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DRINKING WATER NEEDS AND INFRASTRUCTURE

HEARING

BEFORE THE

SUBCOMMITTEE ON ENVIRONMENT AND HAZARDOUS MATERIALS

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

ONE HUNDRED SEVENTH CONGRESS

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DRINKING WATER NEEDS AND INFRASTRUCTURE

WEDNESDAY, MARCH 28, 2001

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON ENVIRONMENT
AND HAZARDOUS MATERIALS,
Washington, DC.

The subcommittee met, pursuant to notice, at 2:10 p.m., in room 2123, Rayburn House Office Building, Hon. Paul Gillmor (chairman) presiding.

Members present: Representatives Gillmor, Shimkus, Wilson, Pitts, Bono, Walden, Terry, Bass, Tauzin (ex officio), Pallone, Brown, McCarthy, Barrett, Luther, Capps, Waxman, and Dingell (ex officio).

Also present: Representative Engel.

Staff present: Jerry Couri, policy coordinator; Bob Meyers, majority counsel; Peter Kielty, legislative clerk; Dick Frandsen, minority counsel; and Dave Schooler, minority general counsel.

Mr. GILLMOR. The subcommittee will now come to order. The Chair recognizes himself for 5 minutes for the purposes of delivering an opening statement. I want to welcome our panelists today, particularly Governor Whitman, the Administrator of EPA, who is appearing before us for the second time before this subcommittee.

Today's hearing focuses on the pressing needs of drinking water systems across the country. Provision of safe drinking water is one of the highest environmental duties that we as a Congress could undertake.

Water quality directly relates to the future health and well being of our population, and this should come as no surprise to anyone who has been told by their doctor to drink more water, or who has had to live under the effects of a water contaminant advisory.

One of the benefits of living in this country is that over 76,000 water systems have taken great pains to construct networks that deliver safe and affordable water. This luxury is not available in every place throughout the world, as the Health and Environment Subcommittee examined last year.

As the committee of sole jurisdiction over drinking water programs, we need to work diligently to ensure that a high standard of health protection continues. The dictionary definition of clean drinking water is that which is free from foreign matter or pollution, and not infected.

And I believe that underscores the root goals of the Safe Drinking Water Act; to help guide communities in a way that will protect

their drinking water from organism that could cause otherwise healthy people to become ill. Without the provisions of the Act, which help build pipes and direct disinfection efforts, public health would be seriously at risk.

The Safe Drinking Water Act of 1996 required the U.S. Environmental Protection Agency to survey the needs of water systems every 4 years, and I believe that anyone who has taken the time to carefully look at this matter understands that the pursuit of cleaner drinking water in local communities demands additional resources.

Local and State taxes can be raised to meet those obligations, but it is really the Revolving Loan Fund under the 1996 Act that helps localities afford safe drinking water. As someone who has been a long supporter of funding Federal mandates on local and State governments, I believe that the SRF is crucial to providing Federal resources to entities trying to comply with Federal Standards and protect public health.

Today's witnesses will help us better understand the drinking water needs of communities across our country. Following up on the recently released EPA's drinking water needs assessment, we will have the Administrator tell us about the needs of systems across our country that are trying to ensure that water is disease and contaminant free.

Later, we will have representatives from the Congressional Budget Office, environmental groups, and drinking water associations to enlighten us on their past work and future financial requirements.

I recognize that many members of our panel have varying concerns about contaminants regulated under the Safe Drinking Water Act, particularly arsenic, and I share your views that our Nation has drinking water standards that are protective of human health and the environment.

In fact, our committee has had a long dialog with the EPA on this matter, and members may be assured that I will continue to monitor the effort. Our hearing today has been set up under bipartisan agreement of staff, to focus solely on drinking water needs.

That being said, I would intend to exercise our committee's authority as chairman of the subcommittee to review EPA's implementation of the Drinking Water Act, and its work on all contaminant levels and standard setting.

I want to thank the witnesses for coming to our panel, and I want to thank Mr. Pallone for his staff's cooperation in setting up this hearing. It is vital that we assess where drinking water system needs lie.

The EPA currently believes that $102 billion is immediately needed by all sizes and forms of systems, and that another $50 bill will be required over the next 20 years to guarantee that safe drinking water reaches those who need it.

Certainly, just putting pipes into the ground to deliver this water is not enough. The emphasis on this extra funding needs to be on a comprehensive public health campaign that seeks to mobilize public and private resources to purify water from its initial source through its distribution channels, and finally out to tap.

Let me just add one short story in closing. Yesterday's Washington Post ran a piece in its "Style" section on Hollywood Producer Mike Medavoy, who was at a swank Beverly Hills cocktail party last Friday night.

And he said that he and everyone that he knew is unaffected by drinking water contaminants "because we all drink Evian." And when asked about people who could not afford Evian, he announced, "well, they should drink Pellegrino."

Well, I guess that some people's attitude in Hollywood is not much different than Marie Antoinette's. But I believe that we should not be forced into making safe drinking water a luxury for the monied classes, but it ought to be something available for all people in our country.

And at this point, I am very pleased to recognize the ranking member of our panel, Mr. Pallone, of New Jersey, for the purpose of making an opening statement.

Mr. PALLONE. Thank you, Mr. Chairman, and I want to thank you again for holding this important hearing. The delivery of safe drinking water is obviously an issue of the utmost importance and an issue that warrants immediate attention, as this topic continues to be exploited at the Congressional level.

I did want to mention that I hope that the organizations seeking more funding will respect the clear jurisdictional divisions between the safe Drinking Water Act and the Clean Water Act. Otherwise, our efforts will not likely succeed.

And we are going to hear today from a number of panelists, but I believe the message will be clear and consistent from each; the need for updates and improvements in our drinking water infrastructure is great.

Congress must act now to renew its commitment to America's drinking water resources. I am particularly looking forward to hearing from Administrator Whitman on Panel One today.

And I have to say, Mrs. Whitman, that if I call you Governor, you have to forgive me, instead of Administrator, because once a Governor, always a Governor. So I may keep doing that. But keeping in line with the health and safety of our drinking water, I want to highlight my concerns about the administration's latest actions regarding arsenic.

The proposal to reduce the acceptable amount of arsenic in drinking water from a level of 50 parts per billion to 10 parts per billion is not too much to ask. The European Union and the World Health Organization have adopted a standard of 10 parts per billion.

As a matter of fact, when Governor Whitman was serving as Governor in New Jersey, our State Department of Environmental Protection supported a level of 10 parts per billion, or even less, and I know that you have previously supported that standard.

And just to give you an idea—and again I am using my own State as an example—after the EPA decided that they were not going to use the 10 parts per billion, at least for now, this was from Asbury Park Press in my District.

"The State Department of Environmental Protection of New Jersey said they still plan to set a 10 parts per billion limit. We certainly do not want 50 parts per billion as a standard," said Eileen

Murphy, Assistant Secretary of the DEP's Division of Science, Research, and Technology, commenting on the EPA's decision. "That should have been changed years ago. This is not a good thing for EPA to have done."

So obviously I am not happy. I am hoping that Governor Whitman will give us some indication of why that was changed. I say this because we are talking about a substance that the EPA itself said can cause bladder, lung, skin, and other kinds of cancer.

The prior standard for arsenic in drinking water was developed in 1942. I know that Administrator Whitman pointed to the fact that the science was not available to back up the change to 10 parts per billion.

But again we had this study by the National Academy of Sciences, one of the most distinguished scientific bodies referred to by Congress, and they state that exposure to arsenic at the level of the current standard, 50 parts per billion could easily result in a combined cancer risk on the order of 1 in 10.

That level of risk is much higher than the maximum cancer risk typically allowed by Safe Drinking Water Act standards. I guess I just don't buy this idea that the science is not there. I really do not think that the question is the science. I think it is the special interests.

I think there are a number of special interests within the administration that did not find the new standard acceptable. It was interesting that the very day that the EPA announced that it was not going to use the 10 parts per billion, there was an article in the Washington Post that talked about the American Timber Institute going into see the President or somebody else at the White House, saying that they could not live with this because they could not—you know, they were using arsenic and painting boards that were used for docks or boardwalks or whatever, and it was going to hurt them in their business.

The other thing that I want to say to the Governor and with regard to this decision on arsenic regulations, is that I am not just concerned about the standards. I am concerned about the infrastructure. That is the purpose of the hearing today.

And after reviewing Mrs. Whitman's statement, it was clear that the EPA recognizes the significant needs of our Nation's drinking water infrastructure. But if we all agree that there is a massive shortfall in resources available for water systems to upgrade, and replace, and expand infrastructure, I would like to know whether President Bush plans to do anything about it.

You know, we have the budget on the floor today. Is the budget, the President's budget, going to meet these needs. Is he going to be appropriating or suggesting that more money be available for the infrastructure.

There is a problem with enforcement also with regard to safe drinking water standards. Is the budget going to request more money so we can enforce even the existing standards, and find out when there is non-compliance.

Again, there is a huge discrepancy between what we are hearing today on all sides on a bipartisan basis about what the needs are, even from the EPA in the statements, as opposed to what level of funding is actually going to be available.

And I seriously question whether this administration is going to provide the additional funding given what they are doing with the budget, and the tax cuts, and the magnitude of the tax cuts that are going to be using up a large part of the surplus.

The other thing that I want to say is that I believe very strongly, Mr. Chairman, that the Federal Government has to make this investment, and it has to make an investment in safe drinking water infrastructure a national priority, and that of course begins here in this subcommittee.

We have to face the fact that if the Federal Government does not do it, the State and towns do not have the money to do it. My Governor, I'm sure, knows that from her own experience as a Governor, and the State cannot make up this shortfall, and that means that the ratepayers are going to have to make it up if the Federal Government does not provide the funds.

So what I am asking is that there be a significantly enhanced Federal role in providing assistance for drinking water infrastructure. Otherwise the critical investments are not likely to be made, or they are going to be made at costs strictly to the ratepayers.

And whether the solutions, whether it is grants, trust funds, loans, and incentives for private investment, we can certainly discuss that. The bottom line is that we need a significant investment of Federal dollars, and I would like to know again whether we are going to see that from this administration in the budget, or in the proposals on the appropriations level over the next fiscal year.

Thank you, Mr. Chairman, and again I want to thank you for cooperating with us and in making the presentations today, the panels, and working with our staffs.

Mr. GILLMOR. Thank you, Mr. Pallone. The Chair recognizes the gentleman from Illinois, Mr. Shimkus, for an opening statement.

Mr. SHIMKUS. Thank you, Mr. Chairman, and I will just be brief. We are going to hear a lot from my friends about obviously the arsenic decision, but what I want to say is that we had 8 years of a previous administration who dropped this rule as they were going out the door, probably because they couldn't get their own side to help them move legislation or the process through and so they waited until the end.

I think it is very credible to make sure that we are doing the right thing, and I have full faith and credit in your desire to uphold the safe drinking water standards of our citizens.

I will just say on—and so I hope that we do not have to get all emotional. We can just get down to facts and realize that we have to base our decisions on science and not on emotions. Senator Miller, when he came to Washington, was quote as saying, "I use it all the time now."

Washington, DC is the only place where the election is never over, and here is a former Governor of a State saying that, and that is so true in this city, and I think we are going to hear some of that today.

Administrator, my concern and questions are going to be on rural America and rural parts of my district. Even without higher standards, we still have parts in the rural United States where even under the current standards we don't have safe drinking water.

I mean, I have still got farmers who are going into town loading up their water in the back of a pickup and driving it home, and that is not uncommon, I'm sure, even in some of the rural parts of New Jersey. There may be some of that still.

