include an in-depth analysis of the “NPDES Compliance Inspection Manual” along with an evaluation of the State’s inspection processes. Significant project components include: Validation of information needs and work flows (i.e., requirements development); development of ICIS-NPDES reports for inspection planning; creation of standard electronic forms for single event violation data collection; development of inspection and quality control reports; system testing; “train-the-trainer” inspector training; and pilot testing in the field in the wet weather sectors.*

The grant application summarized the project goal as follows:

*“This project will provide the State’s 34 NPDES inspectors, local health departments and contractors with a flexible tool that standardizes collection of field-discovered compliance data. It will also provide a mechanism and standard process for reporting single event violation data to ICIS-NPDES. With improved data quality, compliance and enforcement managers can have confidence that ICIS-NPDES data better represent the overall compliance status of each NPDES discharger. Compliance rates (an environmental outcome measure) across sectors will be readily reportable, and enforcement decisions can more easily focus on priority compliance issues across sectors.”*

More specifically, the project is proposed to achieve the following objectives:

1. Standard data collection methods are established for all work units collecting violation data in the field.
2. Work flows are automated in the Division's SharePoint (SPIGOT) tracking and work flow management system.
3. Decision points in the work flows reflect Division-adopted policies for resolving violations.
4. Violation data are transmitted to the EPA ICIS database
5. Reports are available from ICIS or SPIGOT to facilitate compliance activities.
6. Managers and staff are trained to implement the new processes and work flows; documentation is available for future training.

The Division has made significant progress on the project in FY 10 and plans to pilot the system in fiscal year 2011 and fully implement the system to capture, track, and appropriately resolve SEVs in fiscal year 2012.

#### E. Environmental Agricultural Program

The Environmental Agriculture Program is housed within the Environmental Health and Sustainability Division. The program administers the Department's regulatory, permitting, compliance assistance and compliance assurance activities for animal feeding, concentrated animal feeding (i.e., dairies, feedlots, poultry facilities) and housed commercial swine feeding operations. The goal of the Ag Program is to approach environmental issues using a sector-based approach taking into account the interaction and environmental impact of air, water and waste issues when making regulatory and policy decisions.

The program oversees 93 permitted swine farms that are covered by 11 individual permits, 66 large CAFOs such as dairies, feedlots and poultry facilities certified under Colorado's general CAFO permit, and 119 non-permitted CAFOs that are registered with the state. The program administers Water Quality Control Commission Regulation No. 61, the Colorado Discharge Permit System Regulations, Regulation No. 81, the Animal Feeding Operations Control Regulation and Regulation No. 66, the Financial Assurance Criteria Regulation for Colorado Housed Commercial Swine Feeding Operations. During FY 2010, the Environmental Agriculture Program completed 40 CAFO inspections and 15 follow-up inspections; completed a rulemaking on Regulation No. 61 and 66 that put into regulation the criteria the regulated community and the state will use to establish financial assurance instruments for regulated swine feeding operations; responded to 36 CAFO and smaller animal feeding operation complaints, and updated the

state CAFO inventory to more accurately reflect the current known universe of CAFOs in Colorado, i.e., 185.

In addition to administering the state's regulatory program for animal feeding operations, the program coordinates environmental issues impacting the agricultural sector such as nitrogen deposition concerns in Rocky Mountain National Park, and waste (i.e., manure) to energy permitting questions across the air, water and solid waste permitting programs within the Department.

Future goals of the Ag Program include: completing a rulemaking to incorporate changes to the federal CAFO rule into applicable state regulations; finalizing the review of HCSFO financial assurance plans and approve financial assurance instruments per Regulation No. 66; implementation of new Regulation No. 81 surface water protection requirements that go into effect in May 2011; and exploring innovative ways to address compliance issues such as CAFO record keeping deficiencies and ground water monitoring requirements for HCSFOs

#### F. Water Quality Information Systems Improvement Projects

Consistent with the Department's strategic plan and the goals of the National Environmental Information Exchange Network, the Division has undertaken a major modernization effort. Investment in database improvements have focused on replacing multiple legacy systems and providing an integrated system which includes the EPA-required modernized national NPDES database (ICIS), and investigating and preparing technical solutions to conduct business via the internet.

