

ANNUAL REPORT
to the COLORADO WATER QUALITY CONTROL COMMISSION
from the HAZARDOUS MATERIALS and WASTE MANAGEMENT DIVISION
COLORADO DEPARTMENT OF PUBLIC HEALTH and ENVIRONMENT

SB 181 Implementation
COMPLIANCE WITH WATER QUALITY STANDARDS AND CLASSIFICATIONS
for the Fiscal Year Ending June 30, 2011

October 2011

This is the annual report provided to the Colorado Water Quality Control Commission (Commission, WQCC) by the Hazardous Materials and Waste Management Division (HMWMD). This report documents HMWMD activities that protect water quality in Colorado, support the mission of the Commission, and implement state water quality standards.

The paragraphs that follow present issues and examples of sites where releases have impacted ground water quality and where HMWMD decisions and actions concerning water quality classifications and standards have established clean-up criteria. There are numerous other examples, not chosen, where the state water quality standards have been used to determine the need for further site investigations or remediation to address chemical releases to the soil, ground water or surface water. For any site, added information that is of interest or use to members of the Commission will be provided on request.

GENERAL

Ground Water Conditional Closure Determinations - Last year's report discussed a process underway within the HMWMD to develop a policy and guidance on sites where HMWMD could cease ground water monitoring at low threat sites, relying instead on enforceable institutional controls to prohibit exposure while natural attenuation continues restoring ground water quality, eventually achieving state standards. Following an exhaustive internal review process, the draft policy ("Policy for Making Conditional Closure Determinations") and guidance ("Guidance for the Closure of Low-Threat Sites with Residual Ground Water Contamination") was made available for public review and comment in August 2010, the comment period extended through the end of November. Twelve sets of comments were received, all of which were subsequently reviewed.

Preliminary indications were that many comments could be addressed by amending the draft policy and guidance. However, the most significant comments in opposition to what the HMWMD was proposing to do at low threat sites came from the Resource Conservation and Recovery Act (RCRA) Program at EPA. Their interpretation of the regulations suggested that the policy and guidance could not apply to RCRA regulated facilities. In response to their concerns, the HMWMD met with EPA on March 15, 2011 to discuss the matter, followed by sending them a letter on April 18, 2011 to which was attached a series of questions seeking legal interpretations on certain regulatory requirements, clarification on past remedial decisions they made that are in line with what the HWMWD is proposing to do and wanting more information on other state programs where EPA regional offices are allowing closure of sites with residual contamination above standards without continued monitoring. The HMWMD is scheduled to meet with EPA on November 2, 2011 to discuss the issue further during which time we hope to learn more about their concerns and possible solutions that may allow the HMWMD, with some modification of the process, to proceed with its planned implementation of the documents governing the conditional closure of low threat sites.

As was noted in last year's report, the HMWMD was at the same time meeting with attorneys and environmental consultants tasked with developing a dry cleaner remediation program similar to what is found in 13 other states across the country. After developing an outline of what such a program would look like in Colorado, two evening stakeholder meetings were held with

representatives of the dry cleaning community for the purpose of presenting them with goals of such a program and the possible mechanisms by which it would be funded. Although the attendees applauded the goal of getting dry cleaning facilities characterized and remediated, they were largely in opposition to any funding mechanism that would have them pay a fee that would result in additional financial hardship in these tough economic times. Faced with this opposition from the regulated community, and the likelihood that our efforts would fail to produce any successful legislative result in the face of such opposition, the effort to develop such a remediation program has stalled. The chair of the workgroup will probably schedule a meeting before the end of the year to formally decide whether or not to proceed. In the meantime, remedial efforts at a number of dry cleaning facilities are faltering when property owners and dry cleaner operators claim a financial inability to proceed with planned work to characterize and remediate ground water, diverting staff time from overseeing cleanups to initiating enforcement actions.