Through U.S.D.A. and rural development, they made a great effort to leverage with local water districts and the like to get usable clean water out to rural Illinois, and what I would like the EPA to look at is how you can all partner with those existing programs through U.S.D.A., and cross over these administrative boundary lines.

And also with the States, and with what they have locally, because that is of concern to the 20th District of Illinois, and I appreciate you being here, and with that, Mr. Chairman, I yield back my time.

Mr. GILLMOR. Thank you very much. The ranking member of the full committee, Mr. Dingell.

Mr. DINGELL. Mr. Chairman, I thank you, and I commend you for holding today's hearings on the Capital Investment needs of American's public water systems. These infrastructures are vital to protect the public health and provide safe drinking water for our citizens.

Last month, EPA reported that the current needs to ensure provision of safe drinking water to our people are $102.5 billion and growing, a huge sum of money. Billions more were documented as necessary for future years, and the EPA has acknowledged that its estimates are in fact conservative.

The funding to reduce aging pipes, facilities, and other parts of our water infrastructure systems is a critical issue for the city of Detroit, where pipes were first installed in 1887, over 100 years ago, are still being used.

Mr. Chairman, this is not a partisan issue. It is thoroughly bipartisan, and I am pleased that addressing water infrastructure funding to protect public health is a priority of this subcommittee.

For the administration of those who are seeking increased funding, I would advise them to keep in mind that drinking water infrastructure funding lies in the exclusive jurisdiction of the Committee on Energy and Commerce under the Safe Drinking Water Act.

Matters relative to waste water funding under the Clean Water Act have traditionally been dealt with by the Transportation Committee. Failure to work each committee in proper fashion will not achieve the worthier goal of obtaining increased funding for our water infrastructure needs.

One of the purposes of the State revolving fund program created by the Safe Drinking Water Act amendments of 1996 was to assist drinking water systems to comply with the cost of new protective standards, such as the arsenic standard.

Since 1996, EPA drinking water State revolving fund program has made available over $3.6 billion to assist drinking water systems, but contrast that if you will to a need of $102.5 billion, and you will find that we have much to do.

Also in 1996, this committee on a bipartisan basis mandated that EPA promulgate new drinking water standards for arsenic within 5 years. And if my $40 calendar watch tells me correctly, that 5 years is about up.

I believe that the Bush Administration's recent announcement to delay or withdraw the new arsenic standards of 10 parts per billion is a serious mistake, one which jeopardizes the health of the American people, and one which Administrator Whitman will come to regret.

Americans should not be subject to health risks from arsenic in their drinking water, and I note that arsenic is a deadly poison that exceed those of other developed nations, and that exceed levels recommended by the World Health Organization.

The EPA has found that long term exposure to low concentrations of arsenic in drinking water can lead to skin, bladder, lung, and prostate cancer, cardiovascular disease, diabetes, and reproductive and adverse neurological effects.

I support sound science, but not those who use the term as a shibboleth for more delay in changing the current unprotective arsenic standard. Thank you, Mr. Chairman. I look forward to the testimony of our witnesses, with some emphasis on the subject of arsenic and why the change was made.

Mr. GILLMOR. Thank you very much, Mr. Dingell. The Chair would also point out that the focus of our hearing today is the funding needs of drinking water systems, which is an item as the ranking member pointed out exclusively under our jurisdiction.

I know that a lot of people may want to talk about arsenic, and there is free speech, and so people can talk about whatever they want. But as I indicated in my opening statement, arsenic really deals with standards, and not needs and infrastructure.

We hope to get into that later, and I would point out that the witnesses, under bipartisan agreement, when we asked them to come today, had only been asked to talk upon the needs subject.

So recognizing that it is impossible for it to work that way, the Chair would still request that the members try to stick to the agenda as much as possible. The gentlelady from New Mexico, Mrs. Wilson.

Mrs. WILSON. Thank you, Mr. Chairman. With that admonition, I would start out by saying that the first form of self-government in the State of New Mexico after the Spanish settled over 400 years ago was not the town hall meeting, and it was not the parish church.

It was the acequia commissions, and acequias are ditches, and where we get our water from, and where we still get our water from today as we irrigate up and down the Rio Grande Valley.

And in the American West, water is a big issue, and in some ways it is the issue for everyone. It is kid of a—it is so serious that you often find folks on ditches with shotguns to keep everybody else from the ditches.

It has been a serious issue throughout the history of the West, and it is a very important issue as we look at the development of the West to make sure that safe drinking water is available.

In this country, 60 percent of our water supply is deemed drinkable, which is a big deal. Not many countries have achieved that, but it also means that 40 percent is not, and there is much left to do with respect to infrastructure.

I also want to say something about arsenic in response to my colleague from New Jersey, and that is that the State of New Mexico

has one of the highest naturally occurring arsenic levels in the water because we are a volcanic State.

The water comes out of the ground with high levels of arsenic, and we don't have much timber industry. So the concern is not what industry wants, but the fact is that in New Mexico we have been drinking this water for generations, and many of the public health effects that people fear are actually lower in New Mexico, including the instances of things like bladder cancer and so forth.

So if you look at the public health issues impacts, I can only conclude from those two things that there is missing data at those levels below 50 parts per billion that we need to gather, or that green chile is the natural antidote to arsenic.

But with respect to arsenic, the real issue for us is this. If we are to change the arsenic standard for public health reasons, that is an investment just in capital costs alone of probably three-quarters of a billion dollars in New Mexico.

I can think of a lot of ways to impact public health with $750 million, whether it is the vaccination of children, improvement of water and waste water. There are public policy decisions that we have to make on where we spend the marginal dollars making an impact.

And when I don't see the public health evidence that tells me that we know what that level should be, between 5 and 50 parts per billion, it is hard for me to say that that is the right way to spend the money. And that is the issue for those of us in the Southwest. Thank you.

Mr. GILLMOR. Thank you. The Chair recognizes the gentleman from California, Mr. Waxman.

Mr. WAXMAN. Thank you very much, Mr. Chairman. I was Chairman of the Health and the Environment Subcommittee 15 years ago, and as such, I was one of the leaders in writing the 1986 Safe Drinking Water Act.

And 5 years ago, I was the ranking member on the Health and the Environment Subcommittee when we did the 1996 drinking water amendments. So I have some experience with these drinking water issues, and that's why I was particularly disappointed with the Bush Administration's first drinking water action, this action to revoke the arsenic standard.

That decision has left most Americans scratching their heads in puzzlement to try to figure out why the Bush Administration wants more arsenic in drinking water. Meanwhile, mining and chemical lobbyists are celebrating.

Now, this weekend in my District in Hollywood, we had the Academy Awards, and that got me to thinking. We should have some awards here in Washington to recognize truly remarkable performances in lobbying that result in mind-boggling government decisions.

So I have modestly decided to initiate a new award called the Golden Jackpot, and I have a Golden Jackpot here which has in it coins, but they are candy coins. This award is something that I think from time to time I will be giving out to recognize particularly indefensible and outrageous windfall given to special interest groups.

And today we have three outstanding nominees; starting with President Bush's decision to break his campaign promise to curve carbon dioxide emissions. The President's decision was made possible by an all-out pressure from the oil and the coal industries.

Not only was this the first campaign promise that the President broke, but for good measure, it jeopardizes the international effort to combat global warming. It has everything that a jackpot nominee needs to win.

The second nominee is Congress' decision to repeal at the request of the Bush Administration's ergonomics rule. This is an important work safety rule which was put into effect over a long deliberation for a decade.

The Chamber of Commerce, the National Association of Manufacturers, pulled out all the stops on this one, and it is an example of special interests being the real interests of thousands of workers, whether they be store clerks, meat packers, or nursing home aides.

And the third nominee is President Bush's and Administrator Whitman's decision to revoke these arsenic standards. Here the mining and the chemical industries gave an unforgettable performance, and repeal means that dangerous levels of arsenic will remain in the drinking water of millions of American families.

Well, all of these as they say at the Academy Awards are real winners. But the envelope, and the award I believe should go to EPA's decision to revoke the arsenic standard, and therefore I am going to give to the Governor the Golden Jackpot Award on behalf of the Bush Administration. It was not a difficult decision——

Mr. TERRY. Would the gentleman yield?

Mr. WAXMAN. And to stop telling the American people that they need more arsenic in their drinking water. Governor Whitman, my time is about up, but I wanted you to accept——

Mr. TERRY. Would the gentleman yield?

Mr. WAXMAN. [continuing] this award on behalf of the administration, and maybe you will even enjoy eating some of these chocolates. But in 1996, we asked for a tighter arsenic standard, because we wanted to protect the American people.

We should invest in trying to prevent disease. I don't know whether they are going to spend the money in New Mexico, but they should not be spending money to invest in how to cure arsenic poisoning if we can make an investment in our water systems that will keep people healthy, and prevent a pollutant that can cause cancer and other problems.

EPA has set the standard under the mandate of the law by January 1 of 2001, and this administration deserves this Golden Jackpot Award for repealing it, and I think harm to the public interest as a result.

[The prepared statement of Hon. Henry A. Waxman follows:]

PREPARED STATEMENT OF HON. HENRY A. WAXMAN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. Chairman, fifteen years ago, as Chairman of the Health and the Environment Subcommittee, I was one of the leaders in writing the 1986 Safe Drinking Water Act. And five years ago, as the Ranking Democrat on that Subcommittee, I was one of the leaders in writing the 1996 Safe Drinking Water Act. So I have some experience with drinking water issues.

That's why I was particularly disappointed with the Bush Administration's first drinking water action: it's decision to revoke the arsenic standard. That decision has

left most Americans scratching their heads trying to figure out why the Bush Administration wants more arsenic in drinking water. Meanwhile, mining and chemical lobbyists are celebrating.

Now this weekend in Hollywood, as everyone knows, the Academy Awards were held. That got me to thinking that we should have some award here in Washington to recognize truly remarkable performances in lobbying that result in mind-boggling government decisions. So I've modestly decided to initiate a new award, called the "Golden Jackpot." The award is a golden jackpot filled with chocolate gold and silver coins.

From time to time I'll be giving this award to recognize a particularly indefensible and outrageous windfall given to a special interest group.

Today, we have three outstanding nominees, starting with President Bush's decision to break his campaign promise to curb carbon dioxide emissions. The President's decision was made possible by an all-out pressure campaign by oil and coal companies. Not only was this the first campaign promise the President broke, but for good measure it jeopardizes the international effort to combat global warming. It has everything a jackpot nominee needs to win.

The second nominee is Congress' decision to repeal the ergonomics rule, the most important workplace safety regulation in the last decade. The Chamber of Commerce and the National Association of Manufacturers pulled out all the stops on this one. It is a memorable example of special interests beating the real interests of thousands of workers, such as store clerks, meatpackers, and nursing home aides.

And the third nominee is President Bush's and Governor Whitman's decision to revoke the arsenic standard. Here, the mining and chemical industries gave an unforgettable performance, and repeal means that dangerous levels of arsenic will remain in the drinking water of millions of American families.

As they say during the Academy Awards, there is no loser among this group. All of the special interests involved—the oil industry, the manufacturers, the mining companies—received extraordinary windfalls from official action by the Administration or Congress.

Now, Price/Waterhouse have not audited the results, but I do have an envelope with the winner. And . . . the Golden Jackpot goes to EPA's decision to revoke the arsenic standard. It was a difficult decision, but it's tough to beat telling the American people that they need more arsenic in their drinking water.

