



Newsletter

Environmental Connection

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Sponsored by the Utah Department of Environmental Quality

Donna Kemp Spangler, Editor

2006 Legislature Ends: Key Environmental Bills pass; Await Gov's Signature

The 2006 Legislature drew to an end March 1, with the passage of several key environmental-related bills that could become law with the stroke of the Governor's pen.

Two automobile-related bills – one aimed at cutting down mercury air emissions and another keeping car batteries out of the landfills – passed both Houses with strong support. HB 138, sponsored by Rep. Rhonda Rudd Menlove (R-Garland), provides a \$5 incentive to scrap dealers to remove small mercury switches in vehicles before being salvaged at places like Nucor Steel. The “bounty” would be paid by automobile makers and require limited oversight from the state Department of Environmental Quality (DEQ). The Lead Acid Battery Act, a cost-free program to taxpayers that has been in effect since 1992, will continue for another 10 years under an omnibus bill that gained passage by both Houses early in the session. The Act requires all retail outlets that sell lead acid batteries to accept the old batteries from customers if they buy new ones. The batteries are then taken out of state for recycling.

“We are pleased the Legislature passed these bills, both of which provide tremendous environmental benefits,” said Dianne Nielson, executive director of DEQ.

DEQ officials worked closely with lawmakers to support several bills that provided a clear benefit.

“We watched the progress of the bills throughout the session,” said Bill Sinclair, deputy director of DEQ. “We worked closely with the bill sponsors to provide the information they needed.”

A DEQ-initiated legislation – a bill aimed at establishing a financially sound Petroleum Storage Tank Trust Fund – also passed with strong support. Under HB 271, sponsored by Rep. David Ure (R-Kamas), the owners and operators of underground petroleum storage tanks would be given an “all or none” choice: either participate fully in the fund by including all tanks under the state’s insurance program or self-insure all the tanks. The change will help bring the fund to solvency with an anticipated increase of \$550,700 in FY 2007 and \$1.5 million in FY 2008. That money will help pay for cleanups of leaking underground storage tanks.

The Legislature passed a statewide budget but will be back in special session to resolve tax reform issues lingering between lawmakers and the Governor. DEQ, however, did receive nearly all of its funding requests, with the exception of restoring money that was cut three years ago to local health departments. The Legislature did approve a \$200,000 appropriation to help pay for a stakeholder-supported air quality study of animal feeding operations and \$250,000 to help fund the state’s opposition to high-level nuclear waste planned for interim storage on Goshute tribal lands.

“This is good news,” said Nielson. “This year, the Legislature passed a base budget and then looked at all the priorities. We did get nearly everything we requested, so we do have the money to meet our obligations in terms of Environmental Quality programs.”

Energy Policy and Clean Fuel Passes

Utah’s energy policy is now set under a bill that passed both chambers. HB 46, sponsored by Rep. Roger Barrus (R-Centerville), designates a state energy officer to encourage development and promotion of the state’s energy resources. Also headed to the Governor for his signature is HB 93, that modifies the state’s Clean Fuels and Vehicle Technology Fund that provides loans and grants to businesses and government entities purchasing clean vehicles. Sponsor Rep. Jim Gowans (D-Tooele) expanded the fund to include other types of vehicles, retrofits and fuel systems determined to be effective in reducing air pollution. Both bills arose out of the recommendations of a bipartisan Energy Policy Work Group formed last summer to develop energy policy for Utah.

Water Bills Afloat

Several water bills sailed through the Legislature, including HB 38, sponsored by Rep. Ben Ferry (R-Corinne) that allows the reuse of water for certain projects as long as the plans are reviewed by the Division of Water Quality.

