



Annual Report

2010

Prepared by the

Albuquerque / Bernalillo County
Water Protection Advisory Board

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This report presents an overview of the Water Protection Advisory Board's recent activities, its primary accomplishments, and its areas of focus going forward. In addition to summarizing Board activities, this report also offers a brief evaluation of the progress and effectiveness of the implementation of the Groundwater Protection Policy and Action Plan.

Introduction

The City of Albuquerque and Bernalillo County passed resolutions calling for action to clean up and protect the Middle Rio Grande's (MRG's) shared groundwater resources. After five years of planning and research, the Albuquerque/Bernalillo County Groundwater Protection Policy and Action Plan (GPPAP) was adopted by the County in November 1993, the City in August 1994, and subsequently by the Albuquerque Bernalillo County Water Utility Authority after its creation in 2003. The plan was updated and revised in 2009 with a Surface Water Protection Policy and Action Plan and integrated into a single Water Quality Protection Policy and Action Plan (WQPPAP). The Water Protection Advisory Board was established by parallel City, Authority, and County ordinances and is made up of citizen members appointed by those governments. We were given the charge to study and advise the City, the Authority, and the County on surface and groundwater protection concerns and to oversee implementation of the Groundwater Protection Policy and conduct a periodic comprehensive review and evaluation of the effectiveness of the Groundwater Protection Policy and Action Plan and recommend any necessary changes to it.

The purpose of the WPAB is to:

- Study and advise the Authority, City, and County on surface and groundwater protection concerns;
- Oversee implementation of the Water Quality Protection Policy and Action Plan;
- Promote consistency in Authority, City, and County actions to protect surface and groundwater quality; and
- Advocate effective protection of surface and groundwater quality.

The WPAB consists of nine members, two appointed by the Authority, three appointed by the Mayor with the advice and consent of the City Council, and three appointed by the County Commission. One member is appointed jointly by the County Commission and the Mayor with the advice and consent of the City Council. A Policy Implementation Committee (PIC), comprising members from several organizations with water quality protection programs in the region, is responsible for implementing the WQPPAP. The PIC also helps the WPAB fulfill its purpose through technical assistance, administrative services, and staffing resources.

Water Protection Advisory Board Activities for 2010

The WPAB holds regularly scheduled meetings on the second Friday of each month, addressing specific water-quality concerns. The board solicits information and data in different ways; many entities and specialists provide presentations directly to the board during their meetings. In 2010, the WPAB meeting agenda topics included information in the following areas:

- Emerging water quality topics;
- Watershed management tools;
- Specific remediation projects in the basin;
- Rules and regulations; and
- Water quality research efforts in the basin.

Staff representing several entities that provided information and presented to the WPAB during the last two years included the following:

- New Mexico Environment Department (NMED)
- Daniel B. Stephens & Associates (DBS&A)
- Sandia National Laboratories (SNL)
- Albuquerque Metropolitan Arroyo and Flood Control Authority (AMAFCA)
- Office of Natural Resources Trustee (ONRT)
- Kirtland Air Force Base (KAFB)
- U.S. Environmental Protection Agency (EPA)
- Bernalillo County Water Resources Program (BCWRP)
- Bernalillo County Environmental Health Office (BCEHO)
- Bernalillo County Public Works Department (BCPWD)
- Albuquerque Bernalillo County Water Utility Authority (ABCWUA)

- City of Albuquerque Environmental Health Department (COAEHD)
- City of Albuquerque Planning Department (COAPD)
- U.S. Geological Survey (USGS)

Over the course of the last two years, 27 presentations were provided to the WPAB about surface and groundwater contamination, water utility topics, regulatory issues and emerging water quality concerns. The information provided has assisted the WPAB in overseeing implementation of the WQPPAP and in promoting actions to protect Albuquerque and Bernalillo County's precious water resources.

Summary of Major Topics

The following paragraphs describe the major topics considered by the Board over the last two years.