Governor Whitman, after the hearing you'll have the opportunity to accept the Golden Jackpot on behalf of the Bush Administration. You might disagree with the judges' decision, but I hope you at least enjoy the chocolate that goes with the prize.

You know, back in 1996, the science was clear that we needed a tighter standard for arsenic, and efforts to revise the safety level had already been debated for years. But the industry argued that reducing arsenic would be too expensive and that more study was needed. So we reached a compromise. We required EPA to issue a new regulation—after even more study—by January 1, 2001.

After the law was passed, EPA commissioned a comprehensive study by the National Academy of Sciences, which found that EPA should lower the standard "as promptly as possible." And in January 2001, former EPA Administrator Carol Browner finally issued the new standard—just as this Committee had directed and the science dictated.

It makes absolutely no sense to undo the new arsenic standard, and I will soon be introducing legislation to make sure every American is protected from this unnecessary risk.

Mr. GILLMOR. The gentleman's time has expired. When I was a very young State Senator in Ohio, by our desks we had spittoons, and those all disappeared as they became collectors items, and nobody knew where they went, but it looks a lot like that.

Mr. WAXMAN. Well, this is the Golden Jackpot award, and the first time it has been given out. I hope that it is the last, but I expect with this administration in just this short 3 months that we are going to have a lot of examples of Golden Jackpots for special interests winning out over the public interest.

Mr. GILLMOR. The Chair at this point would like to lay before the committee a letter that he has received from the Small Business Administration that was sent to the EPA, talking about its very strong support of the administration's action in this, of the EPA and the current Administrator's action, and pointing out that the

average cost to households in the smallest systems would have exceeded $320 a year.

I would ask for unanimous consent simply to enter the letter in the record.

Mr. WAXMAN. Reserving the right to object, would the chairman also agree to put in the National Academy of Science's report on why the arsenic in drinking water ought to be in their words, "promptly reduced as promptly as possible in order to protect the public health."

Mr. GILLMOR. It would be very difficult for me to do that since I don't have it with me here, but we would also be happy to entertain a summary of that going in if the gentleman from California would like to present it.

We probably could not take the whole report into the record simply as a model of volume. If you would like to present a summary, we would be happy to do it.

Mr. WAXMAN. I would be pleased to do that.

Mr. GILLMOR. Very good.

Mr. WAXMAN. I withdraw my objection.

Mr. BROWN. I would like to also submit for the record the standards suggested by the World Health Organization also.

Mr. GILLMOR. The members may do that at any point. We would be happy to have them do that. Without objection then, the Chair—does the gentleman from California withdraw his objection?

Mr. WAXMAN. I withdraw my objection.

Mr. GILLMOR. Without objection then, the letter will be entered in the record.

[The material referred to follows:]

U.S. SMALL BUSINESS ADMINISTRATION
March 27, 2001

The Honorable CHRISTINE TODD WHITMAN
Administrator
U.S. Environmental Protection Agency
Ariel Rios Building
1200 Pennsylvania Avenue, N.W.
Washington, DC 20460

Subject: EPA Review of Safe Drinking Water Standard

DEAR ADMINISTRATOR WHITMAN: We are writing in support of your recent decision to revisit the 10 ppb arsenic standard that was promulgated in January of this year. The Office of Advocacy of the U.S. Small Business Administration was established by Congress pursuant to Pub. L. 94-305 to represent the views of small business before Federal agencies and Congress. One of the primary functions of the office is to measure the costs and other effects of Government regulation on small businesses and make recommendations for eliminating excessive or unnecessary regulation of small businesses.

We strongly agree that the Environmental Protection Agency (EPA) should take time to carefully examine the various issues involved in the establishment of this Safe Drinking Water Act standard. In our review of the record last year, we concluded that the science and cost evidence did not justify the 10 ppb standard at that time. We support the swift implementation of an interim final regulation, pending the establishment of an arsenic standard that can be supported by the science evaluations still underway at EPA. We would retain the current schedule for implementation in the final rule (effective in 2006). Thus, the new rule would not cause any reduction in public health benefits over the January final rule.

In 1999, the Office of Advocacy, Office of Management and Budget, and EPA participated in a Small Business Regulatory Enforcement Fairness Act (SBREFA) panel regarding arsenic in drinking water. During the Panel, Advocacy supported lowering the arsenic standard to a level that is protective of public health. Questions were raised about the costs and benefits of lowering the arsenic standard (Maximum Con-

tainment Limit) from the current 50 ppb to a much lower standard. To do so would be expensive for small water systems. National costs would exceed $180 million annually, by EPA's estimate. The average costs to households in the smallest systems (under 100 persons served) would exceed $320 per year. Hundreds of small systems, predominantly in poorer rural America, would be forced to bear the costs of this rule with undemonstrated benefits.

The EPA Science Advisory Board (SAB) noted numerous factors that would lead EPA to an overestimate of the health risks by using high concentration risk data from the Taiwanese population, which has different nutritional ,selenium, zinc and arsenic food intake characteristics than the U.S. population. In addition, in the only large scale study of arsenic exposure in the U.S., the SAB found "no evidence of either bladder or lung cancer where mean drinking water concentrations approached 200 ppb. While these concentrations are up to an order of magnitude lower than found in sites where positive associations with cancer have been obtained, these results give rise to significant questions about whether the Taiwan data apply quantitatively to those U.S. populations that have a more adequate nutritional status." SAB Report at 30. Thus, there is no direct evidence that U.S. citizens would experience any excess bladder or lung cancers due to arsenic exposure at the concentrations found in the U.S.

Further, both the NRC and the SAB suggested that the risk at lower levels found in the U.S. would be significantly less than the risk indicated by the default linear extrapolation model employed by EPA. While both agree that the burden of proof of existence of these nonlinear modes of action had not been met, and EPA properly employed the model in the risk estimates, both agreed that the risk was significantly overestimated in this regard.

As the SBREFA panel stated, it would be poor public policy to set a standard that was too low, require water utilities to make the considerable investment in treatment capacity, only to learn too late that the arsenic effects at low levels were considerably smaller or non existent. The SAB advocated a phased standard setting approach, which would establish an interim standard protecting the higher risk populations that would be superseded after a period of additional research and analysis. SAB Report at 39. We agree wholeheartedly with the SAB phased approach. A phased approach would allow the arsenic research to proceed and avoid waste of taxpayer and rate payer resources.

A higher standard would be sound public policy. It would be consistent with the Safe Drinking Water Act Provision allowing EPA to select a less stringent standard that "maximizes health risk reduction benefits at a cost that is justified by the benefits."

We look forward to working with EPA and interested parties in the expeditious promulgation of a new standard that would address the health needs of our Nation, without unnecessary damage to small water companies, small communities, and our citizens in rural America.

Sincerely,

SUSAN M. WALTHALL
Acting Chief Counsel for Advocacy

Executive Summary

THE Safe Drinking Water Act (SDWA) directs the U.S. Environmental Protection Agency (EPA) to establish national standards for contaminants in public drinking-water supplies. Enforceable standards are to be set at concentrations at which no adverse health effects in humans are expected to occur and for which there are adequate margins of safety. Enforceable standards are standards that can be achieved with the use of the best technology available.

Arsenic is a naturally occurring element present in the environment in both inorganic and organic forms. Inorganic arsenic is considered to be the most toxic form of the element and is found in groundwater and surface water, as well as in many foods. A wide variety of adverse health effects, including skin and internal cancers and cardiovascular and neurological effects, have been attributed to chronic arsenic exposure, primarily from drinking water. EPA's interim maximum contaminant level (MCL) for arsenic in drinking water is 50 micrograms per liter (μg/L). Under the 1996 SDWA amendments, EPA is required to propose a standard (an MCL) for arsenic in drinking water by January 2000 and finalize it by January 2001.

THE CHARGE TO THE SUBCOMMITTEE

In 1996, EPA's Office of Water requested that the National Research Council (NRC) independently review the arsenic toxicity data base and evaluate the scientific validity of EPA's 1988 risk assessment for arsenic in drinking water. The NRC assigned this project to the Committee on Toxicology (COT), which convened the Subcommittee on Arsenic in Drinking Water, whose membership includes experts in toxicology, pharmacology, pathology, chemistry, nutrition, medicine, epidemiology, risk assessment, and biostatistics. The subcommittee was charged with the following tasks: (1) review EPA's characterization of human health risks from ingestion of arsenic compounds found in food and drinking water and the uncertainties associated with that characterization; (2) review available data on cancer and noncancer health effects from exposure to arsenic compounds in drinking water and the implications of these effects on the assessment of the human health risks from arsenic exposure; (3) review data on the toxicokinetics, metabolism, and mechanism or mode of action of arsenic and ascertain how these data could assist in assessing human health risks from drinking-water exposures; and (4) identify research priorities to fill data gaps. EPA did not request, nor did the subcommittee endeavor to provide, a formal risk assessment for arsenic in drinking water.

THE SUBCOMMITTEE'S APPROACH TO ITS CHARGE

The subcommittee evaluated data relating to key elements of the risk-assessment process—hazard identification, dose response, and risk characterization—that addresses the protective nature of the current MCL. Specifically, the subcommittee reviewed information on the health effects of arsenic exposure and data on the disposition and the mechanism or mode of action of arsenic. The subcommittee also evaluated other information that could affect the risk assessment, such as variations in human susceptibility, and current capabilities to measure arsenic in various media, including biological tissues. The major conclusions and recommendations of the subcommittee in each of those areas are discussed in the remainder of this summary. The implications of these findings on the assessment of human health risk is provided below in the section on risk characterization.

THE SUBCOMMITTEE'S EVALUATION

Health Effects

The subcommittee concludes that there is sufficient evidence from human epidemiological studies in Taiwan, Chile, and Argentina that chronic ingestion of inorganic arsenic causes bladder and lung cancer, as well as skin cancer. With minor exceptions, epidemiological studies for cancer are based on populations exposed to arsenic concentrations in drinking water of at least several hundred micrograms per liter. Few data address the degree of cancer risk at lower concentrations of ingested arsenic. Noncancer effects resulting from chronic ingestion of inorganic arsenic have been detected at doses of 0.01 milligram per kilogram (mg/kg) and higher per day. Of the noncancer effects, cutaneous manifestations of exposure have been studied most widely. Developmental and reproductive effects resulting from chronic ingestion of inorganic arsenic have not been demonstrated in humans, although arsenic is known to pass through the placenta. Parenteral administration of inorganic and organic forms of arsenic are known to be teratogenic in a number of mammalian species, and oral administration affects fetal growth and prenatal viability. Arsenic has not been tested for essentiality in humans, nor has it been found to be required for any essential biochemical processes. Arsenic supplementation at very high concentrations (e.g., 350-4,500 nanograms per gram (ng/g)) in the diet has been shown to affect growth and reproduction in minipigs, chicks, goats, and rats.

Recommendations

Additional epidemiological evaluations are needed to characterize the dose-response relationship for arsenic-associated cancer and noncancer end points, especially at low doses. Such studies are of critical importance for improving the scientific validity of risk assessment. With respect to cancer, studies are recommended to refine the dose-response relationship

between arsenic ingestion and cancer of the skin, bladder, and lung, and to investigate the effect of arsenic on cancer at other sites. With respect to noncancer effects, particular emphasis should be placed on epidemiological study of arsenic-associated cutaneous effects, cardiovascular and cerebrovascular disease, diabetes mellitus, and adverse reproductive outcomes.