SOLID AND HAZARDOUS WASTE PROGRAM

Solid Waste:

No major changes have been made in the Solid Waste Program that alters the way in which HMWMD applies Colorado's water quality standards and classifications. HMWMD is still working to upgrade our solid waste database to better track facility analytical data and compliance data. The Solid Waste Program continues to implement water quality standards and classifications in remedial cleanup actions, enforcement actions, and design and operations reviews for new or existing facilities.

Specific Site Summaries:

Black Mountain Solid Waste disposal facility had a release of benzene and brine contaminated wastewater to ground water several years ago that occurred because of a ripped impoundment liner. On March 1, 2011 we negotiated a mediated settlement with Black Mountain Recycling, LLC. On April 4, 2011 we approved the site-wide groundwater characterization report. The groundwater contamination plume is delineated and does not leave the property. In addition, the source has been eliminated. The settlement includes requirements for a groundwater remediation plan and financial assurance for the corrective action activities. On September 2, 2011 we commented on the proposed groundwater remediation plan and are awaiting their response.

The agreement also includes provisions to update the engineering, design and operation plan (EDOP) to improve the design, construction and operation of the facility to minimize solid waste releases and improve groundwater protection. On July 31, 2011 we received the revised EDOP and subsequently forward comments on August 8, 2011. The facility responded to the EDOP comments on September 19, 2011.

In early October 2011, the current owner of the facility, Jeff Been, filed for Chapter 11 bankruptcy protection. Although Jeff Been is currently operating the facility, the previous owner who is carrying the note on the facility with Mr. Been, and is ready to step in a resume operations at the site.

Hazardous Waste:

No major changes have been made in the Hazardous Waste Program over the last year, which is Colorado's equivalent of the federal RCRA, Subtitle C program. There have been no significant changes in implementing regulations that alter the way in which HMWMD applies Colorado's water quality standards and classifications for discharges to state waters, including ground water. However, as was noted earlier in this report, draft policy and guidance on the subject of granting "conditional closure" requests at low threat sites where ground water contamination is present above state standards is still in process. If finalized, these two documents play a role in the closure of only a small number of facilities in the coming years.

A review of the Hazardous Waste Program and the various mechanisms contained within the Colorado Hazardous Waste Statute and Regulations governing the protection of state waters may be found in the document entitled "Hazardous Materials and Waste Management Division Report Describing How Programs Are Assuring Compliance With Water Quality Standards and Classifications" (April 16, 1991). As discussed in that report, water quality standards are used as clean-up criteria unless a site-specific demonstration can be made showing that alternate concentration limits are equally protective of human health and the environment. The ability to establish site-specific ground water standards is limited to regulated units at facilities that are permitted to treat, store or dispose of hazardous waste. The regulatory ability to establish unit-specific alternate concentration limits does not apply to facility-wide corrective actions. Nor does it apply to facilities that do not have or are not seeking a permit to treat, store or dispose of hazardous waste (i.e., illegal disposal sites). In these situations, the facility has the option of developing site-specific ground water standards, but they must do so by petitioning the Water Quality Control Commission for the adoption of the site-specific standard. Otherwise they must use the standards established by the Commission as targets for the cleanup of releases.