A pair of giant water projects of interest to DEQ also won passage, including:

- SB 27, sponsored by Sen. Tom Hatch (R-Panguitch), authorizes the initial, pre-construction funding for the Lake Powell pipeline;
- HB 45, sponsored by Rep. Stuart Adams (R-Layton), authorizes pre-construction funding for the proposed Bear River dam/reservoir project;
- HB 47, sponsored by Sen. Lyle Hillyard (R-Logan), lifts the cap of 1/16th percent of the state’s sales tax for water projects and provides the seed money – roughly \$5 million a year – for both the Powell pipeline and Bear River plan, in addition to other projects; and
- HB 357, sponsored by Rep. Dave Ure (R-Kamas), reauthorizes the Water Issues Task Force for another year to review and make recommendations on the financing of water development projects.

Some Surprising Bills Emerge

There were some surprises that emerged during this session that drew some considerable debate. A bill, sponsored by Sen. Howard Stephenson (R-Draper), intended to give lawmakers new veto override authority in the licensing of a commercial waste facility won passage from both the House and Senate. But a veto by Gov. Jon Huntsman Jr. set the stage on the final day for a possible veto override. The Governor prevailed in the end. Although the Senate had the votes to override the veto the House never pursued it.

Also debated was a trio of bills aimed at environmental lawsuits. Only one passed both Houses. HB 100, which requires an entity to post a bond before heading to court, passed both Houses. The failure to post a bond does not limit court proceedings but would require the Department of Commerce to revoke the entity's registration to do business in Utah. The Environmental Protection Agency has voiced concerns about the proposed law and the Governor has indicated he may veto the bill. The other two bills, sponsored by Aaron Tilton (R-Springville), did not pass the Senate:

- HB 259 covered requests for a stay of a Division of Air Quality Board Administrative appeals. An amended version would have left it up to the Board to decide whether to require a bond or not; and
- HB 335 covered stay requests of Administrative appeals before the Radiation Control Board. It was also amended, leaving the decision regarding a bond up to the Board.

The Governor has until midnight March 21 to exercise his veto authority.

DEQ Employees Learn How to Deal with Conflict

As the first point of contact with the public, Laurie Leib, who frequently works the reception desk at the Department of Environmental Quality, gets all kinds of questions, and complaints from callers who are irritated, frustrated, or worse. "A lot of times people don't know what they are asking for," she said. "So I try to listen, ask questions, and find the appropriate person to speak with the caller." There are also callers who simply just want to complain. "A recent caller wanted to know what kind of face mask he needed to buy to protect him from the bad air quality conditions," she said. "He then went on to ask whether I drove my vehicle today and if so, pointed out that I was part of the problem."



Leib, the executive secretary for the Office of Support Services, was among the dozens of DEQ employees who participated in a conflict resolution class, developed by two University of Utah law school graduates, Michele Straube and James Holbrook who formed CommUnity Resolution, Inc. Renette Anderson of DEQ's Planning and Public Affairs Office taught the 8-hour course at DEQ on February 13 and 14. "Recognizing and understanding what situations push your buttons is the first step toward conflict resolution," she said. "Different people respond to stress in various ways. For instance, some people will automatically withdraw from the conversation altogether rather than dealing with the problem while others may handle the situation more direct, argumentative way."

There are many potentially volatile situations employees can relate to. Frank Roberts, an environmental engineer with the Division of Drinking Water, finds himself caught between federal requirements that he must enforce and the Utah water utility that gets hit with the regulation. “Water systems are told that their water must be treated for tougher arsenic standards (see related story) for example, or that their spring is under the influence of surface water and they can’t understand why they have to do the treatment when their water is safe to drink. So I am the one to explain it to them.”

Similarly, Mark Jensen, a geologist for the Division of Drinking Water, deals with a lot of situations that put him in the middle of a dispute. An all too common issue is a developer wanting to locate septic tanks near a drinking water well in a county that prohibits it. “I have to tell them that local ordinances may not allow it,” he said. “So what I do is explain that they need to talk to the county.”