Future studies on the beneficial effects of arsenic in experimental animals should carefully monitor the amount and speciation of arsenic in diets and water, use biomarkers to assess arsenic exposure and bioavailability, and use techniques that assess the toxicity and benefits of arsenic in a more specific manner than is possible through measurement of growth and reproductive success. In humans, the concentration of arsenic in total parenteral nutrition (TPN) should be determined by validated analytical methods and related to the health status of patients on long-term TPN.

Disposition (Absorption, Distribution, Metabolism, and Excretion)

In humans, inorganic arsenic is readily absorbed from the gastrointestinal tract and is primarily transported in the blood bound to sulfhydryl groups in proteins and low-molecular-weight compounds, such as amino acids and peptides. The half-life of arsenic in the body is about 4 days, and it is primarily excreted in the urine. Humans and some animals methylate inorganic arsenic to forms that are less acutely toxic and more readily excreted. However, the methylation process varies among animal species, making most animal models less suitable for studying the disposition of arsenic in humans. The methylation of ingested arsenic is not inhibited or overloaded, unless acute toxic doses are ingested. Substantial variations in the fractions of methylated forms of arsenic in urine are also known to occur among different populations and individuals within the same exposed population. Such variations might be indicative of genetic differences in the enzymes responsible for the methylation of arsenic. Methylation of arsenic might also be influenced by such factors as the arsenic species absorbed, high acute doses, nutrition, and disease. The extent to which variation in arsenic methylation affects its toxicity, including carcinogenicity, is not known.

Recommendations

Because of interspecies differences in the disposition of arsenic, more human studies are needed, including research using human tissues. Factors influencing the methylation, tissue retention, and excretion of arsenic in humans also need to be investigated.

Mechanism or Mode of Action

The mechanism or mode of action by which inorganic arsenic causes toxicity, including cancer, is not well established. In vivo studies in rats and mice to determine the ability of inorganic arsenic to act as a cocarcinogen or as a promoter have produced conflicting results. Studies on the arsenic metabolite, dimethylarsinate (DMA), suggest that it is not an initiator but

might act as a promoter. However, those studies used very high doses, making interpretation of the results difficult, especially if DMA is formed in situ following the administration of inorganic arsenic.

The most accepted explanation for the mode of action for arsenic carcinogenicity is that it induces chromosomal abnormalities without interacting directly with DNA. These markers of tumor response would lead to a dose-response curve that exhibits sublinear characteristics at some undetermined region in the low-dose range, although linearity cannot be ruled out.

The mechanism of action by which arsenic induces noncancer effects is centered on its inhibitory effects on cellular respiration at the level of the mitochondrion. Hepatotoxicity is a major health effect related to decreased cellular respiration. Oxidative stress might also have an important role in both cancer and noncancer effects.

Recommendations

Identification of proximate markers of arsenic-induced cancers and their application in carefully designed epidemiological studies might better define the cancer dose-response curves at low concentrations. Molecular and cellular characterization of neoplasms from arsenic exposed populations and appropriate controls might aid in identifying the mechanism by which arsenic induces tumors. Chronic low-dose studies in a suitable animal model (mouse, hamster, or rabbit) might increase our understanding of the mode of action of arsenic carcinogenicity, particularly the potential role of chromosomal alterations.

A greater understanding is needed of the inter-relationships between arsenic's effects on cellular respiration and its effects on biochemical processes, including methylation, formation of reactive oxygen species, oxidative stress, and protein stress response.

Variation in Human Sensitivity

Human sensitivity to the toxic effects of inorganic arsenic exposure is likely to vary based on genetics, metabolism, diet, health status, sex, and other possible factors. These factors can have important implications in the assessment of risk from exposure to arsenic. A wider margin of safety might be needed when conducting risk assessments of arsenic because of variations in metabolism and sensitivity among individuals or groups. For example, people with reduced ability to methylate arsenic retain more arsenic in their bodies and be more at risk for toxic effects. One study suggests that children have a lower arsenic-methylation efficiency than adults. Similarly, poor nutritional status might decrease the ability of an individual to methylate arsenic, resulting in increased arsenic concentrations in tissues and the development of toxic effects. There is some evidence from animal studies that low concentrations of *S*-adenosylmethionine, choline, or protein decrease arsenic methylation.

Recommendations

Factors that influence sensitivity to or expression of arsenic-associated cancer and noncancer effects need to be better characterized. Particular attention should be given to the extent of human variability and the reasons for it with respect to arsenic metabolism, tissue accumulation, and excretion (including total and relative amounts of urinary arsenic metabolites) under various conditions of exposure. Gene products responsible for metabolism, diet, and other environmental factors that might influence the susceptibility to or expression of arsenic-associated toxicity also need to be characterized in human studies and in suitable animal models. Potential differences between young children and adults in arsenic-methylation efficiency need to be validated and considered in any risk assessment of arsenic. Finally, quality-control data are needed to ensure that reported variations are not due to the analytical methods or procedures used. Standard reference materials are needed to analyze arsenic species in urine.

Other Considerations

Assessment of arsenic exposure via drinking water is often based on the measurements of arsenic concentrations in drinking water and assumptions regarding the amount of water consumed. Such data are estimates, the uncertainty of which will depend on the method used. The subcommittee evaluated various biomarkers (e.g., arsenic in urine, blood, hair, and nails) to measure the absorbed dose of inorganic arsenic and concluded that blood, hair, and nails are much less sensitive than urine as biomarkers of exposure. Specifically, the subcommittee concluded that the total concentration of inorganic arsenic and its metabolites in urine is a useful biomarker for both recent (previous day) and ongoing exposure. The concentration of urinary inorganic arsenic and its metabolites is less influenced by the consumption of seafood than is the total concentration of urinary arsenic. The concentration of arsenic in blood is a less-useful biomarker of continuous exposure because the half-life of arsenic in blood is short (approximately 1 hr), the concentration might be markedly affected by recent consumption of seafood, and it is difficult to speciate arsenic in blood. Measurements of arsenic in hair and nails have little use as biomarkers of absorbed dose, largely because of the difficulty in distinguishing between arsenic absorbed from ingestion and arsenic uptake in hair and nails from washing with contaminated water.

At present, the practical quantitation limit (PQL) for arsenic in water in most commercial and water utility laboratories is 4 μg/L. Measurement of total concentration of arsenic in drinking water is adequate for regulatory purposes.

Recommendations

More data are needed that tie biomarkers of absorbed arsenic dose (especially urinary concentrations of arsenic metabolites) to arsenic exposure concentrations, tissue concentrations, and the clinical evidence of arsenic toxicity. Data are particularly lacking for people living in different parts of the United States. Possible relationships between arsenic concentrations in

urine, blood, hair, and nails need to be evaluated. In particular, the degree of external binding of arsenic to hair and nails should be examined.

There is a need for further development of analytical techniques to determine the chemical species of arsenic in various media—water, food, urine, and biological tissues. Quality-control data and certified standards for arsenic speciation are also needed.

RISK CHARACTERIZATION

In the context of its task, the subcommittee was asked to consider whether cancer or noncancer effects are likely to occur at the current MCL. No human studies of sufficient statistical power or scope have examined whether consumption of arsenic in drinking water at the current MCL results in an increased incidence of cancer or noncancer effects. Therefore, the subcommittee's characterization of risks at the current MCL is based on observed epidemiological findings, experimental data on the mode of action of arsenic, and available information on the variations in human susceptibility.

In the absence of a well-designed and well-conducted epidemiological study that includes individual exposure assessments, the subcommittee concluded that ecological studies from the arsenic endemic area of Taiwan provide the best available empirical human data for assessing the risks of arsenic-induced cancer. The cultural homogeneity of this region reduces concern about unmeasured confounders, although the potential for bias still exists due to considerable uncertainty about the exposure concentrations assigned to each village. Ecological studies in Chile and Argentina have observed risks of lung and bladder cancer of the same magnitude as those reported in the studies in Taiwan at comparable levels of exposure.

Information on the mode of action of arsenic and other available data that can help to determine the shape of the dose-response curve in the range of extrapolation are inconclusive and do not meet EPA's 1996 stated criteria for departure from the default assumption of linearity. Of the several modes of action that are considered most plausible, a sublinear dose-response curve in the low-dose range is predicted, although linearity cannot be ruled out. In vitro studies of the genotoxic effects of arsenic indicate that changes in cellular function related to plausible modes of carcinogenesis can occur at arsenic concentrations similar to the current MCL. However, the subcommittee believes that those data and the confidence with which they can be linked to arsenic-induced neoplasia are insufficient to determine the shape of the dose-response curve in the low-dose range (point of departure). The subcommittee also finds that existing scientific knowledge regarding the pattern of arsenic metabolism and disposition across this dose range does not establish the mechanisms that mitigate neoplastic effects.

Human susceptibility to adverse effects resulting from chronic exposure to inorganic arsenic is likely to vary based on genetics, nutrition, sex, and other possible factors. Some factors, such as poor nutrition and arsenic intake from food might affect assessment of risk in Taiwan or extrapolation of results in the United States.

The subcommittee also concludes that the choice of model for statistical analysis can have a major impact on estimated cancer risks at low-dose exposures, especially when the model accounts for age as well as concentration. Applying different statistical models to the Taiwanese male bladder-cancer data revealed that a more stable and reliable fit is provided by Poisson

regression models that characterized the log relative risk as a linear function of exposure. The estimation of risk at low doses using those models is substantially higher than that using the multistage Weibull model. As an alternative to model-based estimates of risk, the subcommittee finds that the point-of-departure methods discussed in the 1996 draft EPA guidelines for cancer risk assessment give much more consistent low-dose estimates across a wide range of dose-response models. For male bladder cancer, a straight-line extrapolation from the 1% point of departure yielded a risk at the MCL of 1 to 1.5 per 1,000. Because some studies have shown that excess lung cancer deaths attributed to arsenic are 2-5 fold greater than the excess bladder cancer deaths, a similar approach for all cancers could easily result in a combined cancer risk on the order of 1 in 100.[1] It is also instructive to note that daily arsenic ingestion at the MCL provides a margin of exposure less than 10 from the point of departure for bladder cancer alone. The public health significance of daily ingestion of a given amount of arsenic in drinking water will be influenced by the background levels of arsenic consumed in food.

Recommendations

On the basis of its review of epidemiological findings, experimental data on the mode of action of arsenic, and available information on the variations in human susceptibility, it is the subcommittee's consensus that the current EPA MCL for arsenic in drinking water of 50 μg/L does not achieve EPA's goal for public-health protection and, therefore, requires downward revision as promptly as possible.

Sensitivity analyses should be conducted to determine whether the results, including the way exposure concentrations are grouped together, are sensitive to the choice of model. The potential effect of measurement error and confounding on the dose-response curve and associated confidence limits should be further addressed.

To assist in the application of cancer data observed in different populations to cancer risks predicted for the United States, information on nutritional factors in study populations that pertains to susceptibility to arsenic-induced cancer should be investigated.

Modeling of epidemiological data should not be limited to the multistage Weibull model. Other models, including those which incorporate information from an appropriate control population, should be considered. The final risk value should be supported by a range of analyses over a broad range of feasible assumptions.

[1]Two of the 16 members of the subcommittee did not agree with the 1in 100 estimate pending further analysis of the risk of lung cancer, as done for bladder cancer in Chapter 10.

ARSENIC IN DRINKING WATER INTERNATIONAL STANDARDS

Countries that have a 10 parts per billion standard: Belgium, Denmark, United Kingdom, Germany, Spain, Finland, France, Ireland, Greece, Italy, Luxembourg, Netherlands, Austria, Portugal, Sweden, Japan, Jordan, Laos, Mongolia, Namibia, and Syria.

