Annual Report

to the Water Quality Control Commission
and Colorado Legislature

2018

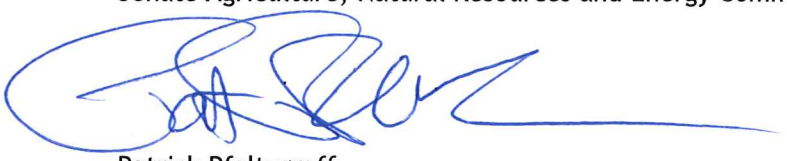
Submitted by the Water Quality Control Division
October 2018

FOREWORD

I am pleased to submit the Water Quality Control Division's Annual Report to the Water Quality Control Commission for the period of July 1, 2017 through June 30, 2018 (SFY2018). 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.



Patrick Pfaltzgraff
Director of the Water Quality Control Division
Colorado Department of Public Health and Environment
October 2018

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I. EXECUTIVE SUMMARY

The mission of the Water Quality Control 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 and drinking water program goals:

- Protect all designated uses by fully attaining water quality standards through improved implementation of the federal Clean Water Act, the Colorado Water Quality Control Act and its associated regulations.
- Restore impaired water quality to attainable standards through improved implementation of the federal Clean Water Act, the Colorado Water Quality Control Act and its associated regulations.
- Prevent waterborne disease and reduce chronic public health risks from drinking water through improved implementation of the federal Safe Drinking Water Act and Colorado's drinking water statutes and regulations.
- Deploy resources to achieve the greatest benefit for public health and the environment while pursuing a strategy of organizational improvement that includes increasing efficiency.

During the 2017 legislative session, the department was successful in funding the Clean Water Program through HB17-1285. This bill should provide secure funding for the program for the next five years. The bill established the funding mix between general fund and cash funds that each sector (established in 2015) should receive in the future. The bill established fee increases that took effect July 1, 2018.

The division's Safe Drinking Water Program is now experiencing a budget shortfall. Currently, the program receives 81 percent of its revenue from federal funds, 11 percent from the General Fund, and eight percent from cash funds paid by regulated public drinking water systems via an annual fee. General Fund appropriations have remained relatively flat and cash fees have not been raised since 2007. During the same period, salaries and operating expenses have continued to increase. This inverse relationship between program revenue and expenses is not sustainable in the long term. Department leadership implemented significant staff reductions in 2017 so the program could remain solvent for the next two state fiscal years (SFYs 2017-18 and 2018-19). In 2018, the program received an influx of additional federal funding and will be able to restore most of the services reduced in 2017. The division continues to monitor federal funding closely and is actively engaged with stakeholders regarding how to move forward with a legislative request to raise state funding levels in 2019 or 2020.

II. LEGISLATIVE AND REGULATORY UPDATE

A. Budget status

For many years, there has been a significant gap in the demands placed on the division and the resources available to address those demands. Since 2006, the division has been required to submit an annual report to the state legislature's Joint Budget Committee. The report summarizes the division's current and anticipated workload levels, including the impact of existing and proposed federal and state program requirements, as well as the associated funding and staffing needs based on those workload levels. In 2017, the legislature passed HB17-1285 which increased fees for the Clean Water Program. This fee increase was intended to stabilize funding for the program for a five-year period.

Federal funds provided to the division continue to be in jeopardy, but no funding reductions were implemented in federal fiscal year 2017-2018. If future federal funds are cut, the division will deploy

resources to meet the most pressing water quality problems/needs based on the division's priorities. Water quality issues not deemed to be priorities will likely not be addressed.

The drinking water budget shortfall and 2017 staff and service level reductions were referenced above. The situation has improved for at least one year (2018) based on increased federal funding. It is uncertain if that increase will be sustained. Without identifying a sustainable funding solution, additional staff and service level reductions will be required in the future. The division launched stakeholder discussions in late 2017 to build consensus on a path forward that all can support. That effort continues, and the division expects to move forward in either the 2019 or 2020 legislative session.

B. Legislative changes

During the 2018 session of the General Assembly, four bills passed that affect the division:

- HB18-1069 – Toilet and urinal flushing in multifamily residential and nonresidential structures; HB18-1093 – Food crop irrigation; and SB18-038 – Industrial hemp cultivation. These three bills essentially codified Regulation 84 and added each identified activity as an allowable use of reclaimed domestic wastewater, along with requirements for each use. These bills give the Water Quality Control Commission a deadline of December 31, 2019 to adopt the new uses and requirements.
- SB18-019 - Amended the Colorado Water Resources and Power Development Authority statute to give the authority the ability to issue loans for all borrowers through the Water Pollution Control Revolving Fund for a longer term. The bill removed the original loan term of 20 years and authorizes loans up to 30 years under the Water Pollution Control Revolving Fund.

C. Regulatory changes

With reference to regulatory changes that are required or desired, the Water Quality Control Commission is fully aware of the ongoing efforts of the division to address a variety of issues through collaborative work group processes, including those formed under the auspices of the Colorado Water Quality Forum. The current status of Colorado Water Quality Forum work groups can be found at www.colowqforum.org. The stakeholder community is advancing many work group proposals. A current list of new and ongoing work groups is provided in Appendix A. Division staff have substantially participated in these work groups through the current reporting period.

The division provided staff support to the commission for these rulemaking hearings in SFY2018:

August 2017 rulemaking – August 2017 adoption

Molybdenum temporary modification on Blue River Segment 14.

- Regulation 33 – Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (Planning Region 12) (5 CCR 1002-33).

October 2017 rulemaking – November 2017 adoption

Phase 2 of Colorado's Nutrients Management Program.

- Regulation 31 – Basic Standards and Methodologies for Surface Water (5 CCR 1002-31).
- Regulation 85 – Nutrients Management Control Regulation (5 CCR 1002-85).

November 2017 rulemaking – November 2017 adoption

- Regulation 55 – State Funded Water and Wastewater Infrastructure Programs (5 CCR 1002-55).

- Regulation 42 – Site-Specific Water Quality Classifications and Standards for Groundwater (5 CCR 1002-42) (correction of a legal description).

December 2017 rulemaking – December 2017 adoption

Non-substantive corrections.

- Regulation 32 – Classifications and Numeric Standards for Arkansas River Basin (5 CCR 1002-32).
- Regulation 36 – Classifications and Numeric Standards for Rio Grande Basin (5 CCR 1002-36).
- Regulation 38 – Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin (5 CCR 1002-38).

December 2017 rulemaking – January 2018 adoption

Temporary modifications.

- Regulation 32 - Classifications and Numeric Standards for Arkansas River Basin (5 CCR 1002-32).
- Regulation 33 – Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (Planning Region 12) (5 CCR 1002-33).
- Regulation 36 – Classifications and Numeric Standards for Rio Grande Basin (5 CCR 1002-36).
- Regulation 37 – Classifications and Numeric Standards for Lower Colorado River Basin (5 CCR 1002-37).
- Regulation 38 – Classifications and Numeric Standards for South Platte River Basin, Laramie River Basin, Republican River Basin, Smoky Hill River Basin (5 CCR 1002-38).