Anderson takes the class through several role-playing exercises and offers them tips on ways to turn a potentially explosive conversation to one that ultimately leads to solving the disputes. “Effective communication involves listening, mutual understanding and respect,” she said. “To become a better listener, look at the person speaking to you, ask questions, don’t interrupt, don’t change the subject, empathize and respond both verbally and nonverbally to put the person at ease and establish trust.”

Tim DeJulis, an engineer with the Division of Air Quality’s New Source Review, doesn’t often come in contact with difficult clients during the permitting process. But if he ever does he plans to put to practice what he has learned. “I believe this will be useful.

DEQ Web Master Gives Site New Look

Every month, thousands of people visit the Department of Environmental Quality’s Web site, looking to find where they can go to dispose of their household hazardous waste or to check out the latest air quality conditions or a host of other questions.

Visitors to the Department’s Web page, www.deq.utah.gov, will notice a new look this month, one that officials hope leads to easier access to the kinds of information sought by the public.

“It was a year in the making,” said Brandon Smart, DEQ’s Webmaster. “It started with a Web committee, which consisted of scientists, engineers, and IT professionals. Our goal was to give DEQ a more uniform look across the six divisions while making sure we adhere to the current Web standards.”



Brandon Smart, DEQ web master

That meant completely revamping the site. Smart, a 28-year-old graduate of Utah Career College, researched the latest design features to make sure it would be compatible with all browsers and internet devices. “For instance, our previous design was a table-based layout. The new version uses CSS (Cascading Style Sheets) to achieve a fluid layout that is able to expand to fill the users’ screen. This method of design offers many advantages in that it makes our site more accommodating, easier to use, and more efficient,” Smart said.

Another focus is to ensure that users with special needs are able to access and use the Web site. A variety of features have been added to enable users of assistive technologies to easily access information.

Users also are able to print any page, an improvement over the old site.

“An added benefit of the redesign was reduced load times and overall file size,” Smart said. “We’ve eliminated a lot of duplication, and at the same time reduced the file sizes to maintain a good look and feel while keeping wait times to a minimum.”

Weeks before the Web was launched, surveys were sent out to various users like media groups and DEQ employees, asking their opinion, which remained anonymous to allow them to freely express what they thought about the new site. “I’m really happy with the feedback I received,” Smart said. “It ranged from making sure we provide the information about our loan programs more visibly to correcting the outdated information we had about certain programs.”

Having a functional Web site is an important public outreach tool, noted Leah Ann Lamb, director of DEQ’s Planning and Public Affairs. “It’s our No. 1 way we communicate to the public about DEQ programs, current issues and how we can provide assistance,” she said. “Brandon did a superb job meeting our objectives of what we wanted from the site.”

The Web site is intended to be flexible, added Smart. “It will likely change again,” he said. “We are open to modifications based on feedback and new technology. For instance, adding more electronic forms, allowing users to simply fill out forms on-line, News Feeds, and a variety of other features will be added, making the site more interactive.

To learn more about the new DEQ Web site, please visit www.deq.utah.gov/about_DEQ_site.htm

Mercury Testing At State Lab Helps Speed Up Analysis

Dan English leans forward, scalpel in his gloved hand, ready to slice open a brown trout – one of several species now residing in a deep freeze awaiting mercury tests that will help environmental scientists determine the extent of Utah’s mercury contamination among fish.

“We use a Teflon-coated blade,” said English, an environmental scientist with the Division of Water Quality, who along with colleague Benjamin Brown, helped collect the fish samples from various Utah waterways last year. “Teflon versus polypropylene gives us added quality assurance that we are not contaminating the sample.”



He removes a thumb-sized portion of the trout, peels off the skin and mashes the flesh in a crucible. The results are then placed in a sample tube that has been pre-screened to ensure that it is free of mercury or any other contamination that could compromise the results.

“Each fish gets a code that identifies the species and age of the fish, which is based on its length and weight” Brown explains, preparing a label that will identify this particular sample and its source.