Countries that have a 50 parts per billion standard: Bahrain, Bangladesh, Bolivia, China, Egypt, India, Indonesia, and Oman.

Australia has a 7 parts per billion standard

Mr. GILLMOR. And the Chair recognizes the gentleman, Mr. Terry.

Mr. TERRY. I will yield back in the interest of hearing from the witness.

Mr. GILLMOR. Very good.

Mr. Brown.

Mr. BROWN. Thank you, Mr. Chairman. The purpose of today's hearing is to discuss water infrastructures, and I am glad to welcome Administrator Whitman to the hearing, and I am glad that you have joined us.

I would hope, Mr. Chairman, that the Bush-Whitman arsenic repeal, the repeal of the arsenic standard, would be a subject for future hearings specifically on that. This inexplicable assault on a straightforward consumer protection policy baffled the scientific community as was pointed out by Mr. Waxman and Mr. Pallone.

And outraged those of us who ushered in these protections since passage of the 1996 Safe Drinking Water Act. In 1981, then President Reagan tried a similar approach to undo another pro-consumer regulation. He overturned a safety standard on air bags promulgated by the previous administration.

Like the arsenic standard, this measure reflected substantial research, and years and years of input, from private and public sector experts. The Supreme Court overturned President Reagan's action, calling it an arbitrary decision. It was not based on any new information that countered the evidence of the support of the air bag standard.

The Supreme Court protected consumers in those days when the President would not. We can only hope that this administration's arsenic decision meets the same fate. Mr. Chairman, the European community, and the World Health Organization, and the National Academy of Sciences, all relying on objective, sound scientific research, have endorsed lowering the arsenic standard from 50 parts per billion to 10 parts per billion.

This administration provided no factual rationale for dismissing the recommendation from these respected organizations. The only rationale that I can find in our research for repeal of the arsenic standard lies in President Bush's campaign finance report.

And in the last election cycle, mining companies gave $5.6 million in political contributions to Republicans. The chemical industry gave almost $9 million to Republicans. We know that the smelting of metal ores in mining can release arsenic into the environment.

A group of chemical and mining companies wrote to the EPA and argued that we did not need new protections. This later group formed something called the Environmental Arsenic Council. Yes, the Environmental Arsenic Council. It sounds like somebody needs a little better public relations agency.

You have to hand it to PR firms like this. They can make any anti-health or anti-environment group sound like the garden club. My hat is off to these spinmeisters. What the Environmental Arsenic Council won't tell you, and what President Bush does not remind us is that arsenic imperils human health in at least three ways.

It is a toxic. We have all known that in this society for years. It is a carcinogen, and we found that out, and it causes birth defects. If we are gambling on the environment, we would call arsenic the trifecta of health hazards. It is not conjecture. It is science, and that's why the administration's excuse that it wants to conduct more research rings so hollow with responsible non-industry people in the scientific community.

I look forward to hearing the administration explain how it could be in the best interests of the public's health to condone higher levels of arsenic in drinking water. Administrator Whitman has a tough job, and her agency's historical mission is under direct assault from the White House.

Given these circumstances, I look forward to hearing from her about these important water related issues. And, Mr. Chairman, I would also want to submit in the record—this is a list of arsenic and drinking water international standards.

Australia has a 7 parts per billion standard, and let me read a handful in my last 30 seconds. Countries that have 10 parts per billion standard are Belgium, Denmark, Jordan, Mongolia, Laos, The Netherlands, France, Greece, Spain, and several others.

Countries that have a 50 parts per billion standard, joined with the United States again now apparently are Bahrain, Bangladesh, Bolivia, The People's Republic of China, Egypt, India, Indonesia, Oman, and alphabetically, the United States of America. Mr. Chair, if I could submit this. Thank you.

Mr. GILLMOR. Without objection, the Chair hearing none, it will be entered in the record.

Are there further opening statements? The gentleman, Mr. Luther.

Mr. LUTHER. Thank you, Mr. Chairman. I want to thank Administrator Whitman for being before the committee again. I hope that she is enjoying herself. I am not sure. I think we can all agree that America's drinking water infrastructure is in critical need of reinvestment.

One issue that I would like to hear about in this hearing is whether the drinking water State revolving fund should focus more on existing infrastructure rather than on new infrastructure.

With the concern that we have over sprawl and quality of life today, would that in fact remove an incentive from developers who are rapidly expanding into the outer suburbs of our Metropolitan areas in the country. So I think it would be good if we could focus a bit on that.

Last, Mr. Chairman, I would also like to express my concern over the Bush Administration's decision to withdraw the standard on arsenic in the Nation's drinking water.

Indeed, it was our committee, I believe, on a bipartisan basis urged the EPA to promulgate new final standards on arsenic. So

it is my hope—I don't have an award for you today or anything, Administrator, and I apologize for that.

But it is my hope that if not today, Mr. Chairman, our subcommittee in the very near future can in fact focus on this issue and hear it out. So thank you very much.

Mr. GILLMOR. Thank you. Are there further opening statements? The gentlelady from California.

Ms. CAPPS. Thank you for holding this hearing, Mr. Chairman, and I realize that a vote is on, and I will be as brief as I can. I am so pleased that the subcommittee is turning its attention to drinking water infrastructure needs of this country.

There is a clear need for upgrades to our system to ensure that all communities have safe drinking water and drinking water systems, and as a member of this committee, I am pleased that we will bring to bear the substantial expertise of our members on this important topic.

Ensuring clean sources of water is indeed a public health issue, and properly belongs before this committee. Our witnesses are to be commended for appearing today, and especially I want to thank Administrator Whitman for your presence today.

I also want to take a moment to mention a related drinking water issue, MTBE pollution. This is a real problem in my district, and I believe throughout the State of California and across this country.

MTBE has polluted the ground water of many communities, including the Town of Cambria in San Luis Obispo County, which has at this moment no safe backup drinking water system because of MTBE pollution.

There are two issues regarding MTBE that I want to raise. We need to stop the harm that it is causing and fix the damage that it has already caused. California has a waiver request before the EPA from the Clean Water Act's 2 percent oxygenate requirement, and I hope that you will give this request quick attention.

California needs this waiver to help protect public health and their environment. Second, I have a bill that would help communities whose drinking water has been contaminated by MTBE. It dedicates $200 million out of the leaking underground storage tank fund, the LUST fund, toward MTBE cleanup.

I believe that this is something that Congress could move forward on I hope that Administrator Whitman will look at my legislation and work with me and this committee on this and any other steps that we can take to help communities like Cambria.

Ensuring clean drinking water is just about the most basic service that any government does, and that's why I, like other members of this committee, who have been eloquent in their statements, have also been disturbed by the recent action on arsenic and drinking water.

The standards for allowable levels of arsenic in drinking water were set in 1942. One would think that we could update this 59 year old public health protection act. And Knight-Ritter has reported just in the last couple of days that a Dartmouth University toxicologist, Joshua Hamilton, says that there is sufficient evidence that 50 parts per billion is not protective, and 10 parts per billion is reasonable.

In fact, this committee directed EPA to come up with the standards, and now the rules have been withdrawn. I believe, as a public health nurse, that this action comes at the expense of public health. It is one more in a disturbing pattern where this administration is putting the health and safety of the American people behind more powerful interests.

We have seen this with the CO_2 flip-flop and the apparent abandonment of global warming efforts that I read about in today's Washington Post. These decisions are going to have a real life impact. They are going to reduce our ability to ensure our air and water are clean and to fight global warming.

So I am hoping that the EPA and the administration will reconsider these moves. I say that with all due respect and I yield back the balance of my time. Thank you.

Mr. GILLMOR. Thank you, Ms. Capps. We are going to take a very short recess, because we do have a vote on. And, Mr. Shimkus, the vice chairman, using a system that we frequently use, left to vote early, and as soon as he comes back, he will start the hearing so that we do not keep you any longer, Governor.

And I will return as soon as possible so that we can keep the hearing moving. So, the Chair now declares this in a brief recess.

[Additional statement submitted for the record follows:]

PREPARED STATEMENT OF HON. W.J. "BILLY" TAUZIN, CHAIRMAN, COMMITTEE ON ENERGY AND COMMERCE

First, I want to thank Subcommittee Chairman Gillmor for scheduling today's hearing on drinking water needs and infrastructure. I believe Chairman Gillmor is off to a great start as Subcommittee Chairman and today's hearing only affirms his—and my—desire to aggressively pursue major issues which fall under the Subcommittee's jurisdiction.

I also want to thank Administrator Whitman for her appearance before us today. I appreciate the effort Administrator Whitman displayed in providing testimony on what EPA has been doing to analyze drinking water needs and to provide assistance through authorities contained in the Safe Drinking Water Act.

Let me begin my formal remarks by stating what should be obvious. The Energy and Commerce Committee has jurisdiction over public health and the Safe Drinking Water Act. Since the original Safe Drinking Water Act was added as an amendment to the Public Health Service Act in 1974, this Committee has amended the law and reauthorized provisions of the Act several times.

Most recently, this Committee made substantial alterations and enhancements to the underlying statute through the 1996 Safe Drinking Water Act Amendments. Many of the interested parties in this room participated in that process. The Environmental Protection Agency provided technical assistance to the 1996 effort and, through several long months during the winter, spring and summer of 1996, we were able to pass a comprehensive measure into law.

As part of that effort, this Committee created the first substantial source of federal funding for drinking water systems. We authorized the Drinking Water State Revolving Fund to provide a sustainable source of assistance for both infrastructure projects and state drinking water programs. As of this year, $4.4 billion has been appropriated by Congress for the Drinking Water SRF.

EPA informs us that through September of last year, the money Congress and the states have provided to the Drinking Water SRF has funded over 1,400 projects nationwide. These projects address treatment facilities, transmission and distribution systems, source and storage projects, planning and design, land acquisition, the purchase of systems, system restructuring and other expenses associated with drinking water systems.

In brief, the tree we planted in 1996 is now bearing fruit. But rather than sit back and admire our handiwork, the question now is: what can we do to increase its yield? How can we make our system of financing water infrastructure work better to further protect the public health?

In addressing this question, I believe we must first analyze how well the Drinking Water SRF has worked since its creation. We need to know where the program has

succeeded, as well as where there might be shortcomings. We also need to review the interaction of this fund with the Clean Water SRF, since states have been allowed under the 1996 Amendments to shift resources between each entity. We also need to closely examine the available evidence on the need for additional water infrastructure, including EPA's analytical efforts and studies like those produced by the Water Infrastructure Network. In this regard, it is my sincere hope that we will be able to work with the Administration and all interested public and private parties in this endeavor.

But let me be clear on one overriding issue. The Energy and Commerce Committee has broad and substantial jurisdictional interest in the matter of water infrastructure. And this is an interest we intend to thoroughly pursue as Congress considers any effort to channel more resources into this area, no matter what legislative vehicle is constructed. Water infrastructure is not built because such things are nice to have around; they are built because they are needed to preserve the environment and protect the public health. Our Committee's interest in such matters is widespread and longstanding.

Again, I want to thank all of the witnesses who are with us today.

[Brief recess.]

Mr. GILLMOR. The committee will come to order, and we will proceed with our first panel, which consists of the—Ms. McCarthy, we closed opening statements. Could you submit yours in writing?

Ms. MCCARTHY. Yes, Mr. Chairman.

Mr. GILLMOR. Or do you feel an absolute compulsion to give it?

Ms. MCCARTHY. I would be happy to do so.

Mr. GILLMOR. Thank you. I appreciate it.