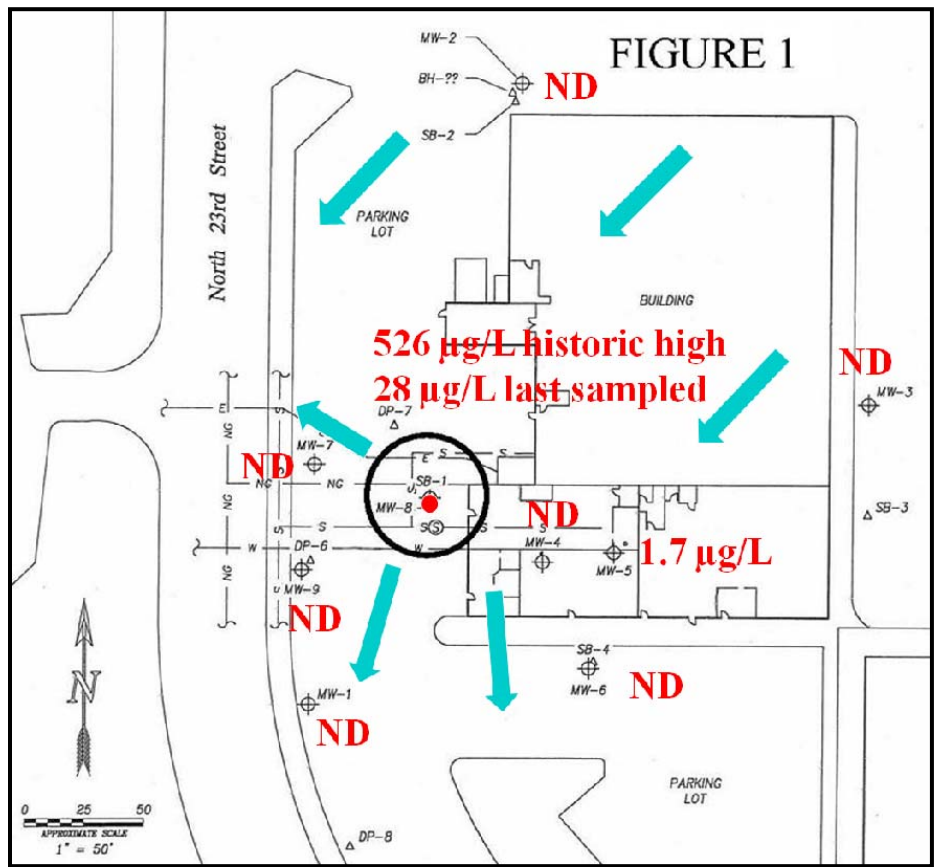
The Hazardous Waste Program's Corrective Action Guidance Document, published in May 2002, provides an overall implementation framework and model scopes-of-work for site characterization, interim actions, evaluation of remedial alternatives and remedy implementation. Section 5.1.3.1 of the Corrective Action Guidance Document states that clean-up standards for ground water are established in "The Basic Standards for Ground Water" of the Water Quality Regulations (Section 3.11.0 in 5 CCR 1002-8). The guidance also informs facilities that they have the option of developing site-specific ground water standards and petitioning the Water Quality Control Commission for their adoption.

Specific Site Summaries:

Teller Arms Shopping Center, Grand Junction

Activities at this facility were discussed as an example of a low threat site that may be suitable for conditional closure without continued ground water monitoring, relying on an environmental covenant to prevent use of ground water while levels continue to decline. Perchloroethylene (PCE) was found in only a single well above standards at a location that suggested historic releases from within the utility corridor (water, sewer, natural gas) was the source of the release. Sampling conducted this summer shows that the concentration of PCE in ground water continues to steadily decline. In response to the latest sampling data and the fact that an environmental covenant has

been placed on the property, the Hazardous Waste Program will likely have made a conditional closure determination for this site by the time the Commission members have reviewed this report, thereby freeing up staff time to direct their attention to other pressing matters.



Cherry Creek Cleaners, Denver

Nearly three years ago, testing on a property scheduled for redevelopment found that soil gas contained high levels of the solvent PCE, suggesting it was derived from the neighboring dry cleaning facility. Upon receipt of that data, the Hazardous Waste Program notified the owner of the property on which the dry cleaner was located that the data suggested past activities may have caused a release to ground water. That property owner, at our insistence, initiated an investigation that confirmed ground water was contaminated with PCE and its degradation products above standards. Testing failed to locate a source, suggesting a prior operator with compliance issues may have been the cause, continued releases ceasing when they vacated the premises, replaced by a dry cleaner using a non-PCE “green” technology. Continued monitoring showed that natural attenuation caused PCE levels to decline and fall below the state standards, possibly allowing us to issue a true “no further action” letter to the property owner sometime before the end of the year.