English pulls another frozen fish out of the cooler. But before its turn at the scalpel, there is the meticulous cleaning – the cutting board and tools have to first be washed with hexane and carefully rinsed with ultra pure de-ionized water to guard against contaminating this sample with the remains of the previous one.

This process is repeated over and over again, about 50 times a week. The attention to detail is routine when preparing fish for mercury testing at the Utah Public Health Laboratories, located on the University of Utah campus.

The testing is a partnership between the Department of Environmental Quality and the Department of Health that was made possible through the purchase of a \$50,000 “direct mercury analyzer” that has greatly accelerated the state’s testing for mercury – mostly in the form of toxic methyl mercury in fish tissues – that has been found in several Utah waterways, prompting consumption advisories for three areas of the state. Before the purchase, Utah environmental scientists had to ship their fish to an Environmental Protection Agency lab in Oregon, where the backlog of samples would result in months of delays.

DEQ just couldn’t wait that long and decided to purchase its own equipment, which arrived about three months ago.

“It’s important that we rely on our own procedures and data,” says Walt Baker, director of the Division of Water Quality. “We can feel confident in the results.”

Dr. Sanwat Chaudhuri, director of the Bureau of Chemical and Environmental Services at the lab, says it is tedious work, making sure the calibrations on the mercury analyzer are accurate and that all of the equipment is sanitized. It also means duplicate testing to ensure accurate results. It is a time-consuming process, but “it is so important that the data is reliable,” she says.

John Whitehead, branch manager for the Division of Water Quality and chairman of the Statewide Mercury Work Group, is a champion of mercury testing, saying the process will help them reach scientifically sound conclusions on the extent of the mercury problem in the state.

“We base our fish advisories on the kinds of results we see here,” Whitehead says. “The faster we can have the results the quicker we can analyze the problem and, if necessary, get the message if consumption of mercury-tainted fish should be limited in certain reservoirs or streams.” So far, this work has resulted in health alerts issued for three types of fish and two species of duck.

Testing for Mercury

*Health Lab Scientists
Larry Scanlan (right)
and Steven Butala*



At the state health laboratory, scientists Steven Butala and Larry Scanlan take the sample tubes prepared by English and Brown and begin another round of preparations for analysis. Dr. Butala removes a sample from the tube and places it on a cutting board that has been sanitized overnight in acid and cleaned with ultra-pure water.

“We take extraordinary precautions,” Butala says. “This is to assure accuracy in the tests.”

The tissue sample is then loaded onto a nickel boat, weighed and then put into a rotator tray inside the mercury analyzer. In about five minutes, a computer detects any presence of mercury. The absence of mercury is reflected on the computer screen by a flat line. But this sample has small amounts of mercury, indicated by a red line spike on a computer screen.

“We have found mercury in fish as low as 0.03 parts per million to as high as .8 parts per million,” Butala says.

“The health advisory screening value is 0.3 parts per million,” Chaudhuri adds. To put that in perspective, it is equivalent to one inch in about 53 miles. The ultra-sensitivity of the analyzer allows detection of even the minute traces of mercury that pose no health risks.

Because the process is painstaking in its detail – only about 25 samples can be processed at one time – there is a backlog of about 500 fish in the freezer waiting for analyses. It should take another two and a half months to process all the fish. But without the analyzer, sending the samples out for analysis would have resulted in much longer delays.

Scientists have yet to draw any conclusions about patterns of mercury contamination, but they have noted that certain fish from certain waterways have elevated levels of mercury.

“We do see a correlation when we analyze fish taken from certain areas,” Scanlan says. “By the time all 500 samples are done, DEQ will have a better idea of what is out there.”

Each week, English and Brown will deliver to Butala and Scanlan samples from another 50 frozen fish, many of them collected last year. On this particular day in mid February, they were processing fish taken from popular fishing holes in southern and northeastern Utah, as well as Strawberry Reservoir and the Weber River.