Phase 1 of the project included data conversion to the new ICIS system (completed in August of 2008); modernization of permit application forms and enforcement forms (completed in August 2008); deployment of an initial permit workflow and document tracking system (completed in August 2008); continuing upgrades to the permitting tracking system including stormwater permitting (in production spring 2009), and CAFO/HCSFO permit tracking. The planning and tracking of facility inspections and inspection follow-ups has also been completed (spring 2009). Deployment of a simplified, integrated billing system was completed in March of 2009 with all 2009 and 2010 billing being processed through the new system.

Phase 2 is intended to focus on issuing all permits out of the new system (currently only construction stormwater are issued directly), online permitting and electronic data collection using netDMR. In FY 2010 most of the focus for the Division's resources in this area was on the development of an integrated data management system for the Division's Drinking Water Program. The Division plans to implement a solution for capturing, tracking, and responding to Single Event Violations (SEVs) to implement the processes described previously.

Additionally, EPA requires that states maintain a local database for environmental information that has the ability to upload information into the EPA national database.



EPA has provided this database in the past, but will no longer provide this support to the states in the future. Colorado has acquired a new system to manage this data (EQUIS). In addition to meeting EPA needs, this system will provide much more capability to manage data internally, to have third parties submit information for WQCD use, and to make our information available to the public in a variety of forms. Testing of the EQUIS system is underway. The identification of all of system requirements has been completed; database design and initial testing are currently underway. Database development and deployment is an extremely resource intensive effort, and timely support of all of the Division's programs' information management needs continues to be a significant problem.

## **V. WASTEWATER INFRASTRUCTURE FINANCING PROGRAMS**

### **A. Water Quality Improvement Fund**

During the 2006 legislative session the Colorado General Assembly created and the Commission approved the Rules for the WQIF (CRS 25-8-608[1.5] and Regulation #55). The WQIF was created to provide grants to local communities/entities to improve water quality, health and safety. The source of revenue to the fund is penalties assessed on polluters who have committed water quality violations. In accordance with the statute and Rule 55, the WQIF "shall" be expended for the following purposes:

Category 1 - Improve the water quality in the community or water body impacted by the violation;

Category 2 - Fund storm water projects and assist with planning, design, construction, or repair of domestic wastewater treatment works; or

Category 3 - Provide the nonfederal match funding for nonpoint source projects.

In 2009 and 2010 the Division was unsuccessful at obtaining legislative support to increase the WQIF spending authority from \$117K to \$800K, add a .5 FTE to support the program and allow for the grants issued from the fund to be expended over multiple fiscal years. Currently there are no FTE allocated to the administration of this fund and all funds awarded during the grant cycle must be expended by June 30. Due to the limited spending authority (\$117,196 per year) and the compressed grant period, only 10 grants have been awarded since the inception of the program despite significant need in Colorado communities. Since the inception of the WQIF, \$1.9 million in penalties has been paid into the fund.

The following grants have been awarded to date:

| Entity  | Project Description  | Total Project Cost | WQIF Grant Award |
|---|--|--------------------|------------------|
| <b>2007</b>                                       |  |                    |                  |
| Pueblo City - County Health Department            | The project provided educational outreach to community members and stakeholders on best management practices to minimize the potential water quality impacts of leaking or failing septic systems and agricultural runoff.   | \$39,730           | \$28,885         |
| Palmer Lake Sanitation District                   | Wastewater collection line expansion to eliminate health hazards from failed septic systems. Failure to repair these systems would likely result in pollution of Monument Creek/Fountain Creek.  | \$325,000          | \$21,664         |
| Colorado Foundation for Agriculture               | This project encourages middle school students to become watershed defenders and protect Colorado's waters from runoff pollution. It provides them with information on sources of water pollution and encourages personal action to prevent non point source pollution.  | \$75,000           | \$21,655.        |
| <b>2008</b>                                       |  |                    |                  |
| City of Commerce City                             | Commerce City storm water staff coordinated with permitted industrial dischargers to develop a spatial database. This database will allow Commerce City staff to begin identifying pollutants within their jurisdiction. This will allow the City to focus water quality mitigation activities on specific pollutant issues and at specific storm water outfalls.  | \$38,000           | \$36,072         |
| Idalia Sanitation District                        | Construction of wastewater treatment plant improvements that will minimize the increasing levels of nitrates in the Ogallala groundwater. Without these improvements contamination of drinking water wells would have been likely.   | \$396,869          | \$27,054         |
| League of Women Voters of Colorado Education Fund | The project will print the "Understanding Water Quality Activities Book" which will be used in many elementary and middle school classrooms as the text book on water. This book will also complement many of the science kits being used in elementary schools. The objective of the book is to educate on pollution runoff and its prevention  | \$60,000           | \$30,335         |
| <b>2009</b>                                       |  |                    |                  |
| Department of Natural Resources                   | The goal of this project is to reduce the amount of pollution, in the form of excess sediments and chemicals, reaching the Arkansas River. The WQIF helped implement the public education component of this project by producing professional grade signs that will be posted along the river. The signs will inform the public about the pollution concerns and measures that have been taken to prevent the pollution from harming the water quality in the river. | \$796,500          | \$ 24,980        |
| Colorado Foundation for Agriculture               | This project will incorporate all the pollution prevention educational materials that have been produced over the years into the Colorado Content Standards. The educational materials have been partially paid for by CDPHE NPS funds and WQIF and have been incorporated in and enriched the science curricula of middle and high schools in Colorado.   | \$286,000          | \$8,421          |

| 2010                         |   |           |          |
|------------------------------|---|-----------|----------|
| City of Delta                | <p>This project is the first phase of a \$6.9 million project at the City of Delta's wastewater treatment facility that has a capacity of 2.45 million gallons per day. The overall project maintains primary clarification, adds a new parallel rotating biological contactor (RBC), provides a new secondary clarifier, and uses an innovative effluent river diffuser to meet water quality standards. The Phase 1 Effluent Diffuser project has an estimated capital cost of \$999,000 and additional phases will be pursued in the future to upgrade the remaining. As a result of the project the plant will meet revised discharge limits of E. Coli, total residual chlorine, total ammonia, dissolved copper and selenium limitations.</p> | \$999,000 | \$33,400 |
| Woodmen Hills Metro District | <p>This project addresses the Paint Brush Hills Wastewater Treatment Facility which is a complete-mix lagoon process utilizing three lagoons and is not currently able to consistently meet BOD removal requirements largely due to a lack of detention time. This project includes placing an existing out of service pond (#3) into service in order to extend detention time and provide greater BOD reduction. Components include placement of a synthetic liner, equipping the pond with surface aerators and associating piping and inlet/outlet appurtenances. As a result the project will help meet permit conditions.</p>   | \$400,000 | \$44,500 |

Only a limited number of grants have been awarded since inception of the program. Staff extended the WQIF application deadline in 2009 but did not receive applications for Category 1 or 2 type projects. Inquiries received about the grants indicated that they could not complete their proposed project(s) within the fiscal year.

The Division has only been able to consider small, limited scope projects for funding as a result of the limited spending authority. In addition, the WQIF Rules cap the amount available for each grant category:

Category 1 = 40% or \$46,878

Categories 2 and 3 = 30% or \$35,159

Consequently construction projects such as repairing failing septic systems or storm water infrastructure systems are often not feasible.

In 2009 the fund balance of \$700k was redirected to the state's general fund to assist with balancing the state's budget shortfall. On September 16, 2010 Governor Ritter issued an executive order making \$900k available to communities to help them protect drinking water supplies in the aftermath of the recent Fourmile Canyon and Reservoir Road wildfires. The money came for these emergency efforts came from the fund balance in the WQIF. These funds have been appropriated to the Fire Impacted Watershed Assistance Disaster Emergency Fund administered through the governor's office in coordination with the Division. Grant funds will be made available for repairing public water system infrastructure damaged or destroyed by wildfire, assisting public water systems experiencing operational difficulties due to runoff from storms in burned watersheds, and for watershed restoration and protection projects in burned areas. Boulder County, Larimer County, other local governments or state agencies and nonprofit organizations working on behalf of government entities are eligible for funding.

