

**ANNUAL REPORT  
OF ACTIVITIES PERFORMED  
BY THE  
STATE ENGINEER'S OFFICE  
IN 2015**



**COLORADO**

**Division of Water Resources**

Department of Natural Resources

**To Satisfy Requirements  
of Senate Bill 89-181  
Regarding Water Quality**

## **INTRODUCTION**

According to the provisions of Senate Bill 89-181 (SB-181), the Colorado Division of Water Resources/State Engineer's Office (SEO), has been assigned as one of the agencies responsible for implementing the water quality standards and classifications adopted by the Colorado Water Quality Control Commission (WQCC). The SEO will implement water quality standards and classifications only where water quality statutes other than the Water Quality Act require the SEO's involvement. This report provides an update on the activities undertaken by the SEO and its Division offices to accomplish its responsibilities pursuant to the provisions of SB-181 in calendar year 2015.

Few major water quality related problems actually fall within the jurisdiction of the SEO, per past experience. However, the SEO takes a proactive stance in this matter by cooperating with other agencies and organizations in the development of comprehensive and practical solutions for managing the quantity and quality of the state's waters.

There are three major areas where the SEO exercises its authority in implementing water quality standards and classifications. These are:

- Adoption of points of compliance for discharges to ground water
- Approval of substitute water supply plans and non-decreed water exchanges
- Adjudication process of plans for augmentation including water exchanges

### **A. Points of Compliance for Discharges to Groundwater**

The SEO ensures that well construction activities do not result in a pollution discharge to state waters through well permitting activities. All wells must be constructed in accordance with the rules and regulations established by the State Board of Examiners of Water Well Construction and Pump Installation Contractors (BOE). Domestic and commercial water wells are constructed by licensed well drillers. Monitoring and recovery wells can be constructed either by licensed drillers or under the supervision of a professional engineer or professional geologists if the well does not penetrate a confining layer. The BOE takes corrective actions against licensed drillers or pump installers who violate the rules for proper well construction, including fines and suspension or revocation of their licenses. In the case of unlicensed contractors performing well construction activities, fines are levied and legal proceedings are initiated. Well owners have the ultimate responsibility to bring an improperly constructed well into compliance. Otherwise, the State Engineer may order the well plugged and abandoned to prevent contamination of ground water.

In 2015, the BOE investigated 30 new complaints and resolved 31 complaints. Nine (9) fines were levied for rule violations. No licenses were suspended or revoked; but 16 letters of admonition or reprimand were sent out during 2015, an increase of 45%. The staff reviewed and processed 107 requests for variances from the Water Well Construction Rules, including infiltration gallery well construction – on par with the previous year. Approximately 6,197 work reports (3,524 well construction reports, 1,670 pump installation reports, and 1,003 well abandonment reports) were reviewed by staff for compliance with BOE/SEO rules and the data captured in the Well Database. Well abandonment reports document the plugging and sealing of a well. The Board licensed 233 contractors in 2015,

6 more than 2014. All licensed contractors are required to obtain at least eight hours of continuing education for license renewal.

The *Well Inspection Program* was authorized by the legislature in Senate Bill 03-45 and funded by a \$40 increase in well permit application fees. Presently, the program consists of a Chief Well Inspector headquartered in Denver and two additional well inspectors who perform inspections throughout the state. The Chief Well Inspector coordinates the activities of the program and supports the BOE. The primary objective of the program is to assist the Board with the enforcement of its rules and regulations for well construction and pump installation. A key focus of the well inspectors and the inspection program is to locate and initiate action against unlicensed contractors working illegally in the state. The well inspectors conducted 607 inspections in 2015, down from 2014 because of a position vacancy for part of the year and training of a new hire in that position. Over the history of the Well Inspection Program, there has been a decrease in the proportion of violations discovered as a result of inspections. In recent years, the annual rate of BOE Well Construction Rule violations per the total number of well inspections has leveled at about 1%; for 2015 the rate was slightly less than 1%.

The SEO well permitting staff received and acted upon 5,175 new well permit applications in 2015, an increase of 1% over 2014. Of this total, 593 were applications for replacement wells. The majority of the replacement wells were for exempt domestic purposes. In addition, the staff processed 1,012 notices to drill monitoring holes, an increase of 27%.<sup>1</sup> Monitoring holes are predominantly used for temporary monitoring of groundwater quality at environmental remediation sites. The SEO can request water quality data from the applicants when necessary.