December 2017 rulemaking – January 2018 adoption

- Regulation 93 – Colorado's Section 303(d) List of Impaired Waters and Monitoring and Evaluation List (5 CCR 1002-93).

December 2017 rulemaking – cont. to January 2018 and November 2019 – March 12, 2018 partial adoption

Extension of molybdenum temporary modification.

- Regulation 33 – Classifications and Numeric Standards for Upper Colorado River Basin and North Platte River (Planning Region 12) (5 CCR 1002-33).
- Regulation 31– The Basic Standards and Methodologies for Surface Water.

March 2018 rulemaking – March 2018 adoption

Response to OLLS comments.

- Regulation 43 – On-Site Wastewater Treatment System (5 CCR 1002-43).

April 2018 rulemaking – May 2018 adoption

- Regulation 11 - Colorado Primary Drinking Water Regulations (5 CCR 1002-11).

April 2018 rulemaking – May 2018 adoption

Perfluorinated compounds – PFCs.

- Regulation 42 – Site-Specific Water Quality Classifications and Standards for Groundwater (5 CCR 1002-42).

June 2018 rulemaking – August 2018 adoption

- Regulation 32 - Classifications and Numeric Standards for Arkansas River Basin (5 CCR 1002-32).
- Regulation 36 – Classifications and Numeric Standards for Rio Grande Basin (5 CCR 1002-36).

D. New drinking water contaminant standards

According to CRS Section 25-1.5-202(3), the division is required annually to establish and revise a priority list of contaminants or substances for which new standards may be considered and shall submit the list to the commission for review and approval. This topic was discussed at the June 2011 Safe Drinking Water Program workshop with the commission. It was agreed that this requirement would be met by inclusion in the annual report.

As has been the case for at least the past eighteen years, the division is not considering development of new standards for any contaminants or substances independent of the process established in the Safe Drinking Water Act whereby the EPA develops and establishes national standards. Promulgating new standards in accordance with the statutory requirements would be a resource intensive process. The department does not have the resources either in number or type of personnel to undertake such activities at this time in a way that would meet all the statutory requirements. As noted in budget discussions, the program remains short staffed in terms of needed resources to implement the current Colorado Primary Drinking Water Regulations. It would not be appropriate to divert resources from current implementation activities, which increases public health risk to develop new standards without resources to implement them. The EPA is in the process of evaluating numerous contaminants including perfluorinated compounds for drinking water standards development.

E. Regulation 85 - Nutrients management control

Regulation 85 (Nutrients Management Control Regulation) became effective September 30, 2012. This 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 describes requirements for other point source dischargers and voluntary steps for nonpoint sources to address nutrients. The control regulation also establishes monitoring requirements for point source dischargers and a program aimed at monitoring 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 nutrient management.

Leading up to the October 2017 rulemaking hearing for Regulation 85, the division developed Policy 8 - 10-Year Water Quality Roadmap and Nutrient Management Plan. The division is currently leading a Water Quality Forum work group to implement this plan.

The monitoring requirements in Section 85.6 specify that nutrient data be submitted to the division by April 15 every year. To date, we have received data from over 350 facilities in 2014, 2015, 2016 and 2017. For the 2017 submittal, approximately 307 reports have been received. We are currently working on reviewing and uploading the 2016 and 2017 data to the national STORET database. Once the data are uploaded, we will work on establishing a baseline for nutrient concentrations across the state. Since 2014, the division has added total phosphorus and total nitrogen to its routine panel assessed at all monitoring sites in an effort to supplement the existing body of data on nutrient levels in Colorado. In addition, facilities with design capacities greater than one million gallons per day have been collecting both in-stream and effluent data. All of this data can be used to establish a baseline. The division plans to develop this information in 2018-2019.

In Colorado, seven industrial facilities operating under standard industrial code (SIC) 20 [for the manufacturing of food and kindred products] are subject to Regulation 85. One facility (MillerCoors) has Regulation 85 limits adopted in its permit. The division expects that the majority of the remaining facilities will have Regulation 85 implemented by the end of next year, if required, based on the tentative Permits Section work plan.

Sixty-two (62) domestic wastewater treatment works (DWWTW) discharge with a flow that exceeds 2 MGD. In total, 47 DWWTW are subject to Regulation 85. Of these, 12 are located in low priority watersheds, and implementation of Regulation 85 effluent limits are delayed until 2027 in accordance with 85.5(1)(a)(ii)(A). Implementation of Regulation 85 limits are delayed under 85.5(1)(a)(ii)(C) for an additional five facilities because they were already subject to nutrient controls under Regulations 71-74.

Of the 47 DWWTW currently subject to the Regulation 85 effluent limits, the division has implemented applicable requirements in 26 permits. Of those, four met the dilution exception under Regulation 85.5(3)(b)(i), so numeric effluent limit requirements in 85.5(1)(a)(iii) do not apply.

The nonpoint source program continued to expand its proactive partnership with the agricultural community during this reporting period to promote Regulation 85 voluntary nutrient controls, information and education campaigns about nutrients and monitoring of nutrients to better understand the sources and effectiveness of nutrient controls. The nonpoint source program did this in partnership with Colorado State University (CSU), Colorado Department of Agriculture and a number of local partners as summarized below.

CSU agriculture outreach committee

The division contracted with the CSU Extension to create an educational outreach program for agricultural nutrient Best Management Practice (BMP) implementation. Several videos featuring interviews with agricultural producers and scientists in the state and a fact sheet were developed by CSU. One video highlights the current voluntary aspects of the nonpoint source reduction strategy in Regulation 85. A second video, which includes mostly producers, features farm applied BMPs that control nutrients to promote clean and safe drinking water. In addition, CSU created BMP-specific videos to demonstrate the use of conservation practices. These efforts are intended to help expand implementation of BMPs.

The fact sheet entitled “Reducing Nutrients in Water: What’s in it for Colorado Ag Producers?” provides a quick reference for stakeholders about nonpoint sources of nutrients and Regulation 85 as it relates to agricultural nutrients entering surface waterways.

All of this information is available on an outreach website at https://coagnutrients.colostate.edu/colorado-regulation-85/. There has been increased use of this website and viewing of the videos.

Regulation 85 outreach project

In partnership with the Colorado Department of Agriculture, the division funded a contractor to provide Regulation 85 awareness through presentations and conversations with agricultural stakeholders around the state. The contractor provided several presentations to various groups in different state locations. These outreach efforts will continue for at least one more year through an agreement between the nonpoint source program and the Colorado Department of Agriculture.

CLEAN Center at CSU

The division continued work with the CLEAN Center to assess and model nutrient data collected across the state. The center developed the CLEAN Nutrient Dashboard, a publicly available internet-based system where nutrient loadings from various sources are estimated (www.erams.com). These sources can include wastewater treatment facilities, agriculture, stormwater and background. The model was tested for the Big Dry Creek watershed in collaboration with stakeholders, and the model continues to be expanded to include agricultural source information for each basin in the state (the model currently includes agricultural parcels and cropping patterns for the South Platte and Arkansas River basins). In addition, this model will be used to quantify nutrient reductions from implemented BMPs since the model incorporates a concept of edge of field monitoring. The CLEAN Center also provided outreach through webinars, presentations and stakeholder meetings.