“We were involved in the collection of the fish, so we know the fish,” English says. “It’s nice to see them through the testing process.”

Chaudhuri says it is exciting to be part of the new mercury analysis effort, which has also forged professional bonds between Health Department chemists and DEQ environmental scientists.

“We are all working together to solve this problem,” she says. “This is a great example of how state agencies can work together.”

Radiation Control Board Seeks Balanced Representation

Beginning with this issue of “Environmental Connection” we hope to feature one of the Department of Environmental Quality’s Boards. Members are appointed by the Governor, with Senate concurrence. This month’s focus is on the Radiation Control Board.

When Karen Langley was asked eight years ago to consider serving on the state Department of Environmental Quality’s Radiation Control Board, she had her reservations. After all, the 13-member Board, which oversees radiation issues in the state of Utah, confronts tough regulatory issues. “It’s not an easy job,” Langley admits.

But in the end, Langley accepted an appointment by the Governor to serve in a slot reserved for someone in her occupation, a health physicist for the University of Utah’s Department of Radiological Health. Now reaching the end of her second and final term as chair of the board, Langley has no regrets. “I found it was very educational the entire time.”

Dane Finerfrock, director of the Division of Radiation Control and executive secretary to the Board, said the Board is structured so there is balanced representation from industry, academia, government and the public at large. “I really enjoy working with the Board, which does tackle some complex issues,” he said. “Besides regulating low-level radioactive waste sites, Board members also must consider issues that effect uranium mills, medical X-ray users and those who use radioactive materials for commercial, research and industrial purposes.”

Stephen Nelson, vice chairman of the Board, is one of the longest serving members. He said he weighs each issue carefully, trying to determine whether a particular action compromises public health and safety. Of utmost concern, however, is making sure people are heard.

Nelson, a professor of geology at Brigham Young University, says he tries to listen to both sides of an argument. “I take my responsibility seriously in trying to come to the correct and right decision.”

One of the newest members, Joette Langianese, was appointed last July to fill a vacancy reserved for county government. Langianese, a county commissioner for the Grand County Council in Moab, said her interest in the Board came about after her involvement with the state’s efforts to convince Congress and the federal government to move the 13 million tons of radioactive mill tailings away from the Colorado River. “I am learning how the process works and that will help me with the Moab Tailings Project,” she said.

Langianese views her role on the Board as that of representing the citizens. In doing so, however, she tries to keep politics out of the decision-making process. “I’m very sensitive to not bring forward what I think is right or wrong but based on what the regulation states, she said. “That’s a challenge.”

Two new members joined the Board. They are Frank DeRosso and Patrick Cone.

For more information on the Board, visit <http://www.radiationcontrol.utah.gov/>

Utah Businesses Benefit in Being a Clean Utah Partner

Recycling is up and energy consumption is down, all because more and more Utah businesses are doing their share to help the environment under the Clean Utah program – a voluntary initiative that rewards companies for reducing or preventing pollution. The program, designed by a stakeholder group in collaboration with the Department of Environmental Quality (DEQ) and consultation with the U.S. Environmental Protection Agency, has seen a steady increase in participation since the program was officially launched in September 2004. Today there are nine businesses in the program and approval of two others is pending.

“These companies are committed to protecting the environment,” said Dianne Nielson, executive director of DEQ. “We applaud them for their good work and encourage other companies to apply for the Clean Utah program.”

Brad Overmoe, president of Red Hanger Cleaners, which has 14 outlets in Utah, was part of a diverse committee that developed the program several years ago. “The general overall goal is awareness,” he said. “This is a program where DEQ can wear the white hat. If DEQ can get companies to voluntarily become responsible environmental citizens it doesn’t have to spend the money on enforcement. It’s a win, win, win.”