[The prepared statement of Hon. Karen McCarthy follows:]

PREPARED STATEMENT OF HON. KAREN MCCARTHY, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MISSOURI

Thank you, Mr. Chairman, for holding this hearing to examine the very important issue of the status of our nation's drinking water infrastructure and to determine what critical needs we have before us, and for having EPA Administrator Whitman and the distinguished panel of experts here to testify. This Subcommittee, with legislative jurisdiction over the nation's drinking water, and specifically the Safe Drinking Water State Revolving Fund (SRF) program, is in a unique position to protect the public health in a significant way.

In my district, Kansas City has made substantial progress in meeting the high and growing expectations of drinking water consumers. In fact, I am proud to share with the committee that the Kansas City Water Services Department (WSD) has recently been recognized by the Association of Metropolitan Water Agencies' (AMWA) as a winner of its 2001 Gold Award for Competitiveness Achievement for using exceptional management practices and achieving high performance—I am pleased to see that AMWA is here to testify today on the needs of drinking water utilities and the gap that exists between spending and need. The Kansas City Water Department has worked hard to keep rates fair and equitable while producing a quality product, but the infrastructure system is simply deteriorating far too quickly for them to fund such a staggering undertaking on their own.

I am interested to hear from our witnesses on the success, or failures, of the Drinking Water State Revolving Loan Fund. Has the program created the necessary flexibility to allow the states to manage and run their programs effectively? Is there more that can be done to assist states in ensuring the safety of our drinking water? Unfortunately, Kansas City has not been able to utilize the fund. Because our water quality is high and the Water Services Department is in compliance with the many regulations, it falls so low on the State Revolving Fund priority list that they are unable to receive the much-needed funds to assist with their many needs. As the old adage goes, there is no reward for being good. I am interested to hear from our witness on we can address issues such as these.

Clearly, as the recent EPA Drinking Water Infrastructure Needs Survey illustrates, if we are to continue the responsibility of protecting our nation's drinking water from harmful contamination, we must begin to make substantial investments in its infrastructure now. I am interested to hear our witnesses' perspectives on how we can best accomplish this given the dire state of current resources.

This is an issue that effects us all, from the small town of Grandview to urban Kansas City, Missouri. While cost-estimates for drinking water investment needs

over the next 20-years may vary, I think we can all agree that more needs to be done to ensure that public health is kept safe now and that future needs are met. We must do all we can in order to avoid a future infrastructure crisis and ensure that the consumer does not bear the costly burden of infrastructure neglect. The Federal government must invest in drinking water infrastructure and make it a national priority. I welcome the input of our witnesses on how best to get there.

Mr. GILLMOR. We will now proceed to our first panel, which is the Administrator of the Environmental Protection Agency, Governor Whitman. Go ahead.

STATEMENT OF HON. CHRISTINE TODD WHITMAN, ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY

Ms. WHITMAN. Thank you, Mr. Chairman. I appreciate the opportunity to testify on this very important area, but I beg leave of the chairman to stray a little bit given all the discussion that has been held heretofore. I must say that when cameras are in the room that it heightens the discussion. We get a lot more interest and interesting discussion.

Mr. GILLMOR. There has been a lot of strain, and so feel free.

Ms. WHITMAN. I just wanted to say a couple of things. One is that if all that we heard here today was true, I would be worried as well on the arsenic rule. Something to be made very clear is the standard.

The arsenic rule as proposed by the previous administration, dropping 50 parts per billion of arsenic to 10 parts per billion would not have become effective, or is not due to become effective until 2006.

We will have a new regulation in place that will have an effective date of 2006. It will be well below 50 parts per billion. However, as it has been pointed out, there is no definitive and scientific study that says that 10 is it.

And while the National Academy of Sciences said very clearly that 50 parts per billion was too high, they did not endorse 3, 5, 7, or 10, or 20. Given that uncertainty, I think it is important that we hear from all the affected parties.

And the way that rule was promulgated at the last minute, while the scientific studies may have been going on for years, there was not, I do not feel, an adequate time for full input from all the affected communities.

We need to know what the full impact is so that we don't suffer from unintended consequences, and when I talk about unintended consequences, I can tell you of a real instance where a town, where the water company was purveying water at 90 parts per billion, and they were told to come into line with 50 parts per billion.

The water company closed up and walked away, and that left the 30 people on that system with no water and no choice but to sink their own wells, which they then did and are now ingesting 90 parts per billion, without the same protections that we could offer them if we had done it through the water company system.

The concern that I have is not that we have any lesser standard because of the cost, but that we fully understand what the costs are, and we make sure that we have in place the tools necessary, whether it be strictly financial or technical, for what we need to do to help those small and mid-sized communities where arsenic is a

naturally occurring substance, and to be able to reach whatever the standard is that we set.

We have had a new study that indicates that arsenic may well be an endocrine disrupter. In that instance, we may find that it should be at 3, or 5, and not just 10. But it might also be above that, slightly above that.

I can't tell you what the final will be, but I will tell you that this administration has put nobody's drinking water in jeopardy, and nobody is drinking any more unsafe drinking water today than they were last month, last year, nor will they for the next 2 years, because that standard was not going into effect until the year 2006.

There will be a new standard going into effect in the year 2006. I also beg to differ with some of the allegations about how this decision was reached, and I would just like to say that I fully accept responsibility for the decision, when in fact I gave to the administration both that decision and the decision on the reviewing of pesticides, which nobody mentions when they say how anti-environment the administration is.

And in fact that was a decision that the environmentalists were looking for, but that has been shunned aside. The one that they asked questions about and pushed back on was the arsenic decision. Why was I doing it, and was I satisfied that this is what we needed to do.

I never read a letter from the timber industry, and I never read a letter from a miner. I sat with staff to listen to how this rule had been promulgated, and I wanted to make sure that we had fully included all that needed to be heard.

We can do that, and we can do that in a way that allows us to move forward with the standard, because as all of you know, the process is that when EPA finalizes a regulation, there is 3 years from finalization to implementation.

In this instance the Agency chose to give the water companies 5 years. So we will meet that 3 years, and we will hopefully meet 4 years, and I would like to get it done much sooner than that.

We are going to ask for outside review by the National Academy of Sciences to see if there is any new science to be taken into account, and then those who look at cost benefit—because by the way, that is also part of the law. We are required by law to look at cost benefit.

That is something that is in the Safe Drinking Water Act, and we need to meet that obligation, and unfortunately I did not feel that that had been satisfactorily addressed during the original rule promulgation.

Having said that, Mr. Chairman, I will keep my opening statement brief. If it is all right, I will submit a longer statement on the issue at hand that gets more to the specifics.

Mr. GILLMOR. Thank you.

Ms. WHITMAN. I think it is safe to say that over the past 25 years that America has indeed made great progress in reducing water pollution and ensuring safe, affordable, and an abundant supply of drinking water to the people.

Our drinking water system is among the most safe and reliable in the world. The 265 million Americans who rely on public water

can have full confidence that the water that they use is safe for them and safe for their families.

We can, however, do better. As you know, the primary mechanism EPA uses to help local communities finance water infrastructure projects is the State Revolving Loan Funds.

The Federal Government provides grants to States to capitalize loan funds for drinking water in each State. States then use these funds to make low cost loans to communities to finance drinking water projects.

Because this is a revolving loan fund, the money invested in SRFs provides about four times as much purchasing power over 20 years as straight grants would. In addition, because the funds make loans to local communities at below market rates, communities have over the years saved their taxpayers literally millions of dollars.

It is also worth noting that almost 3 out of every 4 loans made for drinking water projects have been provided to small water systems that usually have a difficult time in affording and accessing affordable financing.

These funds have made an important contribution to our success in America's drinking water, but as I said before, the job is certainly not finished. Under the law, EPA is required to take a periodic look at drinking water and clean water infrastructure investments needed around the country.

Last month, EPA released the second of these reports describing needed water investments. The bottom line, Mr. Chairman, is that we perceive the need of about $150 billion over the next 20 years to ensure the continued safety and availability of water.

Other outside groups have also issued reports estimating water infrastructure needs, estimates that exceed ours. But no matter which estimate you use, there are several key components of water infrastructure funding that must be fully evaluated.

These include population growth, aging infrastructure, emerging environmental and public health demands, increasing operation and maintenance costs, and maintaining affordability.

We need to keep affordability in mind as we move forward with both funding and regulatory proposals. I am pleased to report that the President's fiscal year 2002 budget maintains Federal support for drinking water infrastructure.

EPA expects that the drinking water SRF will be able to provide average annual assistance of $500 million over the long term life if this capitalization funding is maintained. Furthermore, in keeping with the President's commitment to focus on goals rather than process, the administration supports the mechanism currently in the law that gives States the flexibility to move funds between clean water and its drinking water revolving loan funds.

Mr. Chairman, this proposed funding will help communities across America finance important drinking water projects. As your committee continues to study America's drinking water needs, we look forward to a constructive dialog on the appropriate role that the Federal Government can play.

There is no doubt that ensuring safe drinking water will require a shared commitment on the part of Federal, State, and local governments, as well as in private business and consumers.

You have my pledge that EPA will continue to work in partnership with Congress and with all the other stakeholders to better understand, and then meet the needs of our water infrastructure. Thank you, Mr. Chairman, and I would be happy to answer questions.

[The prepared statement of Hon. Christine Todd Whitman follows:]

PREPARED STATEMENT OF HON. CHRISTINE TODD WHITMAN, ADMINISTRATOR, U.S. ENVIRONMENTAL PROTECTION AGENCY

Good afternoon, Mr. Chairman and Members of the Subcommittee. I am Christine Todd Whitman, Administrator of the Environmental Protection Agency.

I welcome this opportunity to discuss the Nation's investment in drinking water infrastructure-the pipes and treatment plants that deliver safe drinking water to our taps. These drinking water facilities are critical to protecting human health.

As a Nation, we have made great progress over the past quarter century in assuring the safety of drinking water. The Safe Drinking Water Act has served us well and provides the solid foundation we need to make sure that all Americans will continue to enjoy safe drinking water.

Our success in improving drinking water quality is the result of many programs and projects by local, State and Federal governments in partnership with the private sector. But our cooperative, intergovernmental investment in drinking water infrastructure facilities has, more than any other single effort, paid dramatic dividends for public health and water quality.

This afternoon, I want to give you a brief overview of the progress we have made in improving water quality, and the public health challenges we still face. I also will summarize what EPA knows about the need for future investment in drinking water and identify the key challenges I see in meeting this need. I will conclude with some thoughts about how Congress and others could proceed when addressing the problems of financing drinking water infrastructure.

SAFE WATER—ACCOMPLISHMENTS AND CHALLENGES

Most Americans would agree that the quality of drinking water has improved dramatically over the past quarter century.

We have made dramatic progress in improving the safety of our Nation's drinking water. Disinfection of drinking water is one of the major public health advances in the 20th century. In the early 1970's, however, growing concern for the presence of contaminants in drinking water around the country prompted Congress to pass the Safe Drinking Water Act. Today, the more than 265 million Americans who rely on public water systems enjoy one of the safest supplies of drinking water in the world.

Under the Safe Drinking Water Act, EPA has established standards for 90 drinking water contaminants. Public water systems have an excellent compliance record-more than 90 percent of the population served by community water systems receive water from systems with no reported violations of health based standards.

In the past decade, the number of people served by public water systems meeting Federal health standards has increased by more than 23 million. Although compliance with drinking water contaminant standards is good, public health risks from drinking water can be further reduced.