South Platte Agriculture Nutrients Committee (SPAN)

This committee continues to meet following development of its catalog of agricultural BMPs in order to promote both ongoing discussions about water quality issues and implementation of BMPs (available at https://coagnutrients.colostate.edu).

Agricultural implementation projects

The nonpoint source program worked with its partners to implement BMPs for reducing nonpoint sources of nutrients. The program collaborated with the Colorado Department of Agriculture and several local partners to implement BMPs in an effort to reduce nutrient loads to receiving waters. In an initial project, local collaborators collected water quality data from 16 monitoring locations over 2,000 acres to support the evaluation of effectiveness of implemented BMPs. This information will not only be important for this specific project but will also help communicate opportunities for success to others interested in partnering to reduce nonpoint sources of nutrients and other parameters. Since this initial contract, the division has added two nutrient and selenium reduction projects in the Lower Arkansas and one nutrient and selenium reduction project in the Lower South Platte.

The nonpoint source program continued to collaborate with the Natural Resources Conservation Service (NRCS) to promote implementation of effective BMPs for reducing nonpoint sources of nutrients. The program continued its focused work to monitor the effectiveness of nutrient BMPs implemented in the Grape Creek watershed which is an NRCS National Water Quality Initiative (NWQI) watershed. The division also worked with NRCS to promote BMP implementation in the Fruitgrowers Watershed, the second NWQI watershed in the state. In addition, the program continued discussions with NRCS about executing a memorandum of understanding which would allow the nonpoint source program to obtain nutrient BMP data directly from NRCS while still protecting the producers' privacy.

Nonpoint source program communications

The nonpoint source program communicated the role of Regulation 85 to the program's stakeholders through its website (npscolorado.com), the program's day-to-day interactions with its partners and active participation in working groups, watershed conferences and other nonpoint source organized events. The nonpoint source program also developed a 10-year plan for implementing the nonpoint source provisions of Regulation 85. The plan is included in the Colorado Nutrient Management Plan and 10-Year Water Quality Roadmap at www.colorado.gov/cdphe/WQ-10-Year-Roadmap.

F. Water reuse

Consistent with Colorado's Water Plan, the division has been involved with a variety of activities related to graywater and reclaimed water regulations. The following is a summary of these efforts.

Regulation 86 - Graywater Control Regulation

The Water Quality Control Commission adopted Regulation 86 (Graywater Control Regulation) on May 11, 2015, with a follow-up write-in, comment only hearing for improved organization and readability on November 9, 2015. Since the regulation became effective, the City and County of Denver and Pitkin County have adopted local ordinances and developed local graywater control programs. While interest within these areas is growing, neither local graywater control program has issued any permits. On May 7, 2018, the Water Quality Control Commission held an informational hearing to obtain feedback regarding a proposed rulemaking scope to update the Graywater Control Regulation (Regulation 86). The Water Quality Control Commission agreed to a hearing scope that includes considering research opportunities and new uses, such as green roofs, remote fire suppression and toilet tank sinks. The division initiated a stakeholder process for Regulation 86 with a meeting on August 7, 2018. During this meeting, stakeholders requested that the

division consider irrigation of edible crops and establishing water quality targets in lieu of prescriptive treatment requirements. The division is in the process of developing a revised stakeholder work plan for feedback from interested stakeholders. The final scope and work plan is currently under development.

Regulation 84 - Reclaimed Water Control Regulation

The division received money from the Colorado Water Conservation Board and the Colorado Water Resources and Power Development Authority to fund both a temporary position and existing staff to support the division's participation as a stakeholder to review additional uses for Regulation 84. A three-year, term-limited position was filled on April 10, 2017. Denver Water and the division made a joint proposal to the Water Quality Control Commission on August 6, 2018, for indoor toilet and urinal flushing. While part of the original stakeholder process, irrigation of edible crops and marijuana were removed from Denver Water's proposal prior to the rulemaking proceeding. The Water Quality Control Commission approved adoption of the joint proposal.

Direct Potable Reuse

The division remains engaged with Water Reuse Colorado regarding the possibility of developing a regulatory framework (policy, regulations and guidance) to support direct potable reuse. Obtaining resources to develop and implement such a framework remains an obstacle, but the efforts to date have been very helpful and would leave Colorado in a place to begin developing a framework in 2020 if resources become available. In 2018, the division participated with Water Reuse Colorado in a presentation to the commission and the legislature's Water Resources Review Committee.

Regulation 100 Requirements

The division managed the stakeholder process for the development of proposed revisions to Regulation 100 (Water and Wastewater Facility Operators Certification Requirements) to address graywater and reclaimed treatment systems including an update to the facility classification sections of Regulation 100 (including treatment, collection and distribution). The purpose of the update is to provide clarity to the facility classification process, better align the classifications with operator certification testing and update the facility classification sections to include currently accepted technologies.

The classification sections date from generally 20 years or more in the past and do not include many technologies that have been developed and used in facilities since that time. Currently, portions of the facility classification sections do not align with the testing criteria for the operator certification tests. Alignment of the operator certification testing and the facility classifications is important to ensure that the operator in responsible charge of a facility has the appropriate understanding to responsibly operate the system.

III. MONITORING ACTIVITIES

The division's surface water monitoring activities for SFY2018 were grouped into eight general types: (A) routine sampling, (B) and (C) special studies, (D) lake and reservoir monitoring, (E) aquatic life and habitat studies, (F) nonpoint source monitoring requirements, (G) cooperative monitoring activities and (H) augmented monitoring funds.

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 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 on one basin 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. Sampling is more evenly allocated among the long-term trend sites in the four basins, where special studies are conducted and where specific data gaps may be filled. In every fifth year of the cycle, Regulation 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.

The number of sites and the number of times a specific site is sampled each year is controlled by the division's monitoring budget for laboratory analyses, which in SFY2018 was $461,907. The samples collected are analyzed by the department's Laboratory Services Division. Depending upon the amount of data sought for a particular site and its accessibility, sites are visited on a regular schedule, such as monthly or bimonthly, or when weather and road conditions allow access. In SFY2018, the specific river basin focus targeted the South Platte River Basin.

Routine water chemistry samples were collected from a network of 290 sampling sites located across the state. Of the 290 total sites, 29 sites are classified as trend sites, sites to be maintained annually and independent of the sites selected for the focus basin in a particular fiscal year. The trend sites are distributed as follows: seven within the South Platte River Basin, ten within the Colorado River Basin, six within the Arkansas/Rio Grande River basins, and six within the San Juan/Gunnison River basins. Of the total number of sites, 59 percent were within the Platte River basin, 24 percent within the Colorado River Basin, 13 percent within the Arkansas/Rio Grande River basins and four percent within the San Juan/Gunnison River basins. This sampling resulted in the collection of 1,136 sample sets. Samples were analyzed for a suite of constituents including metals, inorganics and nutrients. Field parameters such as dissolved oxygen, pH, specific conductance, turbidity and temperature were also collected.