The program is designed as a three-tiered system. At “Entry Level,” businesses are committed to develop an Environmental Management System or EMS that provides a thorough review of its operations. At “Partner Level,” the company is committed to completing projects aimed at improving their environmental performance. Companies then can advance to the “Leader Level,” where even more projects are implemented. DEQ rewards companies for participation by publicly recognizing them for their efforts and potentially fast-tracking their permit applications.

Renette Anderson, the small business ombudsman for DEQ, said the participating companies are committed to go a step beyond the basic requirements of meeting local, state and federal environmental requirements. “More businesses are becoming aware of the economic and environmental advantages in taking a look at what can be done to improve efficiencies,” she said.

Kennecott Land Company, the developers of the Daybreak community in South Jordan, was recently accepted into the program, pledging to develop an EMS to find ways to improve their environmental stewardship.

“Becoming a member of the Clean Utah Program is consistent with Kennecott Land’s commitment to be a leader in environmentally sensitive development,” Kennecott President Peter McMahon said in his application. “Daybreak, Kennecott Land’s first community, is planned around sustainability principles and (it) demonstrates our commitment to water and energy conservation, open space preservation, and developing enduring partnerships in the community. Becoming a Clean Utah member is a key step in building a partnership with the state of Utah and the Department of Environmental Quality, also further demonstrating Kennecott Land’s commitment to environmental stewardship.”

Of the nine businesses and governmental entities accepted into the program, three are working on projects that so far have resulted in cost-saving measures while providing a benefit to the environment. Hexcel Corporation, AutoLiv and La-Z-Boy are at “Partner Level” where they are in the process of implementing projects identified in their EMS.

Red Hanger Cleaners, Tooele Army Depot, ModusLink, Park City Building Department, Kennecott Land and Bambara Restaurant are participating in the program at the “Entry Level.”

Clean Utah is designed to be flexible, Overmoe said. “If I stay at the Entry Level, that’s OK,” he said. “My primary goal is that I want to do what’s right for my company and for the environment.”

Recycling On the Incline

Since 2004, La-Z-Boy Utah, which manufactures upholstered furniture for its retail outlets nationwide at its Tremonton facility, has consistently reduced its trash that ended up in the landfill each year. The company saw its biggest waste reduction jump in 2005 by 22 percent over the previous year, saving about \$28,800 in landfill fees. Although the company had been recycling many products for years, employees discovered more could be done after completing an EMS. Rocky Mountain Recycling picks up the company’s plastics, pop bottles, paper and cardboard. Pallets are recycled through Pallets of Utah, and scrap metal is recycled through Valley Metal. Even the sawdust is sent to a livestock dealer to use as livestock bedding.

“The total amount of waste generated in 2005 was 6.7 million pounds,” said Norm Davis, facility engineer for La-Z-Boy. “We recycled 80 percent of that.”

The benefits are clear, he added. “It has increased the environmental awareness of people in the plant. Although it hasn’t been without some costs, overall we realized we are making a little on the recycling,” Davis said.

Consider these other successes:

Autoliv, the world’s largest automotive safety supplier of airbags, seat belts and other devices developed and tested at its Ogden Technical Center, had been disposing of about 4,400 pounds of nylon and silicon coated fabric in the landfill each month. After some research, the company found a recycling vendor. Now all of its fabric is being collected and managed by Pro Baler Services/Interwest Paper in Murray, who ships the materials to China where it is used for textiles.

Last year, Hexel Corporation, an aerospace materials manufacturer in West Valley, increased its recycling to 2 million pounds annually – up from 1.6 million pounds – by integrating a plant-wide recycling program. Staff is encouraged to recycle wooden pallets, rolls of paper, poly film, empty steel drums and industrial solvents, thereby reducing waste and disposal costs.