During 2015 the BOE continued its preparation for rulemaking to update the Water Well Construction Rules (2CCR 402-2). The twin goals of the Water Well Construction Rules are to safeguard public health and welfare and to protect Colorado's groundwater resources. SEO/BOE staff engaged stakeholders in an extensive pre-hearing review and comment process by holding several presentations and open meetings starting in July 2014. Stakeholders were also given the ability to comment directly through the SEO/BOE webpage. Well construction contractors and engineering, geological, geotechnical, and environmental remediation professionals participated in commenting on four drafts of the rules. The formal hearing took place on March 17 and 18, 2016. The final rules were adopted by the BOE at its quarterly meeting on May 16 and are effective as of September 1, 2016.

## **B. Substitute Water Supply Plans and Non-Decreed Water Exchanges**

Substitute water supply plans (SWSP) provide water users the flexibility of exchanging and replacing out-of-priority depletions on an interim basis or, if the applicant was to continue such operation permanently, until a court approved plan for augmentation is obtained. For approval of substitute water supply plans, the State Engineer requires that the quality of the substituted water meet the use requirements to which the senior appropriators

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<sup>1</sup> Applicants are required to notify the SEO before constructing monitoring holes. These holes are required to be plugged and abandoned within one year unless a "monitoring well" permit is obtained for each hole.

have normally put the water. The SEO reviewed and acted on 230 general SWSPs (including emergencies), an 18% drop from 2014. Of these, 61 were related to gravel pits. The majority of substitute supply plans use river water as the source of substituted water.

Non-decreed water exchanges generally do not involve written approval. They are limited to daily or seasonal timeframes and require the local water commissioner's approval prior to the exchange occurring. The water commissioners keep records of these exchanges in the diversion records for the structures involved. The exchanged water usually comes from reservoirs or from bypassing stream diversions. Seldom has an applicant used treated wastewater or other supplies in a non-decreed exchange. Therefore, the water used in these exchanges generally does not create water quality problems.

### **C. Decreed Exchanges and Plans for Augmentation**

The SEO may oppose applications to Water Court for augmentation plans and exchanges in which the substituted water does not meet the use requirements to which the senior appropriators have normally put the water. The SEO generally does not participate in Water Court cases where the parties who are directly impacted can be expected to raise concerns with respect to water quality issues. However, the SEO will become involved in two instances: First, where there are exchanges involving treated wastewater, the SEO requires the exchanged water be of a quality that meets the requirements of use to which other vested water rights have normally been put or that exchanged water meet the existing water quality standards for discharges to the receiving stream. Second, the SEO, in administering water decrees, will become involved with issues of water quality where water quality monitoring is made a part of the decree by the Water Judge. The Water Judge has the ultimate responsibility to determine the adequacy of water quality when approving new water right applications, plans for augmentation, or exchange plans.

### **D. Other Activities (includes 2015 and 2016)**

Every year the staff at the SEO and its Division offices cooperate with public and private agencies and participate in various forums where water quality and quantity issues are considered. Staff at the SEO play an important role by providing input and advice on the impacts of proposed water policies and regulations on the water-using community.

During the first half of 2015, SEO representatives continued to meet quarterly with other DNR agencies and WQCD managers, to discuss and improve coordination on water quality and quantity issues. Personnel turnover among the agencies and difficulty in schedule coordination hampered attempts for the group to meet in the latter part of 2015. Starting in 2016, in lieu of the larger group meeting, SEO and WQCD staff will meet directly to discuss issues of common interest.

As required by Colorado Water Quality Control Act (25-8-104, C.R.S.), SEO staff members respond to referrals from the WQCD to comment on the potential for injury to water rights from actions related to discharge permit applications. These referrals stem from the Act's declaration that no provision of Article 8 of Title 25 will injure rights to put water to beneficial use.