B. Special studies - Legacy mining

The division concluded monitoring elements specified by the Upper Animas River Long-Term Monitoring Plan that was developed in March 2016 in response to the Gold King Mine spill. The division collected 24 water quality samples and 20 sediment samples in the Animas River, Cement Creek and Mineral Creek under that plan in SFY2018. In addition, the division has a trend monitoring station on the upper Animas River near Silverton below Mineral Creek that it sampled every other month during the same 12-month period.

In addition to the monitoring efforts described above, the division secured additional grant funding in SFY2018 from the EPA through the Water Infrastructure Improvements for the Nation (WIIN) Act. This funding will be used to extend real-time or instantaneous field measurement monitoring at five U.S. Geological Survey gages until August 2020, add 40 more residential drinking water well samples, and create a Communication Liaison position stationed in the Town of Silverton that will serve as a point of contact between EPA personnel attending to the Bonita Peaks Mining District Superfund area and downstream users/stakeholders.

It is anticipated that the division's involvement in long-term monitoring activities will diminish as an EPA contractor will begin quarterly monitoring of water quality, sediment, fish, benthic macroinvertebrates and physical habitat that began in September 2018.

In SFY2018, the division continued to lead the Mine Impacted Stream Task Force. The task force is made up of staff from the division, the Department of Natural Resources / Division of Reclamation Mining and Safety and the department's Hazardous Materials Waste Management Division. The goals of this taskforce are to determine the extent and magnitude of water quality impacts due to abandoned mines and to derive water quality improvements from abandoned mine pollution control projects. In SFY2018 two initiatives continued.

1. Colorado Abandoned Mines Water Quality Study: Data collected from 145 abandoned mine sites in 2016 were made publicly available through an interactive web-based map and summary report. Data collected in this effort were assessed through the Colorado mixed ownership group, which includes the division, the Department of Natural Resources / Division of Reclamation Mining and Safety, the EPA, the U.S. Forest Service, the U.S. Fish and Wildlife Service and many other organizations. Based on the assessment, the mixed ownership group identified an initial set of more than 20 abandoned mines to include in a more comprehensive follow-up study which began in June 2018.

   Colorado Abandoned Mines Lands Information Hub: In 2016 and 2017, multiple agencies combined abandoned mine information into one publicly available location. Work continued on this data set to include water quality impacts assessments and abandoned mine restoration decision-making tools.

2. The division will continue to coordinate with the Department of Natural Resources / Division of Reclamation Mining and Safety to identify potential source control projects that will improve water quality in the Animas River Basin and also pursue appropriate funding sources. The division will also coordinate with local public health agencies, the department's Hazardous Materials and Waste Management Division, and EPA Region VIII staff regarding long-term water management activities that will address problems exemplified at the Gold King Mine.

C. Special studies - Miscellaneous

Special studies monitoring includes synoptic sampling events for total maximum daily load determinations, fish tissue sampling and other water quality investigations. Below are the results of these activities.

Eleven reservoir and river sites across the state were sampled for fish tissue from July 1, 2016 through June 30, 2017. No new fish consumption advisories were issued. As of July 1, 2018, there are 25 advisories for lakes and reservoirs in Colorado. The division maintains a strong working relationship with the Colorado Division of Parks and Wildlife aquatic biologists by providing rationales behind sampling sites priorities, supporting biologists' efforts in the field, and modifying sampling priorities based on feedback from the biologists.

The division also continued to monitor selenium levels of Colorado fish to prepare for adoption of revised selenium standards following the EPA's 2016 selenium criterion. For selenium, fish tissue concentrations are generally not a concern for human consumption. Instead, the criterion protects the fish themselves from toxic effects including mortality, decreased growth rates and reproductive effects such as increased rate of mortality and deformities in offspring. The EPA criterion consists of both fish tissue-based and water column-based elements. The division is working in collaboration with Colorado Parks and Wildlife and Colorado State University to better understand bioaccumulation, trophic transfer, and toxicity of selenium in naturally exposed fish. In addition to division special projects resources, the division was awarded substantial funding from the Colorado Water Resources and Power Development Authority to supplement this effort. Data collected may help answer questions about whether Colorado fish, which may be naturally exposed to relatively high levels of selenium due to geology, are as sensitive as the fish with which the criterion was developed. These data may also help answer questions regarding reproductive and hatching success of Colorado fish with relatively high selenium tissue levels. The division may continue to monitor fish tissue levels in waterbodies which have been previously listed for exceedances of water column standards.

Total Maximum Daily Load (TMDL) development to evaluate E. coli impairments in the urban corridor was prioritized by the Watershed Analysis and Implementation Support (WAIS) workgroup. While the WAIS workgroup routinely collects data in support of TMDL development, because E. coli data are highly variable, assessment methods require data to be collected at a high frequency which results in the need to develop TMDLs based on fine spatial- and temporal-scale data. These data needs could not be met with WAIS staff resources and the analytical budget allocated for TMDL development. The WAIS workgroup, therefore,

secured funding from the Colorado Water Resources and Power Development Authority and partnered with Colorado State University to conduct two seasons of E. coli and stream discharge monitoring at a frequency and spatial resolution to support development of TMDLs for segments of the Cache la Poudre River, Sand Creek and Clear Creek. The monitoring started during this reporting period.

D. Lake and reservoir monitoring

The division continued its lake and reservoir sampling in SFY2018. The division focused sampling efforts on the South Platte River Basin to provide data for the upcoming triennial review and for lakes on the monitoring and evaluation list ahead of the 2020 hearing for the 303(d) List of Impaired Waters. Eight lakes from the South Platte River Basin were sampled three times each during the growing season. Five lakes from the monitoring and evaluation list were sampled two times each to collect data for the 303(d) assessment. 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 chlorophyll a content as a measure of trophic status and for the phytoplankton population to determine algal species composition.

As part of an effort to expand the lake monitoring program in Colorado, the division continued its partnership with Colorado Parks and Wildlife (CPW). This lake sampling partnership began as a pilot program in the summer of 2013 and has continued into 2017 resulting in data collection at over 56 lakes and reservoirs. The partnership will continue using a rotating basin approach as long as funding is available. The field work will be completed by the CPW field staff while the analytical funds have been set aside from the Section 106 Monitoring Initiative grant. A limited suite of lake monitoring parameters were tested from each lake. Through this partnership, the state can increase the percentage of assessed acres in Colorado for the Integrated Report while CPW can continue investigating water quality at waterbodies susceptible to invasive species. The division does not plan to continue this partnership into SFY2019 but has agreed with CPW to re-evaluate this program prior to the SFY2020 sampling season. The division will summarize results from this work in the next Integrated Report.