DRINKING WATER STATE REVOLVING LOAN FUND

The primary mechanism that EPA uses to help local communities finance drinking water infrastructure projects is the State Revolving Loan Fund (SRF) established in the Safe Drinking Water Act. The SRF was designed to provide a national financial resource for clean and safe water that would be managed by States and would provide a funding resource "in perpetuity." These important goals are being achieved. Other Federal, State, and private sector funding sources are available for community water infrastructure investments.

Under the SRF program, EPA makes grants to each State to capitalize their SRFs. States provide a 20% match to the Federal capitalization payment. Local governments get loans for up to 100% of the project costs at below market interest rates. After completion of the project, the community repays the loan and these loan repayments are used to make new loans on a perpetual basis. Because of the revolving nature of the funds, the dollars invested in the SRF provides about four times the purchasing power over twenty years compared to what would occur if the funds were distributed as grants.

In addition, low interest SRF loans provide local communities with dramatic savings compared to loans with higher, market interest rates. An SRF loan at the interest rate of 2.6% (the average rate during the year 2000) saves communities 25% compared to using commercial financing at an average of 5.8%.

The drinking water SRFs, which this Committee created as part of the 1996 amendments to the Safe Drinking Water Act, were modeled after the clean water SRFs, but included several important improvements.

States were given broader authority to use drinking water SRFs to help disadvantaged communities and fund programs that look to prevent contamination of sources of drinking water and promote better management and operations of drinking water systems.

Through fiscal year 2001, Congress has appropriated $4.4 billion for the Drinking Water SRF program. EPA has reserved $83 million for monitoring of unregulated contaminants and operator certification reimbursement grants. Through June 30, 2000 States had received $2.7 billion in capitalization grants, which when combined with state match, bond proceeds and other funds provided $3.7 billion in total cumulative funds available for loans. Through June 30, 2000, States had made close to 1,200 loans totaling $2.3 billion and $1.4 billion remained available for loans. Approximately 74% of the agreements (38% of dollars) were provided to small water systems that frequently have a more difficult time obtaining affordable financing. States also reserved a total of approximately $420 million of SRF capitalization grants for other activities that support the drinking water program.

DRINKING WATER INFRASTRUCTURE—FUTURE NEEDS

The Safe Drinking Water Act requires that EPA periodically develop a "needs survey" to identify water infrastructure investments.

One month ago, EPA released its second report on drinking water infrastructure needs. The new survey shows that $150.9 billion is needed over the next 20 years to ensure the continued provision of safe drinking water to consumers.

The survey found that water systems need to invest $102.5 billion, approximately 68% of the total need, in what the report calls "current needs." In most cases current needs would involve installing, upgrading or replacing infrastructure to enable a water system to continue to deliver safe drinking water. A system with a current need therefore, usually is not in violation of any health-based drinking water standard. For example, a surface water treatment plant may currently produce safe drinking water, but the plant's filters may require replacement due to their age and declining effectiveness, if the plant is to continue to provide safe water. Future needs account for the remaining $48.4 billion in needs; for example, projects that systems would undertake over the next 20 years as part of routine replacement such as reaching the end of a facility's service life.

The survey includes needs that are required to protect public health, such as projects to preserve the physical integrity of the water system, convey treated water to homes, or to ensure continued compliance with specific Safe Drinking Water Act regulations (See Chart 1). Transmission and distribution projects represented the largest category of need (56%) with $83 billion needed over the next 20 years. This result is not surprising given that, for most water systems, the majority of their capital value exists in the form of transmission and distribution lines. Treatment projects, which have a significant benefit for public health, make up the second largest category of needs at 25%.

Although all of the 74,000 projects in the survey would promote public health protection, also water systems identified capital needs that are directly related to specific regulations under the Safe Drinking Water Act. Approximately 21%, or $31.2 billion, is needed for compliance with current and proposed regulations under the Act. Most (nearly 80%) of the remaining need is to comply with rules which protect consumers from harmful microbial contaminants, such as Giardia and E. coli. Most of the total needs derive from the costs of installing, upgrading and replacing the basic infrastructure that is required to deliver drinking water to consumers—costs that water systems would face independent of any Safe Drinking Water Act regulations. These findings indicate that most of the total need stems from the inherent costs of being a water system, which involves the almost continual need to install, upgrade, and replace the basic infrastructure that is required to provide safe drinking water.

The survey also examined capital need by system size. The survey found that while small systems (serving fewer than 3,300 people) represent more than 80% of the nation's community water systems, they contribute 22% to the total national need. By contrast, large systems (serving more than 50,000) represent just 2 percent of the nation's water systems, yet account for more than 44% of the national need.

This finding reflects the fact that small systems collectively serve about 26 million people, whereas large systems serve a total of 138 million people.

BROADER CONTEXT OF WATER INFRASTRUCTURE FINANCING

Over the past year, several interest groups including the Water Infrastructure Network, and the Water Environment Federation issued reports estimating water infrastructure needs. These estimates were all substantially above those of EPA's Needs Surveys. In general, these cost estimates differ from EPA's because the methodologies and definitions for developing them differs. For example, EPA Needs Surveys include only projects that are eligible for SRF funding under the Clean Water Act and Safe Drinking Water Act. Also, EPA requires that costs included in the Needs Surveys be established by planning or design documentation.

Nevertheless, EPA recognizes that effective decision-making concerning water infrastructure financing would benefit from a better understanding of the broader context of this effort. Key components in the broader context of water infrastructure funding that need to be more fully evaluated include:

—**Population Growth:** Steady growth and shifts in population puts substantial pressure on local governments to provide expanded drinking water and sewer services. More and more communities are searching for ways to grow that fully protects their quality of life and natural resources.

—**Aging Infrastructure:** Many sewage and drinking water pipes were installed between 50 and 100 years ago and these pipes are nearing the end of their useful life.

—**Emerging Environmental and Public Health Demands:** As our knowledge of threats to water quality and public health improves, the public expects its water infrastructure to continue to provide clean safe water at reasonable cost.

—**Increasing Operation and Maintenance Costs:** As the size and complexity of water and sewer systems increases, and facilities get older, the costs of operations and maintenance tend to increase.

—**Affordability:** Although water has historically been underpriced, some systems may find it difficult to replace or update aging water and sewer systems and keep household user charges at affordable levels. This issue needs to be kept in mind as future regulations are developed.

In an effort to better understand the issues related to water infrastructure financing, the Agency is reviewing issues related to long-term needs, assessing different analytical approaches to estimating those needs, and estimating the gap between needs and spending. Some elements of this analysis—known as the Gap Analysis—have been presented to a range of interested parties and EPA is committed to improving and refining this important work. To this end, the EPA plans to make this analysis available for peer review by expert organizations in the near future.

FY 2002—DRINKING WATER INFRASTRUCTURE INVESTMENTS

The President's FY 2002 budget proposes to maintain Federal support for drinking water infrastructure. The Administration proposes to maintain capitalization of the drinking water SRFs in FY 2002. By the end of FY 2002, we expect loans issued by State drinking water SRFs to reach 2,400, with about 850 SRF funded projects having initiated operations by that date.

In addition, the law currently grants a State flexibility to transfer funds between its clean water and drinking water SRFs. The Administration supports this mechanism to help States fund their priority needs.

This proposed FY 2002 funding will help communities across the country finance important drinking water projects. As your Committee continues to study the drinking water infrastructure needs, the Administration would like to encourage a constructive dialogue on the appropriate role of the federal government in addressing these needs.

CONCLUSION

Thank you, Mr. Chairman, for giving me the chance to outline EPA's view of the drinking water infrastructure challenges the Nation is facing. Let me conclude by identifying some of the key issues that Congress, the Administration, the private sector and other interested parties will need to consider as we work toward a common approach to solving drinking water infrastructure problems.

1) We need a common view of the scale of the water infrastructure problem that we face and the long-term timeframe for making needed investments.

2) We need to consider the best role for the Federal government to play in helping States and local governments finance drinking water infrastructure projects and

evaluate any barriers faced by local governments in getting access to needed capital as part of this process (such as poor bond ratings, or interest rates).

3) We need to consider the strengths and weaknesses of the existing funding mechanisms and consider the best mix of financing under various circumstances. We also need to review the role that privatization might play in the future.

4) We need to review water rate structures, encourage rates that make systems sustainable and address concerns that rates are affordable, especially in poor communities.

5) We need to look closely at Federal mandates to ensure that those mandates are not needlessly costly and burdensome.

6) Finally, addressing water investment needs in years to come will not only require a strong commitment from Federal, State and local governments, it will call for innovative funding mechanisms, public/private partnerships, advancements in technologies, and a commitment to sustainable management practices.

Ensuring that our drinking water infrastructure needs are addressed will require a shared commitment on the part of the Federal, State and local governments, private business, and consumers.

I pledge that EPA will continue to work in partnership with Congress, States, local governments, the private sector and others to better understand the drinking water infrastructure needs we face and to play a constructive role in helping to define an effective approach to meeting these needs in the future.

I will be happy to answer any questions.

Mr. GILLMOR. Thank you very much. If I might begin. EPA's February 2001 Drinking Water Infrastructure Needs Survey indicated the purpose of the survey is to include infrastructure needs that are required to protect public health, such as projects to preserve the physical integrity of the water system, convey treated water to homes, or ensure compliance of specific SDWA regulations.

Could you briefly describe each need and its relationship to maintaining public health?

Ms. WHITMAN. Well, Mr. Chairman, public health is at the basis of all of these. It is the primary focus of the Safe Drinking Water Act. Each one of the needs to which you refer is tied directly to assuring safe drinking water.

A needs survey report discusses the needs associated with components of the water system and its regulatory needs, but all of those are geared toward health, and we would obviously be more than happy to work with the subcommittee to provide additional information on the direct linkage and the importance of those health standards.

Mr. GILLMOR. And I thank you very much, and will look forward to whatever additional information you may have. That needs survey also indicates that most of the total need results from the costs of installing, upgrading, and replacing the basic infrastructure that is required to deliver drinking water, the consumer costs that are borne by water systems independent of SDWA.

For a need to be included in the survey, however, it must be required to protect public health. Therefore, if a system fails to address a need, then a health based violation of the standard eventually may occur.

And in more simple terms does that mean that the needs that EPA has identified in its survey are, one, public health needs; and, two, public health needs that ought to be addressed by SDWA?

Ms. WHITMAN. Yes, Mr. Chairman. The survey only includes those infrastructure needs that are directed toward public health, but let me just add that many of those investments are being made by companies and proactive investments in order to prevent deg-

radation of the water supply, and not necessarily because they are currently in violation.

In order to ensure continuous safe drinking water, these systems face the constant need for upgrading of the system, and improving the pipes to meet the demand, and upgrading and replacing all that basic infrastructure.

Mr. GILLMOR. Thank you very much. Just one more question from me. You indicate that the operation of the Safe Drinking Water SRF, like the Clean Water SRF, essentially provides funds in perpetuity.

And you also note the ability of Federal money to leverage State money, and provide multiple increases in actual purchasing power. These appear to be substantial benefits of the revolving fund concept. Could you expand on those benefits a little more, as well as any possible drawbacks with revolving funds?

Ms. WHITMAN. Well, obviously we feel that this is a very appropriate way to approach the issue, because with a revolving loan fund, you are able to actually capitalize your money much faster and to ensure that you have a continuous flow of money able to go out to the communities to help where they must need it.

That is also a—it also provides a saving, because we are there for communities when they have the need, and they are able to do some planning. The low interest rates, of course, save them directly, save them money.

Now, of course, there are always those communities for whom even the lowest rates are too high, and provide a burden to them. So that is obviously a concern, but we believe that the approach is appropriate, and that the loan approach is appropriate, and we do have as you know certain grants that are available.