#### B. American Recovery and Reinvestment Act

The Division's Drinking Water State Revolving Loan Fund provided \$32,290,880 of American Recovery and Reinvestment Act (ARRA) funds to 22 public water systems. Projects receiving funding from ARRA were identified as the state's highest priority drinking water infrastructure projects. In addition, \$687,040 ARRA grants were provided to 21 public water systems for various activities including planning, design and CO-RADS pilot projects. All ARRA funds were required to be under contract by February 17, 2010; the Division had all ARRA dollars under contract by December 31, 2009, far exceeding the required deadline. As of August 2010 four ARRA drinking water construction projects have been completed, and 70% of ARRA funds have been expended. As of June 2010 84.4 jobs have been created with ARRA related drinking water infrastructure projects. All drinking water infrastructure construction projects are anticipated to be completed by February 2011.

Conditions of the ARRA grant required that states provide 50% of the funds in additional subsidy (e.g., lower interest rates, loan forgiveness, or grants) and 20% of the funds were required to be expended on "green" infrastructure. Over \$17.1 million for drinking water

infrastructure was awarded to Colorado communities in the form of principal forgiveness (e.g., grant). Funding in the amount of \$9.9 million was awarded to public water systems that implement green components as part of their drinking water infrastructure projects. A significant number of green projects involved the replacement of aging and failing drinking water distribution lines resulting in an annual savings of more than 45 million gallons of potable water. Colorado exceeded the 20% green infrastructure requirement by nearly 9%.

The Water Pollution Control State Revolving Fund provided over \$30 million in ARRA funds to 12 of the state's highest priority wastewater/water quality projects. All wastewater related ARRA dollars were under contract by September 30, 2009 far exceeding the required deadline. As of July 30, 2010 two of the 12 projects were completed and 59% of the ARRA funds have been disbursed. Over 75 jobs have been created as a result of wastewater infrastructure ARRA projects. More than \$15.6 million was awarded in form of principal forgiveness; the remaining funds were loaned out at interest rates of 0%-2%. Colorado awarded 25% of the ARRA funds to wastewater/water quality projects that implemented green components of the project. All wastewater projects are anticipated to be completed by December 2011

## **VI. CONCLUSION**

The Division continues to plan and implement improvements to its monitoring and permitting programs in the effort to maximize efficiencies and focus on those areas where there is the greatest potential for substantive water quality improvement. However, the Division has been experiencing a growing resource gap over the last several years as the workload has increased. Unless this resource gap is addressed soon and the Division is able to procure additional Clean Water program staff, the Division's ability to fulfill its obligations for monitoring and assessing state waters, provide compliance assistance to its regulated community, assure timely issuance of discharge permits, and conduct necessary facility inspections and compliance assurance will be severely jeopardized.