E. Aquatic life and habitat studies

The division collected macroinvertebrate and habitat samples at multiple locations in the state. At each of the habitat sites, water quality samples were taken and analyzed for a specific suite of chemical constituents. These data plus habitat scores, periphyton samples and occasional substrate measurements will be used in the assessment of the aquatic life use and 303(d) or monitoring and evaluation (M&E) listing decisions.

The aquatic life studies included the following activities.

- Targeted sampling of various 303(d) listed stream segments including the main stem of the Big Thompson River and Little Thompson River, the Upper South Platte including some tributaries, the Cache la Poudre River and Boulder Creek.
- Sampling of an M&E listed stream segment in the Upper South Platte River.
- Characterizing the benthic macroinvertebrate communities at five trend sites across the South Platte River Basin and one trend site on the Animas River.
- Investigating Aquatic Life Use Policy Statement 10-1 high quality water declines in multimetric index scores.
- Collecting periphyton samples at existing reference sites where that algal assemblage was not previously collected.
- Investigating and visiting candidate reference sites in the South Platte River Basin.

- Gathering sediment data to investigate a potential new sediment region characterized by high elevation and flat terrain, such as South Park, to support continuing improvement of Sediment Guidance 98-1.

The division also collected water quality and macroinvertebrate data from sites near Creede, Colorado to support an ongoing TMDL study on Willow Creek. In addition, the division worked collaboratively with the U.S. Geological Survey, the U.S. Forest Service, the EPA and the Bear Creek Watershed Association to collect macroinvertebrate samples at monitoring stations of particular importance to these organizations.

F. Nonpoint source monitoring requirements

The division's nonpoint source program is required to report to the EPA measurable results from projects funded through its Clean Water Act Section 319 grant. For implementation projects, these results are measured through monitoring, and the program assists project sponsors with monitoring through its Measurable Results Program. The program is also encouraged as part of its Section 319 grant to collaborate with the Natural Resource Conservation Service (NRCS) on the National Water Quality Initiative for priority watersheds in Colorado. The program's role in the initiative is to monitor the effectiveness of conservation practices that the NRCS helps producers implement.

Nonpoint Source Program - Measurable Results Program

Through this effort, the nonpoint source program provides project sponsors with technical assistance for sampling and analysis plan development, pre- and post-contract water quality monitoring and data analysis, and access to sampling protocols that have been adopted by the division's Environmental Data Unit. Nonpoint source staff implement the program in partnership with the Environmental Data Unit for the collection of nonpoint source monitoring data. The following discussion highlights program accomplishments during this reporting period.

Kerber Creek and Willow Creek restoration projects

The nonpoint source program continued sample collection to evaluate long-term effectiveness of best management practices (BMPs) to address mine wastes/tailings in the Kerber and Willow Creek watersheds. The additional data will augment the near-term effectiveness evaluation.

Lower Arkansas River selenium and nutrient reduction project

Nonpoint source funds were used to support the implementation of BMPs to address selenium and nutrient runoff to the Lower Arkansas River. In collaboration with local partners, the nonpoint source program conducted pre-project monitoring to establish a baseline from which BMP effectiveness will be evaluated. Irrigation improvements are scheduled to be implemented over a number of years beginning in late 2018. Post-project samples will then be collected to assess the BMP impact on water quality.

National Water Quality Initiative

The nonpoint source program continued collecting water quality data in the Grape Creek/DeWeese Reservoir watershed, an initiative watershed. These data were gathered in collaboration with the NRCS and local producers to evaluate effectiveness of conservation practices implemented in the watershed to reduce nonpoint sources of nutrients. Data from 2014 - 2018 are being assessed to determine the impact that conservation practices are having on water quality. The nonpoint source program also collected data in the Fruitgrowers Reservoir watershed, a second initiative watershed, in order to understand existing conditions as the program continues to work with NRCS to promote BMP implementation in this area.

G. Cooperative monitoring, data management and data assessment activities

To ensure the maximum quantity 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, watershed groups, as well as River Watch, the Data Sharing Network 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.

H. Augmented monitoring funds

In order to upgrade state monitoring efforts and implementation of the monitoring and assessment strategies for states, Colorado applies for Clean Water Act Section 106 monitoring initiative grant money every year. Colorado received $160,000 of these monitoring initiative funds to facilitate the implementation of the EPA's 10 Elements document to conduct a statewide probabilistic survey of water quality as part of a national project. Additional monitoring projects were completed in SFY2018. The division has designated these funds for additional monitoring of rivers and lakes, sediment sampling, and periphyton/phytoplankton sampling for standard development and 303(d) determinations.

In SFY2018, four studies evaluated the water quality changes in receiving streams as a result of the implementation of Water Pollution Control Revolving Fund assisted infrastructure projects. These studies include continued work and characterization of improvements to the Town of Cedaredge Wastewater Treatment Facility, Town of Wray Wastewater Treatment Facility, Town of Nucla Wastewater Treatment Facility and City of Durango Wastewater Treatment Facility.

Additionally, in SFY2018, three studies evaluated water quality impacts and quantified pollution contributions from abandoned hardrock mines. Each of these studies exists in water quality limited waterbodies and are done in coordination with the Department of Natural Resources / Division of Reclamation, Mining and Safety. This agency contributes significantly through sampling, report generation and restoration expertise. Projects include the Upper Uncompahgre drainage near Ouray, Henson Creek near Lake City and the East Mancos River near Durango. Each of these assessments is at a different point of completion.

IV. PERMITS PROGRAM

A. Permitting

Program areas

Process wastewater discharges to surface water

Traditional sources were the first to be permitted following promulgation of the Clean Water Act in 1972, and these are referred to as process wastewater discharges. This includes discharges from domestic sewage systems, or domestic wastewater treatment facilities, and discharges from a variety of industrial sources such as manufacturing, food processing, natural resource extraction, transportation, electric services and construction.

As of June 30, 2018, approximately 1,401 permits authorizing these types of discharges are in effect, about 381 of which are individual permits and about 1,020 of which are authorizations under 15 general permits. These comprise the majority of the permits included in the permit backlog and high priority permit performance measures discussed later.

Municipal separate storm sewer systems (MS4)

Operators of MS4s in urban areas are required to obtain permit coverage for discharges from their MS4s to waters of the state. Operators of MS4s include Colorado cities and counties (referred to as "standard" MS4s) as well as other governmental organizations such as the Department of Transportation, special districts, and school districts (referred to as "non-standard" MS4s). The permits require the implementation of control measures to prevent or reduce the discharge of pollutants to waters of the state.

Discharges from five of the largest MS4s in the state are authorized under individual permits. As of June 30, 2018 discharges from approximately 59 MS4s operated by cities and counties (standard MS4s) are authorized under two general permits, and discharges from approximately 61 MS4s operated by other governmental organizations (non-standard MS4s) are authorized under a third general permit.

Industrial and mining stormwater

Operators of industrial and mining facilities in certain categories are required to obtain permit coverage for discharges of stormwater from their facilities or else certify that their industrial activities are not exposed to precipitation.

As of June 30, 2018 discharges from two facilities are authorized under individual permits, and discharges from approximately 1,394 facilities are authorized under general permits. Another 386 facilities have certified that their industrial activities are not exposed to precipitation.