Energy Efficiencies

La-Z-Boy is also committed to becoming energy efficient by working with Utah Power to conduct an energy study of the plant. It has already enhanced the facility’s energy efficiency by replacing its air conditioning system from an inefficient steam-absorption chiller to a more efficient electric one last year. The result has been a substantial 67 percent decrease in air pollution over the calendar year,

and a 41 percent decrease in natural gas use from 2003 to 2004. In 2005 natural gas consumption was cut another 18.4 percent.

Davis is looking at future energy savings projects. "One of the things I'd like to do is go through the offices and upgrade the lighting system to help cut down on electric use," he said.

Hexel, too, realized a substantial benefit by reducing its steam consumption by 10 percent. By replacing old inefficient steam equipment, the plant has been able to conserve 502,000 gallons of water and reduce air pollution by decreasing the amount of natural gas it uses.

More information and an application is available at www.deq.utah.gov/cleanutah/.

Utah Water Systems Work to Meet New Arsenic Rule

The vast majority of Utah's drinking water systems comply with the U.S. Environmental Protection Agency's new regulations for arsenic levels. And the water utilities that don't have been getting a helping hand from state environmental regulators, who are working with them to meet the tougher standard that went into effect on January 23, 2006.

In recent months, the Drinking Water Board has granted three-year extensions to 32 water utilities to allow them more time to meet the new standard of 10 parts per billion (ppb) arsenic in drinking water – much lower than the 50 ppb once considered safe to drink. The utilities are required to submit semi-annual reports so the Board can monitor their progress.

"We recognize the need to grant additional time to help those water utilities potentially faced with a huge capital expense," said Kevin Brown, director of the Department of Environmental Quality's Division of Drinking Water (DDW).

For the past two years, the Division has been working with water utilities outlining strategies to enable them to meet the new standard. The options include abandoning the high-arsenic sources, or blending water from low-arsenic wells with water from those with higher readings. The Division also has worked with utilities to allow them to purchase filtration devices that fit on the homeowners' faucet or develop alternative sources of water. Some districts have installed source water treatment systems.

EPA did find evidence to suggest that high levels of arsenic were making people sick, said Ken Bousfield, compliance manager for DDW. "This evidence came from studies of water users in Taiwan and Chile and showed increased levels of bladder and skin cancers." A 1999 study in Utah's Millard County showed exposures to high levels of arsenic did not produce those health impacts. "Higher rates of bladder and skin cancers were not found in the western Millard County study," Bousfield said. "Nor were high rates of hypertension or prostate cancers found in the Taiwan and Chile studies."

Arsenic is a naturally occurring contaminant that leaches into the groundwater from the surrounding rock. Although high concentrations of arsenic in drinking water are most often found associated with higher concentrations of metals, such as near past or present mining operations, arsenic concentrations can vary greatly from well to well in the same area. It can even change in the same well over time, according to Don Lore, an environmental scientist with DDW.

In 2001, when EPA proposed the new 10 ppb standard, DDW identified 86 water systems that would be impacted. The standard was put on hold when President Bush took office to enable additional review of the science behind the new standard. Eventually that hold was lifted and water systems were ordered to be in compliance by January 2006.

“In anticipation of this rule, we identified systems that could have problems and invited them to a number of training events,” Bousfield said. “We tried to direct water systems to the least-costly alternatives, and we have been aggressive in doing that. But there is the nagging issue of the cost ultimately being passed onto the customers.”

Magna really got serious about its arsenic problem, developing a central treatment facility that addresses not only arsenic but other contaminants as well. In order to pay for it, voters approved an \$18 million bond. “Magna found a silver bullet,” Bousfield said. “The city is able to treat for arsenic, reduce total dissolved solids and address a future regulatory issue of perchlorate in a single treatment scheme.”

Park City, which had some of the highest arsenic in the state, opted to install a \$3.7 million treatment technology that now has reduced the arsenic to one of the lowest levels in the state, at measurements of 2 ppb.

“Water utilities have taken different approaches,” Brown noted. “We tried to be flexible enough to allow them to develop their own solutions to meeting the new rule.”