Shalom Cleaners, Colorado Springs

Approximately three years ago we learned of a release of PCE to ground water at a dry cleaning facility, data generated during Phase II due diligence investigation for this property that was

scheduled to be resold. The maximum measured concentration in ground water was 60 µg/L (standard is 5 µg/L). The concern was that this contamination was migrating offsite towards and possibly into a residential area where homes received their sole source of drinking water from shallow ground water. This past year we a) identified all homes with wells in the presumed downgradient direction of the dry cleaner, b) sent a letter to each homeowner requesting access to sample their water and c) went door to door seeking access, leaving behind a postcard if no one answered. Of the twelve wells known to exist in the area, only three granted access. Subsequent testing verified that PCE was not present in their water well.

The Hazardous Waste Program has since imposed additional requirements on the property owner to remediate what is believed to be an onsite source area based on soil and soil gas test results, followed by a requirement to map the ground water plume offsite. We have since learned that the property owner claims they do not have the financial resources necessary to proceed with the required activities. The Department is in the process of reviewing its alternatives, including enforcing the compliance order and assessing penalties for their failure to implement a work plan of theirs that we approved with modifications. All efforts to sell the property to date have failed as a result of this environmental liability.

RADIATION PROGRAM

The Radiation Program, in part, regulates the operational activities and cleanup of current and former uranium processing, mining, and disposal facilities. It works to isolate the radioactive and heavy-metal wastes and by-products produced in Colorado from the public and environment. This program works in conjunction with CERCLA programs in the Hazardous Materials and Waste Management Division (HMWMD) and implements the Water Quality regulations for surface and ground water at those sites. The Program works with the Division of Reclamation, Mining and Safety and with the Oil and Gas Conservation Commission on issues relating to treatment or monitoring of radioactive materials in ground water. The Program is also currently evaluating the first new application in over 25 years in the US for a conventional uranium mill. We will issue our decision in January 2011.

NORM/TENORM: Program staff continued to work closely with Water Quality Control Division (WQCD) staff and Solid Waste Unit staff to implement the guidance document to address proper management and disposal of water treatment residuals that may contain elevated levels of naturally occurring radioactive material (NORM) or technologically enhanced naturally occurring radioactive materials (TENORM). HMWMD and WQCD staff continue to work together to assess compliance for some of the smaller public water supply systems to help them meet treatment requirements while adequately addressing waste management issues for water treatment residuals. There has been an increase in the number of information requests relative to NORM/TENORM in oil and gas production. The HMWMD is evaluating requirements for testing of produced water for radionuclides to get a better understanding of the scope of the issue.

Lincoln Park / Cotter, Fremont County: Uranium and molybdenum continue to be monitored in ground water in the Lincoln Park Water Use Area (Operable Unit 2) near the Cotter / Cañon City

uranium mill tailings site. The Division-approved plan for soil remediation in the Old Ponds Area in the mill site (Operable Unit 1) has been implemented. Approximately 240,000 cubic yards of contaminated soil have been excavated. This soil was a major source of ground water contamination at the Cotter Mill facility. Ground water concentrations of uranium and molybdenum have dropped in waters down gradient of the Old Ponds Area. The investigation into the source, extent, and character of uranium in ground water found moving north-northwest from the Cotter facility is being performed. Wells are being drilled to define where contaminated ground water is moving in Sand Creek. Some of these wells will be used in a system to stop the flow of contaminated ground water into Lincoln Park. The Cotter facility is undergoing full decommissioning in addition to addressing ground water contamination.

UMETCO Uravan: Complete remediation of the Uravan site was accomplished in 2008. Alternate Concentration Limits (ACLs) are in place for several contaminants in ground water. A long-term program of ground water and surface water monitoring is being developed to demonstrate that the ACLs continue to be protective of the river and that contaminant concentrations are stable or decreasing now that the source has been removed. At license termination and deletion from the National Priorities List (Superfund), the facility will be transferred to the U.S. Department of Energy for long-term surveillance.