Construction stormwater

Site operators engaged in clearing, grading and excavating activities that disturb one acre or more, including smaller sites as part of a larger common plan of development, must obtain permit coverage for their stormwater discharge. The division authorizes all construction stormwater discharges in the state under one general permit.

As of June 30, 2018, the division currently has about 4,708 authorizations. The number of authorizations under this general permit varies significantly year to year and seasonally, but this number has shown an upward trend over the last several years that correlates with an increasing trend in the number of active construction projects. The division will also renew the general permit on September 30, 2018 with a delayed effective date of March 1, 2019. The effective date is delayed to allow enough time to reissue all active certifications and to allow the division to process new applications through the Colorado Environmental Online Services (CEOS) platform.

Pesticides

A 2009 federal appeals court decision resulted in a requirement for entities applying pesticides in or near waterways to obtain discharge permit coverage by an October 31, 2011, court ordered deadline. In November 2011, the division issued a short-term (two-year) general permit based on the final EPA permit. This allowed the department time to seek permitting and compliance oversight resources to issue permits and conduct a reasonable level of compliance oversight. Those resources were secured in the 2013 legislative session, and the permit was extended later that year. The division renewed the permit in 2014 for a five-year term. Currently 75 entities have coverage under the pesticide general permit.

Groundwater

The division issues permits authorizing discharges to groundwater from domestic sewage systems with a design capacity greater than 2,000 gallons per day. Discharges from smaller systems are subject to county authority. 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. Division staff in the enforcement, engineering, field services, and permitting sections have developed a new process to identify these facilities and ensure that owners of these facilities 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 operators, the division works with them to upgrade their systems prior to issuing new permits or includes compliance schedules in permits that outline the steps facilities need to take to comply with effluent limits. The division continues to make incremental progress in permitting these discharges. There are 135 groundwater permits, most of which are administratively continued. The division recently reissued two key groundwater general permits and expects the percentage of administratively continued groundwater permits to decrease dramatically over the next calendar year.

Biosolids

The division implements a state biosolids program consistent with the direction provided in Regulation 64. The regulation provides authority to the division for implementation independent of, and more stringent than, the federal biosolids requirements for land application. Both the federal and the Colorado regulations governing beneficial use of biosolids identify allowable levels of heavy metals and pathogens in the biosolids and set restrictions and management requirements. The regulations require that application rates be based upon the nutrient requirements of the crops under cultivation. In 2017, approximately 87 percent of biosolids generated by municipal wastewater treatment facilities in Colorado were beneficially reused and subject to regulation under the program. Because Colorado has not been formally delegated authority to implement the federal biosolids program, the EPA retains ultimate authority over the federal program.

Pretreatment

The division implements a state pretreatment program consistent with the direction provided in Regulation 63. The division's administration of the program focuses on issuing permits or control mechanisms to significant industrial user facilities that discharge to domestic sewage systems without a federally approved local pretreatment program. The regulation provides authority to the division for implementation of requirements equivalent to and more stringent than the federal program.

The division currently has two state-authorized pretreatment programs and ten permits or control mechanisms for industrial user facilities. This tool is a strong complement to the federal pretreatment framework. Because Colorado has not been formally delegated authority to implement the federal pretreatment program, the EPA retains ultimate authority over the federal program.

Reclaimed water

The division implements a state reclaimed water program consistent with the direction provided in Regulation 84. There is not a corresponding federal regulation that addresses uses of reclaimed water. Regulation 84 requires permitting by the entity that treats and distributes the reclaimed domestic wastewater as well as each entity that uses reclaimed water. A total of 26 entities are authorized to treat and distribute reclaimed. Approximately 517 entities are authorized to use reclaimed water.

Permitting performance measures - Permit backlog and high priority permits

Backlog is a measure of uncompleted work. A backlogged permit is defined as a permit that has not been renewed prior to its expiration date or as a new individual permit that is not issued within 180 days of receipt of the permit application. In May 2000 as part of a national backlog reduction initiative, the EPA required a permit backlog reduction plan for the division due to its inability to keep up with permit renewals and requests. Shortly thereafter, the EPA first approved the division's backlog reduction plan, and backlog maintenance expectations have been included in the annual state EPA performance partnership agreement ever since.

Approximately 1,404 permits are currently included in the EPA's permit backlog measure. This includes a subset of permits authorizing discharges to surface water, more specifically, all individual permits and general permits for process water discharges. For FFY2017, approximately 31 percent of these permits are backlogged. The division expects this number to decrease when numbers for FFY2018 are released.

Another EPA measure is priority permits. Priority permit issuance has been used as a performance measure in the PPA between the department and EPA since FFY2005. The measure and procedures have changed over time. However, the EPA has always considered 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. Since FFY2013, the EPA and states are required to select 20 percent of candidate permits. Candidate permits include new and renewal permit applications that have not been acted upon for two years or more plus permits eligible for environmental significance or state/national program priority reasons.

Of the identified candidate permits, the states must commit to issuing approximately 80 percent. For FFY2018, the division issued 100 percent of the priority permits that were targeted by the EPA.

B. Environmental agriculture program

The environmental agriculture program administers regulatory, permitting, compliance assistance and compliance assurance activities for animal feeding operations (AFOs), concentrated animal feeding operations (CAFOs - e.g., large dairies, feedlots, poultry facilities) and housed commercial swine feeding operations (HCSFOs). The program utilizes a sector-based approach that takes into account the interaction and environmental impact of air, water and soil resources when making regulatory and policy decisions.

The program oversees 93 swine farms covered by 10 individual HCSFO permits, 89 certifications under the general CAFO permit, one individual CAFO permit, 115 non-permitted CAFOs, and hundreds of AFOs. The program administers Water Quality Control Commission Regulation 61 - Colorado Discharge Permit System Regulations; Regulation 81 - Animal Feeding Operations Control Regulation; Regulation 66 - Financial Assurance Criteria Regulation for Colorado Housed Commercial Swine Feeding Operations; and Air Quality Control Commission Regulation 2, Part B - Odor Emissions regulation for HCSFOs.

During SFY2018, the program completed 230 compliance assurance inspections at animal feeding operations. Of these inspections, 44 were conducted at CAFOs and 186 were conducted at HCSFOs. CAFO inspections included 18 permitted CAFOs, 24 non-permitted CAFOs and two follow-up inspections at other permitted and non-permitted CAFOs to verify compliance with corrective actions identified during the previous inspection year. In addition, the program conducted 24 compliance assistance site visits at CAFOs and AFOs to facilitate their understanding of the regulations and applicable record-keeping requirements. The program conducted 93 water quality inspections and 93 odor inspections at HCSFOs. Overall compliance rates at CAFO facilities continued to be strong in SFY2018. On average, 84 percent of inspected non-permitted CAFOs and 95 percent of permitted CAFOs were in compliance with the relevant surface and groundwater requirements. HCSFO compliance rates remained very high with approximately 99 percent of sites in compliance with applicable air and water regulatory requirements. No violations were found at 14 of the 44 CAFOs inspected and only two violations were identified during the 186 HCSFO inspections completed.