In early 2016, WQCD's Andrew Ross informed the SEO of the perfluorinated compound (PFC) groundwater advisory issue in the Widefield aquifer south of Colorado Springs in SEO Division 2 (Arkansas River basin). In May, the EPA announced its lowered PFC health advisory levels, which kicked off specific operational activities for water systems using the Widefield aquifer as a water source:

- Stratmoor Hills Water and Sanitation district discontinued use of their Widefield aquifer well starting June 28, 2016. They would normally pump from a well for summer peaking during high demand. They are relying solely on water from Pueblo Reservoir delivered through the Fountain Valley Authority pipeline.
- City of Fountain enacted water restrictions late in June 2016 and lifted them mid-August 2016. The restrictions were activated to reduce use within the system so that well water was not needed for peak demands. City of Fountain is also relying on water delivered from Pueblo Reservoir through the Fountain Valley Authority Pipeline.
- Security Water and Sanitation District enacted voluntary water restrictions to reduce the amount of groundwater used within their water system. Security is taking delivery of Pueblo Reservoir water via the Fountain Valley Authority Pipeline and they also have increased delivery of water via the Southern Delivery System pipeline.
- Widefield Water and Sanitation District reduced the amount of well water placed into their distribution system and is trying to maximize deliveries of water delivered from Pueblo Reservoir from the Fountain Valley Authority Pipeline.
- Venetucci Farms/Pikes Peak Community Foundation stopped sales of livestock and produce because their only source of water for irrigation and stock use is from the Widefield aquifer.
- The SEO and WQCD continue to engage in discussions regarding water sources for entities involved and how to maximize non-contaminated sources while a treatment process is defined and implemented for each organization

Water quality (e.g. salinity and selenium) continues to be discussed in the Arkansas River basin in a variety of forums including compact meetings, water court cases, and the Basin Roundtables. During 2015, multiple entities within the Arkansas River basin began to work together and migrated toward the concept of creating a multi-use Colorado account in John Martin Reservoir. This multi-use account would benefit several well associations and those who are members of compact compliance plans under the "Surface Water Irrigation Improvement Rules" in SEO's Division 2. Since irrigation best management practices (BMPs) to improve water quality often center around (1) converting flood to sprinkler/drip irrigation and (2) lining ditches, allowing those who have made these improvements to access strategically located water storage - e.g., the John Martin multi-use account - is a key element to the water quality improvement discussion. Of course, changing water storage practices in the Arkansas River basin involves Arkansas River Compact considerations, so Kansas and Colorado officials were briefed on the concept at a September 25, 2015 meeting, which included WQCD staff.

On August 8, 2015, the Twin Lakes Canal Company, owner of Grizzly Reservoir, drew down the reservoir water level to allow removal of a driftwood tree that was plugging its outlet structure. The reservoir is located southwest of Independence Pass

on Lincoln Creek, a tributary to the Roaring Fork River in Division 5 (Colorado River basin). The tree damaged the outlet structure and when the tree was removed, the outlet could not be closed to keep the remaining water in storage from draining. Consequently, the drainage entrained metal-laden sediment accumulated over many years in the reservoir bottom and released it downstream. Metals compounds accumulate in the reservoir sediment due to acid mine drainage from the Ruby Mine and natural acid rock drainage from the local geology. The Aspen Times reported that the sediment release caused levels of aluminum and iron to acutely exceed stream water-quality standards; copper and manganese concentrations were also significantly elevated. Both SEO Division 5 and the Twin Lakes Canal Company informed the Colorado Division of Parks and Wildlife of the sediment-laden water release. Pitkin County has subsequently set up an emergency response system specifically for Grizzly Reservoir to notify key agencies and downstream water users of water release issues.

In the San Juan River basin (Division 7), the August 2015 Gold King Mine blowout and subsequent drainage of acidic, metal-laden water into the Animas River caused the shutdown of intake structures downstream for irrigation ditches, municipalities, and other water users. Most irrigators voluntarily closed their diversions for two to three weeks after the spill. SEO assisted in communicating information about the contaminated plume of water to irrigators and other water diverters. Staff assisted the efforts of the federal incident response team and local emergency response team, including county, municipal, CPW, and WQCD personnel by helping responders get to problem areas along the river through our contacts with water diverters.

After the Gold King event, a mine leak was reported in the Rustic area on the Cache la Poudre River (Division 1). On September 14, 2015, the CDPHE Office of Emergency Preparedness asked the SEO to notify the water users downstream along the Cache la Poudre and South Platte rivers. Later, the report was found to be essentially incorrect. The leak was very small from a small mine site draining clear water that infiltrated into the subsurface before encountering surface water.

The above information completes the Senate Bill 89-181 report from the SEO to the WQCC for 2015.