Schwartzwalder Mine, Jefferson County: The Radiation Control Program licenses the treatment system being used to clean uranium-contaminated ground water before it enters Ralston Creek.

Department of Energy atomic blast sites, Garfield and Rio Blanco Counties: The Radiation Control Program advises the Oil and Gas Conservation Commission on the monitoring and testing of ground water for radioactive materials from gas wells being drilled near the Rulison and Rio Blanco atomic blast sites.

REMEDIATION PROGRAM

Superfund Activities: The Comprehensive Environmental Response Compensation and Liability Act (CERCLA or Superfund) requires that remedies chosen to address hazardous substance releases must either meet existing standards or, in limited cases, waive those standards. During each remedy selection process, the Hazardous Materials and Waste Management Division (HMWMD) submits to the United States Environmental Protection Agency (EPA) a list of state regulations that are either directly applicable to a particular cleanup situation or which are relevant and appropriate requirements (ARARs). Water quality standards are identified after consultation with the Water Quality Control Division (WQCD). The following site summaries are provided for sites that, over the past year, had new activity related to compliance with water quality standards. Information on other Superfund sites can be provided on request.

The Central City/Clear Creek Superfund Site is located in Clear Creek and Gilpin counties. Over the years, work along the main stem has been completed, including the capping of more than 15 mine waste piles and the construction of a water treatment plant in Idaho Springs to treat the Argo and Big Five tunnel discharges and Virginia Canyon groundwater. Work continues on the North Fork, with 25 waste piles addressed through removal or erosion control measures, and construction of an on-site repository and sediment control dams. The Record of Decision also calls for the

active treatment of the Gregory Incline and National Tunnel discharges and Gregory Gulch alluvial ground water. The plant, currently in design, will be sited just downstream of Black Hawk. Construction is anticipated to begin in 2012.

The next Colorado Water Quality Control Commission (WQCC) triennial review of the South Platte River Basin, including Clear Creek, is in 2013. The HMWMD is collaborating with EPA, WQCD, and Colorado Division of Wildlife to collect additional data for Segment 2b to inform the next triennial review.

A Record of Decision for the Standard Mine Superfund Site was finalized in September 2011. The selected remedy consists of two phases, with monitoring performed after the first phase to determine the success of the Phase 1 remedy and to determine the need for Phase 2. Phase 1, Source Control, includes a flow-through bulkhead and contaminant control inside the mine. A passive water treatment system will be implemented in Phase 2 if necessary to achieve surface water quality standards.

At the Summitville Mine Superfund Site in Rio Grande County, the state has just completed the construction of a new water treatment plant. The new plant has been going through startup and commissioning over then late summer and fall of 2011 while the old water treatment plant continued to treat contaminated water. The old treatment plant was shut down in October 2011. The new plant will allow us to meet standards in segment 3b and 3c of the Alamosa River.

Voluntary Cleanup and Redevelopment Activities: The Voluntary Cleanup and Redevelopment Act (VCRA) staff continues to encounter issues related to surface and ground water contamination. The staff works closely with the WQCD on each site-specific decision to assure compliance with the appropriate regulations. Meeting ground water standards is an ongoing issue at VCRA sites. Since these sites are most often the subjects of real estate transactions, the buyers and sellers try to assure that the cost of cleanup does not make the economics of the deal unfeasible. Therefore, most clean-up plans focus on source control or removal rather than treatment of contaminated ground water plumes. The VCRA staff strives to assure that ground water standards are met at the property boundary. HMWMD requires any applicant that exceeds ground water standards at the property boundary to apply to the Water Quality Control Commission for a variance, a site-specific standard, or a change in point of compliance (unless this will only be temporary during cleanup activities and the applicant can show that no surface water body is impacted and no exposure is occurring during this period). This assures that the program complies with water quality regulations.