APPENDIX A

Water Quality Forum Work Groups Status  
Updated August 25, 2010

| Work Group                                | Chair/Coordinator/<br>WQCC Contact   | Next Meeting(s)   | Status   |
|---|--|---|--|
| 1. Nutrient Criteria                      | Chair: Paul Frohardt (3468)<br><br>Coordinator: Mary Fabisiak (303-658-2187)<br><br><b>Andrew Todd</b> | September 8, 2010<br>9:00 a.m.<br>CDPHE Sabin Room<br><br>October 13, 2010<br>November 9, 2010  | Nutrient criteria rulemaking delayed to June 2011. Several meetings are planned in 2010 to address a wide range of issues related to nutrient criteria development. <b>The September 8 meeting will address the WQCD perspective on treatment technologies, performance and cost, and will include a briefing from the Colorado Nutrient Coalition on an alternative proposal for nutrient criteria.</b>   |
| 2. Practical Quantitation Limits Guidance | Chair: Dave Akers (x3591)<br><br><i>Coordinator needed</i><br><br><b>Andrew Todd</b>                   | Full Group Meeting<br>TBD<br><br>Technical Subcomm.<br>TBD  | Guidance for organic chemicals finalized. <b>The technical subcommittee</b> delivered and is receiving responses to a <b>survey of laboratories to gather data on detection levels/methods for inorganic parameters and metals.</b> The survey also requested the above information for organic parameters so that PQLs for organic parameters can be reevaluated at the same time. <b>Work to evaluate the responses using the approach in the PQL Guidance will begin in the next few weeks.</b> |
| 3. Permit Issues Forum                    | Chair and Coordinator: Christine Johnston (303-294-2224)<br><br><b>Janell Barrilleaux</b>              | September 9, 2010<br>1:30 p.m.<br>Brown & Caldwell<br><br>October 25, 2010<br>November 15, 2010<br>December 7, 2010<br>January 19, 2011 | <b>The group will be discussing issues identified on a 2010/2011 work plan. The Division will participate in forum meetings every other month, in the even-numbered months.</b>  |
| 4. E. coli Issues                         | Co-chair and Coordinator: Jim McCarthy (720-898-7765)  | late October 2010<br>or November 2010   | Topics for 2010 are: rolling geometric mean for averaging period, reviewing Boulder's and Fountain Creek Studies, start to define, evaluate and what a watershed plan for an E. coli TMDL would look like. <b>The next meeting will be a presentation on TMDLs</b>   |

|  |  |  |  |
|--|--|--|--|
|  | Co-chair: Becky Anthony (x3339)<br><br><b>Chris Wiant</b>  |  | <b>and stormwater permits, and an update on the Boulder TMDL.</b>  |
| 5. Onsite Wastewater System Management | Chair: Dave Akers (x3591)<br><br>Coordinator: Barbara Dallemand (x2366)<br><br><b>Chris Wiant</b>  | Subcommittee Chairs Meeting September 27, 2010 – 10:30 a.m.<br>Full Work Group meeting October 7, 2010 – 10:30 a.m.<br>Daniel’s Fund Bldg.                                       | <b>The group discussed options for next steps and agreed that the six subcommittee papers to identify plain English descriptions of the proposal, costs, and other stakeholder participants will be finished by 9/17, distributed to the full group for comment, and reviewed by the chairs in support of a recommendation for change to the statute for full group consideration on October 7<sup>th</sup>..</b>  |
| 6. Section 303(d) Listing Methodology  | Chair: Aimee Konowal (x3530)<br><br>Coordinator: Amy Woodis (303-286-3240)                         | September 9, 2010<br>1:00 p.m.<br>CDPHE Room C1A<br><br>September 29, 2010<br>October 13, 2010<br>November 9, 2010<br>November 30, 2010<br>December 15, 2010<br>February 9, 2011 | <b>The 303(d) Listing Methodology reconvened on June 29<sup>th</sup>. Topics the workgroup will consider include: the assessment of temperature and <i>E.coli</i> data, the assessment of the water supply standards, determination of impairment due to excessive trash, assessment of mercury in fish tissue, lake assessments and the use of the bioassessment tools. A draft of the 2012 303(d) Listing Methodology will be the result of these meetings and will be available in January 2011.</b>                          |
| 7. Wastewater Design Criteria          | Chair: Jennifer Miller (x3507)<br><br>Coordinator: Connie O’Neill (970-962-2785)                   | September 15, 2010<br>2:00 p.m.<br>CDPHE Room C1A  | <b>This work group has been established to consider revisions to Policy 96-1. This policy will be proposed to shift from a WQCC to a Division policy with these revisions. Specific areas to be updated include both administrative and technical components of the policy. The Division is soliciting comments/issues from interested parties through September 3, 2010. The first of four work group meetings will focus on the comments received and the planned approach the Division will be taking for the revisions..</b> |
| 8. Water Reuse                         | Co-Chairs: Dave Akers (x3591)/Janet Kieler (x3599)<br><br>Coordinator: Jenny Fifita (303-658-2154) | September 9, 2010<br>10:00 a.m.<br>CDPHE Carson Rm.  | <b>This work group will address issues identified at a July 2010 triennial review hearing on Regulation #84. A December 2010 update to the Commission will discuss possible scheduling of a rulemaking hearing to consider revisions to this regulation.</b>   |