Middle Rio Grande Water Quality

- The U.S. Army Corps of Engineers performed a baseline study in the Middle Rio Grande (MRG), monitoring 30 sites for nutrients, salts, and dissolved oxygen.
- Sampling data showed that agricultural activity in the area has created sinks or areas where nutrients are removed from the water through uptake by the plants and flood irrigation practices.

Groundwater Contamination Investigation and Clean Ups

NMED has a Superfund Section that works with the EPA to investigate and clean up National Priority List (NPL) sites, and a Remediation Oversight Section that also oversees the investigation and clean ups of contaminated groundwater sites.

NMED's Hazardous Waste Bureau also has jurisdiction over sites that have spills or discharges in violation of the facility's Resource Conservation and Recovery Act permit.

- KAFB Fuels Facility Spill – The contamination from the base's Bulk Fuels Facility. Two investigations are occurring: one concerning the vadose zone (the area between the land surface and the groundwater table) and the other addressing the saturated zone beneath the water table, or regional aquifer. The current understanding of the situation is:

- Fuel product occurs above the water table and slightly below it.
 - Dissolved phase fuel has migrated ahead of the floating product and extends about a mile from the source area; although the vertical extent is not defined, this contamination represents the biggest risk to production wells.
 - The fuel product plume extends 0.5 miles at a depth of approximately 500 feet and is 1.5 ft. in thickness.
 - The plume that has impacted the vadose zone is approximately 320 feet in length. Cleanup of the vadose zone started in 2003 and is ongoing.
 - No ABCWUA production wells have been affected by the plumes at this time.
 - Remedial action needs to take place expeditiously to avoid additional harm to the aquifer and jeopardy to production wells.
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- Mountain View Nitrate Plume – Excessive nitrate in groundwater was first detected in the 1960s at this South Valley site. BCPWD has focused on connecting residents to the water and sewer systems in this area to relieve exposure from the plume. The Office of the Natural Resources Trustee (ONRT), in collaboration with the NMED, is applying \$2.5 million of a financial settlement award towards investigating and cleaning up the plume.
 - Fruit Avenue Superfund Site – This site was listed on the NPL in 1999, making it eligible for federal funding, or the “Superfund”. Seventy wells are currently being used in the remediation activities of the trichloroethene plume, and sampling results indicate a steady decline in levels of the solvent. When remedial goals of 5 parts per billion were met, EPA shifted remediation activities from full-time to pulsed operation. EPA project management assured ABCWUA and the City that an effort will be made to communicate when pumping activities will occur.
 - South Valley GE Superfund Site – NMED is monitoring the presence of dioxane, an organic compound, in the deep aquifers at the South Valley GE Superfund site. Dioxane currently has no groundwater quality standard.

- ATSF Tie Treater Superfund Site – The Atchison, Topeka, and Santa Fe Railway (now Burlington Northern and Santa Fe Railway Company) built a railroad-tie treatment facility in 1908, and it was initially closed in 1972. The Site received National Priority List (Superfund) status in 1994. The site is contaminated with creosote and zinc; soil at a depth of 2 feet below ground surface (bgs) were to be excavated, except where levels of benzo(a)pyrene, a constituent of creosote, is found above the cleanup target of 200 micrograms per kilograms (mg/kg). In this case, excavation to a depth of 3 ft. bgs is to be conducted. Low level areas of surface soil contamination by zinc will be remedied through phytoremediation, or introduction of plants that will uptake the zinc. Groundwater is currently being cleaned using extraction pump systems. A cap is in place to prevent future leaching.