The number of days required for CAFO facilities to return to compliance following an inspection increased slightly in SFY2018. On average, non-permitted CAFOs returned to compliance in 118 days, up from 112 days in SFY2017 and permitted CAFOs returned to compliance in 126 days, up from 118 days in SFY2017. The increase in days to return to compliance is attributed to two CAFOs, one permitted and one non-permitted that requested additional time to submit completion documentation. The permitted CAFO requested additional time due to the complexity of the violations identified. The non-permitted CAFO requested additional time in order to provide their completion documentation as part of their permit application for coverage under the general CAFO permit. The number of days for HCSFO facilities to return to compliance continued to improve in SFY2018 going from 26 days in SFY2017 to 19 days in SFY2018.

In SFY2018 the program partnered with industry and successfully extended the CAFO fees established in statute until 2025. Industry expressed strong support and a desire for the program to continue and therefore sponsored legislation that extended the sunset date of the current fee structure from three years to seven years. The program continually seeks out operational efficiencies which has resulted in no fee increase for our stakeholders since 2009.

The program completed renewal of 84 certifications under general CAFO discharge permit COA933000 and certified an additional four CAFO facilities in SFY2018. The program currently has three new applications for permit coverage under review.

An AFO compliance assistance binder was developed by the program in SFY2018. The AFO binder focuses on small and medium-sized facilities that don't meet the definition of a CAFO and typically don't work with environmental consultants. The AFO binder provides information on Best Management Practices to minimize impacts to surface and groundwater as well as templates and forms that assist producers in meeting record-keeping requirements. The binder also provides basic information on CAFO requirements for facilities that may be looking to grow and expand their operations.

Program goals for SFY2019:

- Complete renewal of the HCSFO individual discharge permits and implement an updated process for review and approval of the HCSFO Monitoring Plans.
- Utilize the AFO compliance binder along with compliance assistance site visits to assist small and medium-size AFOs with regulatory compliance and record keeping.
- Enhance the program's inspection processes to utilize the division's online database and digital inspection platform which will improve efficiency and further reduce the number of days facilities are out of compliance.
- Continue program improvements to maintain an efficient and effective program that meets stakeholder expectations and supports the department's strategic plan.

C. Water quality information systems

The division uses a rolling five-year technology plan to manage the modernization and integration of information systems. The plan currently includes several platforms to share information, complete internal workflows and facilitate external communications. These systems are provided by Google, Microsoft and custom software providers. A description of the current technological status in SFY2018 follows.

The Safe Drinking Water Program's July 2014 EPA Cross-Media Electronic Reporting Regulation (CROMERR) approval of its Colorado Drinking Water System (CDWS) enabled the program to receive compliance data and reports electronically. On June 15, 2015, pilot testing of the CDWS concluded and full implementation commenced. Since its implementation, the CDWS system has provided significant improvements in efficiency and effectiveness in the Safe Drinking Water Program's receipt of required compliance data and other reports. Of the approximately 2,000 public water systems that are required to submit compliance data, approximately 1,900 public water systems, 60 laboratories, and 2,000 individual users are utilizing the portal to submit reports and sampling data. The department routinely processes an average of 2,000 files per month through the portal. Estimating an average of five minutes per document to process (scan, set metadata, and upload) at $25/hr. saves the department an estimated $50,000/year. In addition, data files are used by laboratories and systems to upload and submit sample results. The use of data files allows the department to electronically upload data directly into our database of record instead of manually entering data from a submitted pdf file. This results in substantial cost savings (i.e., reduced data entry staff needs) and increases data accuracy.

Implementation of the CDWS fulfills long-standing stakeholder requests to provide a reliable, easy to use electronic submittal mechanism. Feedback from stakeholders and labs on CDWS continues to be overwhelmingly positive. However, once the department's customer interface modernization project, Colorado Environmental Online Services or CEOS, is able to meet the business needs of the Safe Drinking Water Program and its stakeholders, it is planned that CDWS will be integrated into CEOS. This project, discussed in greater detail below, will allow a single login for users.

The EPA promulgated a new rule requiring electronic reporting for current paper-based NPDES reports, effective December 21, 2015. The division supports electronic reporting as it saves time and resources for permittees, the state, and the EPA while improving compliance and resulting in better protection of the nation's waters. The rule requires permittees and regulators to use information technology to electronically report information and data related to the NPDES permit program in lieu of filing written reports. The rule required DMRs to be submitted electronically by December 21, 2016, unless a waiver had been granted. All other documents must be submitted electronically by December 21, 2020, unless a waiver has been granted. The division has made substantial progress in implementing the requirements of phase 1 of the EPA's Electronic Reporting Rule, by requiring permittees to submit their discharge monitoring reports (DMRs) electronically through the NetDMR system. The current permitted universe requiring a DMR is 2,517. There are currently 1,380 permits submitting DMR's electronically through NetDMR.

The department's environmental program has embarked on a long-term project called Colorado Environmental Online Services (CEOS). This initiative is designed to create an umbrella system for customers to interface with all of the department's environmental divisions. This interface will provide a single point of entry for customers to electronically provide and obtain environmental information. This system will bring the division into compliance with the EPA's Electronic Reporting Rule. The following two groups within the division have started to utilize CEOS.

1. Permits Section

The division's permits section began beta testing CEOS in August 2018 with a small number of CDPS Colorado Discharge Permit System General Permits. When CEOS is fully operational, the division will be able to accept all Colorado Discharge Permit System permit applications. Users will be able to perform a number of activities such as applying and paying for required permits, uploading documents required by regulation or statute and also updating and modifying information on file. In turn, the division will be able to process requests from the regulated community and provide appropriate permits back through the same portal. CEOS will improve the efficiency of the water permitting process.

2. Grants and Loans Unit

The division's Grants and Loans Unit has fully implemented CEOS for both the Water Pollution Control and Drinking Water Revolving Fund programs. The system has been designed to manage each eligibility survey, submittal and workflow with respect to a community's project funding. Further, the system allows efficient and effective collaboration between the managing agencies, which are the Department of Local Affairs and the Colorado Water Resources and Power Development Authority.

Aside from CEOS, the division continues to update and improve the standards database for the commission that manages and organizes all of the water quality standards, designations, classified uses and temporary modifications. This database includes over 30,000 data records for more than 1,000 waterbody segments.

The division continues to increase the availability of information online through the expansion of our online records system. The Colorado Environmental Records System allows citizens better access to vital environmental information, fosters quicker and more predictable interactions with stakeholders, and allows division personnel to make more informed decisions based on timely and accurate information.

The examples here illustrate the importance of the five-year information technology plan to map the strategic direction for information systems. Each operational area is being examined to make sure the division has the most efficient available technology.

V. STATE FUNDED GRANT PROGRAMS

A. Water Quality Improvement Fund

During the 2006 legislative session, the General Assembly created the Water Quality Improvement Fund (WQIF) (CRS Section 25-8-608[1.5]), and the commission adopted Regulation 55. The WQIF was created to provide grants to local communities/entities to improve water quality, health and safety. Revenue for the fund comes from penalties assessed on polluters who have committed water quality violations.