Storm Water Quality in the Middle Rio Grande

- Studies performed in 2002 and 2005 indicated that storm water discharge in the Middle Rio Grande contributed high levels of *Escherichia coli* (*E. coli*) and reduced dissolved oxygen (DO) levels to this stretch of the river. The MRG is on the “Integrated List of Assessed Rivers.” Levels of both *E. coli* and fecal coliform were above state water quality standards for recreational use.
- The North Diversion Channel has been identified as contributing to the reduced DO levels. Low levels of DO measured during storm events typically are less than an hour in duration but were significant enough to need to be addressed in order to be compliant with a National Pollutant Discharge Elimination System (NPDES), permit issued by the EPA.
- *E. coli* sources were determined to be from mixed sources, including wastes from dogs, birds, humans, and other kept or feral animals. The bacteria are captured in storm water drains and carried to the river.
- EPA is considering the approval of Bernalillo County’s Notice of Intent for a general Phase II NPDES permit, submitted in 2007. EPA is consulting with the U.S. Fish and Wildlife Service to determine whether the County’s application and storm water plan comply with the Endangered Species Act Section 7.

Regulatory Issues

- NMED Groundwater Quality Bureau oversees 200 dairy permits in the state. NMED data suggest that more than 65% of the dairies in the state have groundwater with nitrate levels above groundwater standards. NMED is in the process of developing dairy-specific rules, as directed by the state legislature, that will outline the regulatory process and technical requirements for dairy operations in the state. Proposed regulations require double-lined lagoons and specify a monitoring network.
- Bernalillo County's Wastewater Ordinance No. 2006-1 requires all on-site wastewater systems in the County to meet new requirements by 2015. The number of known septic systems in Bernalillo County is 25,000; approximately 5,000 of them are in the East Mountain area of the County.
- Santa Fe County adopted an Oil and Gas Well Ordinance to regulate oil and gas well operations on county land to avoid adverse impacts to soil and groundwater. It requires the installation of three monitoring wells at the drilling site. In addition, infrastructure improvements, including roads and fire protection, need to be in place before the construction of the oil and gas facilities.

Water Utility Issues

The Valley Utility Project (VUP), a joint effort between the City, County, and Village of Los Ranchos, now fully serves the North Valley area with sewer and water services. The VUP is now a separate entity from the City and County. Phase 5 of the VUP was scheduled for completion in July 2010 and will provide water for homes between Raymac and Cherry Tree in the southwest area of the South Valley.

- New developments within the existing and planned ABCWUA service area first must be approved by the ABCWUA Board, and if approved, costs associated with the additional infrastructure are paid for by the new development through prorated service fees.
- There are 18,000 potential connections in the current service area. Some issues that are delaying connection include water rights transfers, arsenic content in production wells, and the development of new sources and transmission lines.

- New City adopted Sector Plans incorporate the use of xeric and low water use plants, encourage green and low impact construction, low water use fixtures, and the utilization of existing infrastructure.

Emerging Water Quality Issues

The NMED performed a study to determine the levels of Polychlorinated Biphenyls (PCBs) in the ABCWUA's surface water resources that may be emanating from the Los Alamos National Laboratories (LANL). Results indicated that:

- Levels of PCB's near LANL were 30 times lower than the state water quality standard, and
- Detected levels were not distinguishable from background levels.

The USGS performed several studies around the U.S., finding three primary factors in determining water quality in municipal wells: age distribution of water, short-circuit pathways, and geochemical conditions. Unique features in the MRG include:

- Lack of recharge;
- Most groundwater is greater than 2,000 years old;
- Detection of young water in production wells;
- Large decline due to over pumping; and
- Change from groundwater to surface water use.

Primary Accomplishments

The WPAB helped oversee the development and adoption of the Surface Water Protection Policy and Action Plan, which added surface water quality protection components to the Groundwater Protection Policy, and its integration with the Groundwater Protection Policy to form the comprehensive Water Quality Protection Policy and Action Plan (WQPPAP). In addition to development of this new policy, the WPAB worked with the PIC to develop a set of timelines and responsibilities for implementing the new surface water components.

The Board also proved to be an effective advocate for staff, communicating the concerns of the City, County, and Authority to the U.S. EPA, New Mexico Environment Department, and U.S. Air Force about the need for more progress in the cleanup of existing groundwater contamination. In this regard, we joined with others to urge expedited and expanded action on the Kirtland Air Force Base bulk fuel terminal spill,

making a statement to this effect to the ABCWUA Board and writing to the Governor and our Senators and Congressman.

The Board also weighed in with support for the City solid waste rate increase and endorsement of the Watershed Restoration Action Strategy.

Board Priorities for 2011-2012

Based on study and analysis of the topics and issues described above, the Board identified three areas of focus for the next two years:

- ***Kirtland Air Force Base Bulk Fuel Terminal spill.*** The sheer magnitude of contaminants in the subsurface emanating from decades of releases from this facility make this issue the number one threat to groundwater in the County. The Board will continue to track the progress of the investigation and cleanup efforts and weigh in as needed with elected officials and those responsible for the cleanup.
- ***Implementation of the new surface water protection measures.*** Adopted only around a year ago, implementation of the protection measures outlined in the Water Quality Protection Policy is in the early stages. The Board will work with the Policy Implementation Committee to help make sure adequate progress occurs on these measures.
- ***Foster intergovernmental coordination, cooperation, and communication.*** More than a dozen local, regional, state, and federal agencies have the authority and responsibility to further the aims of the Water Quality Protection Policy. As noted above, the Board has proven to be an effective forum to foster communication among these groups. We will continue to do so.

The following section presents a brief summary of our evaluation of the effectiveness of the Groundwater Protection Policy and Action Plan implementation.

Evaluation of Groundwater Protection Policy Implementation

The enabling ordinances setting up the Board direct that every five years we conduct a comprehensive evaluation of the effectiveness of the water quality protection policies and recommend any necessary changes.

At present, the Board and Policy Implementation Committee staff lack sufficient resources to conduct a comprehensive review and evaluation. If it is the intent of the City, County, and Authority to conduct such an evaluation every five years, they will need to provide sufficient resources. We can, however, make the following observations and recommendations.

Limit Discharge of Contaminants

Significant progress has been made countywide in implementing the measures designed to limit the discharge of contaminants from on-site liquid waste disposal systems (primarily septic tanks). The significant public education efforts should continue as the 2015 deadline for full implementation of the County Wastewater Ordinance (No. 2006-1) approaches. County staff are particularly concerned about the lack of connections in the South Valley industrial park.

Recommendation: Sewer expansion has been significant and should continue. The County should continue with the implementation timeline set out in its Wastewater Ordinance.

Regional Groundwater Monitoring

Good progress has been made with regard to regional groundwater monitoring activities. However, the lack of a centralized and well-maintained regional database is apparent.

Recommendation: The City, County, and Authority should establish agreements with federal, state, and regional agencies to formalize the exchange of information about groundwater quality and potential threats to water quality. They should also provide the resources necessary to keep the data current and accessible.

Coordination and Cooperation with State and Federal Agencies

Coordination and cooperation with the state and federal agencies (primarily NMED and EPA) with statutory authority over soil and groundwater remediation activities has improved noticeably. However occasional gaps and lapses remain.

Recommendation: A more structured means of communication and coordination should be put in place to prevent this. In addition, with the advent of the surface water quality protection policy and action plan, a similar program should be put in place with the U.S.D.A. Forest Service, U.S. Fish and Wildlife Service, U.S. Bureau of

Reclamation, U.S. Army Corps of Engineers, Middle Rio Grande Conservancy District, and the Albuquerque Metropolitan Arroyo Flood Control Authority.

Policy Implementation Committee

The Policy Implementation Committee appears to have been somewhat rejuvenated over this past year and now meets on a regular monthly basis. However, involved staff have a multitude of other competing assignments and responsibilities.

Recommendation: The City, County, and Authority should consider a more structured management approach for the PIC—perhaps establishing a rotating committee chair with sufficient time dedicated to policy implementation and coordination activities.

Water Protection Advisory Board

The Board is now fully staffed, but with the recent retirement from the board of the long-serving Dr. Bruce M. Thomson, we have lost some of our continuity and institutional memory.

Recommendation: A dedicated web site should be created to host WPAB and PIC documents and activities and create a long-term record of their undertakings and progress.