During the 2012 legislative session, the General Assembly authorized an additional $600,000 for capital construction funding. Historically, $167,000 was appropriated annually with a requirement that the funds be expended within the fiscal year. The 2012 changes provided additional funding, required grants be issued for stormwater management training, and allowed the flexibility to expend the funds over three years.

During the 2018 legislative session, the spending authority for the Water Quality Improvement Fund was increased to $1,500,000, if the fund balance supports this amount. The division issued a Request for Application in SFY2017-18. The table below shows the awardee and the amount of the award.

TABLE 1 - WATER QUALITY IMPROVEMENT FUND SFY2017-18

Award recipient	Award amount
Academy Water and Sanitation District	$101,825.50
Associated General Contractors	$50,000.00
Colorado State University	$50,000.00
Hot Sulphur Springs, Town of	$51,350.00
La Veta, Town of	$101,825.50
Manzanola, Town of	$62,839.00
Paonia, Town of	$89,462.00
Steamboat Springs, City of	$67,883.00
Total	**$575,185.00**

B. Natural Disaster Grant Program

During the 2014 legislative session, the General Assembly created a new Natural Disaster Grant Program to assist communities with water/wastewater infrastructure projects as a result of any natural disasters. Further, the general assembly appropriated $17 million to assist water and wastewater entities with rebuilding as a result of the September 2013 floods. Of the original 25 grants, there are currently three outstanding: Boulder County, Town of Jamestown and the Town of Lyons.

C. Small Community Grant Program

Senate Bill 14-025 revised and consolidated the small communities water and wastewater grant fund to be codified in CRS Section 25-1.5-208: Concerning the establishment of a grant program under the Colorado Water Quality Act to assist suppliers of water and domestic wastewater treatment works that serve a population of not more than 5,000 people with meeting their responsibilities for the protection of public

health and water quality. Since this program is funded directly from energy severance tax, it has not received funding since 2016. This is a result of a significant decline in severance tax revenue.

VI. WATER QUALITY CHALLENGES

A. Legacy mining impacts to water quality

The discharge of low pH metals-laden water into the Animas River on August 5, 2015, at the Gold King Mine near Silverton highlighted the potential impacts of past mining activities on water quality in Colorado. The division's response to the release during this reporting period included monitoring and data analysis. The division collected water quality, sediment, and fish tissue samples in the Animas and its tributaries and assessed the data after the release.

To continue to examine the impacts to water quality from mine activity throughout the state, the division formed an internal task force. The initial focus of this task force was to identify available data regarding mining impacts to water quality and to make recommendations about how to close any data gaps. The division continues to coordinate with the Colorado Department of Natural Resources / Division of Reclamation, Mining and Safety to identify potential source control projects that will improve water quality. The division will also coordinate with local public health agencies, the department's Hazardous Materials and Waste Management Division, and EPA Region VIII staff regarding long-term water management activities that will address mining-related water quality issues. Additional details regarding the monitoring and assessment work conducted by the task force is found above in the special studies section.

B. Possible health threats to drinking water

Lead

The events in Flint, Michigan created heightened awareness of lead in drinking water and generated public interest and media scrutiny. Additionally, the EPA modified its expectations for states to implement the Lead and Copper Rule (rule). The intensity of effort devoted to implementing this rule has not subsided. The division carefully implements the rule as written in accordance with the Colorado Primary Drinking Water Regulations and as directed by Dr. Larry Wolk in his 2016 letter to EPA. In March 2018, the division designated orthophosphate as the optimum corrosion control treatment for Denver Water based on the latter's corrosion control study. Several parties appealed that decision, but the appeals are now stayed while the division works with stakeholders regarding possible treatment modifications (if rule requirements can be met) and identifying, quantifying and mitigating potential water quality impacts.

Perfluorinated compounds

In 2018, two more locations in Colorado beyond the Widefield Aquifer were found to contain PFAs in groundwater: Sugarloaf Fire District in Boulder County and South Adams County Water and Sanitation District in Adams County. The department partnered with the EPA, local health agencies and the affected entities to address these issues. Environmental sampling and investigations continue into all the PFC contamination sites in Colorado. The department is in the process of determining longer term approaches to understand the risk of PFC contamination throughout the state and is beginning efforts to assess resource commitments needed to develop an inventory of sites that might be associated with PFAs releases.

Harmful algae blooms

Harmful algae blooms have been detected in Colorado waterbodies since at least 2014 and may generate cyanotoxins that are dangerous to humans and animals. The department partnered with water systems to adapt the EPA's guidance for state implementation. The department also worked with epidemiologists and

state parks to develop a plan for recreational waterbodies. In 2017, the division helped the town of Wellington respond to a serious algae bloom that caused taste and odor issues and public concerns. The division sampled the drinking water source and treated water, but cyanotoxins were not detected. The division has been working with the Laboratory Services Division to investigate appropriate sampling methods and to determine what constitutes an adequate response to public concerns.

The division received funding from the legislature to support a part time employee to address concerns with harmful algal blooms. This position will develop and implement a robust harmful algal bloom monitoring program to identify cyanotoxin risk in Colorado. The position will also be responsible for providing effective and accurate health risk communications regarding exposure to cyanotoxins. This position will be filled in late 2018.

Unregulated Contaminant Monitoring Rule 4

The fourth round of unregulated contaminant monitoring based on the federal rule of the same name began in January 2018. All public drinking water systems above 10,000 in population along with a subset of smaller systems are required to sample for thirty unregulated contaminants. This process helps the EPA determine the occurrence and levels of contaminants around the nation and contributes to the EPA's decision-making regarding the need to regulate these chemicals. Manganese and some disinfection byproducts could be detected at levels of concern, but this has not happened yet as data reporting is still scant. The division coordinated with the EPA and the Colorado Water Utility Council to prepare for this eventuality but given resource constraints will be in a more reactive mode than desired.

VII. CONCLUSION

The division will continue to plan and implement improvements to its monitoring and permitting programs in an effort to maximize efficiencies and focus on those areas where there is the greatest potential for substantive water quality improvement. The division will continue these efforts by evaluating work processes to make systems more efficient by reducing or eliminating redundancy or waste. This may be done with the involvement of stakeholders where appropriate.

Finally, the division will continue to respond to drinking water impacts posed by regulated and unregulated contaminants. The division is involved in various national work groups regarding lead in drinking water and PFAS. The division is also engaging with stakeholders to begin building consensus toward a sustainable funding pathway for the future.

APPENDIX A

Colorado Water Quality Forum Work Groups

Work Group
303(d) Listing Methodology
MS4 Issues Forum
Colorado Water Quality Roadmap
Permit Issues Forum
Division-Led Work Groups
Harmful algae blooms
Reclaimed water control (Regulation 84)
Graywater control (Regulation 86)

For the latest work group status, please visit the Colorado Water Quality Forum website: http://colowqforum.org.