But overall the loan approach allows us to maximize the dollars available and provide real support and real relief to these communities.

Mr. GILLMOR. Thank you very much, Governor. Mr. Pallone.

Mr. PALLONE. Thank you, Mr. Chairman. I want to ask two questions, and I guess the first one has to do with the arsenic standard and the second one is on infrastructure. As far as the arsenic standard is concerned, again, you know that I was very disappointed in the fact that you decided not to implement the 10 parts per billion.

And what you seem to be saying today is that you definitely think it should be lowered from 50, but you don't know if the 10 is the right one. Again, I don't understand that because we have so many indications—the European Union, the World Health Organization, our own State of New Jersey, that has used 10.

You even stated that maybe even 5 or 3, but it seems like the general consensus is that 10 is certainly what it should be. I mean, there is certainly some that say it should be 5 or 3, but there are very few that are suggesting that it should be more than 10.

And so I still don't understand why it was not the logical and the right thing to do to go to 10, and then if you wanted to reduce it to 5 or 3 later, that's fine. But to suggest that somehow it does not matter because it is not going to be implemented for a couple of years, but I still think it serves as an example for States and for water systems.

And if we defer this 10 for a significant period of time before announcing it, that does have a public health impact. So would you please respond to that.

Ms. WHITMAN. Well, first of all, we have not withdrawn the 10. We have put a notice to withdraw the regulation as it currently exists. I am having a difficult time understanding how there is a public health issue if the new standard of 10 parts per billion would not have been effective until 2006, and we will have a new standard effective by 2006 which may well be 10.

But as you yourself indicated—first of all, let me say also that it is very expensive for water companies. While it may sound all right to go to 10, and then if we find that it should be 7 or 5, to drop it lower than that later on, that is a huge incremental cost.

So we want to make sure that we are at the right level, and my concern is that the previous rulemaking did not allow adequate time for us to hear of what I have seen of what we were able to get from all of the stakeholders, and all those affected.

And we have made on a cost benefit analysis that the costs that we used were based on a national average, when what we see is the heavier concentrations of naturally occurring arsenic occur in the west and southwest; many and very small water systems, with populations that don't have a lot of disposable income.

And I just think that it is fair that we hear all of that and understand what more we might need to do from either additional loans, grants, or technological help, to ensure that these small water companies—that we are not forcing people out of their homes or don't cause them as in the case that I cited before, don't cause them to sink their own wells and get unprotected water that is at the higher standards.

Mr. PALLONE. I guess my concern, Governor, is that I think 10 is pretty much the consensus, although it may not be 90 or 100 percent, and it would have been better to just proceed with that.

And I guess I am also fearful that as much as you have the best intentions in trying to say that we are going to do something well, that that may not be what the administration does.

The second thing though. With regard to the funding levels dedicated, I am very concerned as I said before that we are not going to see this administration and its budget actually provide for any significant increase in the funding levels for safe drinking water.

You said in your statement that the administration proposes to maintain capitalization, which suggests to me that maybe that means that they are just going to stay at the same level.

And the 500 million that I think that you suggested, is that for safe drinking water, or is that for clean water in general? I was not clear if you were putting the clean water and the safe drinking water together, and whether there was going to be an actual increase for the safe drinking water component.

Ms. WHITMAN. What we are looking at is maintaining the same commitment as the previous administration on the clean water.

Mr. PALLONE. And, you see, that is the problem again. We are hearing figures here and testimony from that latest survey of 150 billion over 20 years. If we are just going to maintain the same level, we are never going to get to deal with these infrastructure problems the way they need to be dealt with.

And I think what happens is that it goes back to the States and the ratepayers, and I don't think that is going to accomplish the goal of really making the kind of investment that they want.

I don't think that these investments are going to be made if the Federal Government does not provide significant monies. What about the enforcement aspect? I mean, do you envision that we are going to have more money for staff, and for compliance to go out and look at the bad actors and see that there is adequate compliance with the existing standards?

Ms. WHITMAN. We are certainly going to have a very active enforcement effort. As you know, we have not finalized the budget numbers. They will come to you. I believe it is the 9th of April.

But we are also looking to maximize the ability of States to help us with that enforcement. We will enter into partnership with the States. Many as you know have done a very, very good job at this, and we want to ensure that we have the ability to do what needs to be done, and we feel that we can maximize that by working in partnership with the States.

Mr. PALLONE. Thank you, Mr. Chairman.

Mr. GILLMOR. Thank you, Mr. Pallone. The chairman of the full committee, Mr. Tauzin.

Chairman TAUZIN. Thank you, Mr. Chairman. Governor, let me thank you for coming to discuss with us critical issues concerning the Safe Water Drinking Water Act and its implementation.

I missed the chance to give an opening statement, but I would have recognized the fact that since we started the Drinking Water State Revolving Fund as a result of the 1996 Safe Drinking Water Act Amendments we have, as of this year, allocated $4.4 billion for drinking water specific funding across the country.

And the result has been that there have been over 1,400 projects funded nationwide, providing safer drinking water and safer health conditions for Americans. So it has been an extraordinary successful program, and I wanted to thank you for your commitment to it, and your willingness to come and share your thoughts with us today.

I do want to make one thing, however, clear, and that is that if there has been a failure in the 1996 Safe Water Drinking Act, much of it has been the result of problems that we have had with the prior administration carrying out the 1996 Act as we intended it.

When it comes to this arsenic rule, for example, the prior administration was 1 year late in establishing the research plan, the scientific research plan, that was going to form the basis of this rule.

And the former Chairman of this committee every year had to write EPA to complain about recommended cuts in the funding of that basic scientific research, and delays in the distribution of those research funds.

It was the intent in 1996 to let science make the judgment on whatever level the 50 parts per billion would be lowered to, and to make that a correct scientific decision—as you have pointed out—because of the extraordinary expense in achieving this lower level all over this country, in water districts throughout America.

And it was our intent then that science drive the standard, and EPA simply punted and punted, and this committee had to contin-

ually complain to EPA for its cuts in that research funding. It was no surprise to us, then, that the rule was issued in the last few days of the last administration. It was not even published until after President Clinton left office.

So frankly, I want to commend you for putting science back into the process, and leaving science fiction where it belongs, in Hollywood.

And for making sure that when we come up with the rule, which won't be effective as you point out until 2006, that it is the right number, whatever that number is, whether it is 10, 12, 6, 3. You have got it just right. And I hope that your administration, and I know it will, will begin to rely upon real science rather than a phony science or science fiction to make these judgments.

More importantly, I hope that when we pass statutes like the 1996 Act, and that Congress instructs very specifically on deadlines and dates to establish things like a scientific research plan, that the EPA under your administration will meet those deadlines. Can we have that kind of assurance from you?

Ms. WHITMAN. You will certainly have my commitment to do our very best at that.

Chairman TAUZIN. We always get that assurance.

Ms. WHITMAN. Well, when you are dealing with a scientist, sir, sometimes they push back at you in ways that I am not competent to second-guess.

Chairman TAUZIN. I know, but do you understand that in 21 years on this committee that one of our biggest problems with every EPA administration has been the fact that when we tried to set deadlines for things as important as a scientific research plan that backs up an arsenic regulation, that those deadlines are always missed, and we always end up as we found ourselves at the end of this last administration, seeing a rule that may not have had the proper time to be vented and understood properly before it was promulgated?

Ms. WHITMAN. Mr. Chairman, if I might, the commitment that I will make to you is if we can't meet a deadline, you will know it up front, and as you establish those deadlines, if there is anyone who is telling me that that is too tight a deadline, that for some reason, scientific or otherwise, that it is impossible to meet, I will certainly let you know. Otherwise, we take it as our obligation to meet those deadlines.

Chairman TAUZIN. And sometimes it is our own fault when we set a deadline that doesn't take that into account. I give you my word, as I know the chairman will give you his word, that we will always consult with you as we go forward on fixing these deadlines, and trying to make sure that they are realistic, and that you have the resources to meet them.

And we had to do that with the Firestone issue recently when we put a significant amount of funds into NITSA to make sure that they could meet the standards of that new Act for Highway Safety.

And we obviously have the same concerns here. When it comes to safe drinking water, obviously we are not talking about a nice thing to do. We are talking about something that critically impacts the health of all Americans, men, women, and children.

And so this is a critical area, where we know that the science has to be right, and I basically wanted to take a few minutes that I had to welcome you and ask for your continued cooperation. I know that you have offered it privately and publicly to help us do our work.

But most importantly to encourage you, and not to be deterred by critics who complain that you are going to take your time and do this thing right. Do it right, and make sure that science is the basis of your decision.

And I guarantee that this committee will back you up when that is apparent to us in whatever decisions that EPA makes for the good of our country. I thank you very much, Mr. Chairman, and I yield back my time.

Mr. GILLMOR. The gentleman yields back. The gentleman from California, Mr. Waxman.

Mr. WAXMAN. Thank you very much, Mr. Chairman. Mrs. Whitman, you have been the Administrator of the EPA for less than 2 months; isn't that correct?

Ms. WHITMAN. That's correct.

Mr. WAXMAN. This drinking water standard for arsenic has been in the works for 10 years. During those 10 years the professionals at EPA heard from all the different parties that had something to say about the matter.

They heard from the scientists, and they heard from the industry, and they heard from the communities, and they came up with a clear decision that it ought not to be 50 parts per billion, but 10 parts per billion.

But the industry said we may need some more time to comply. So EPA, before you got there, said all right. You have until 2006 to comply, but the effective date was March 23, 2001.

So when you talk about an effective date, and when you talk about there is no loss of time, that can't be true, because if the rule is effective on March 23, that means that is when they have to start complying. And the absolute deadline for complying is 2006.

If you pull back that regulation, there is no deadline. There is no standard, except the old one that was set in 1942 at 50 parts per billion; isn't that accurate?

Ms. WHITMAN. We will ensure that we have enforcement ready for 2006, the same as this particular rule would have required. We do have a June 22nd deadline that you extended as a courtesy to the last administration for a year last year.

I will obviously work with you to see if we can get the same kind of extension to do this. I just want to make sure that we have done everything that we need to do to be able to have all the information necessary to make the best possible decision, including as we are required to do by law what the whole fiscal impacts are.

And again while the staff has definitely done a fiscal impact, and they have looked at what the potential impact is, they then did an averaging across the country, and when you look at how that comes into effect, it is very different.

Mr. WAXMAN. Let me—excuse me, because I have a limited time. I just want to point out to you that the General Accounting Office reviewed the EPA's decision that was promulgated and that you

have now lifted off the calendar, and the GAO said that the EPA has done an effective cost benefit analysis.

They have got a long and complete record of many years, and so in 2 months you have come in and pulled off the regulation that was supposed to protect the public health. Now, I have to tell you that I cannot ignore the fact that the mining industry gave $5.6 million to the Republican Party.

The chemical industry gave $9 million to the Republican Party. You maybe did not read any letters from the mining industry, but they were on file at EPA. It was well known that they did not like this regulation. They even filed a lawsuit about it.

So I know that Mr. Dingell has sent a letter to you, and I think we ought to have an answer to it, that would tell us who met with your staff, who did the White House people talk to within the industry, and get a complete record of their influence in what is clearly to me a huge giveaway to the mining industry and to the chemical industry, I believe at the expense of the health of the American people.

They are not going to be able to comply by 2006 unless you give them a standard, and the standard has been set and ought to be at 10 parts per billion. Isn't it accurate that when you were Governor of New Jersey that you set a standard of 10 parts per billion?

Ms. WHITMAN. As an advisor, yes, absolutely. We are in the fortunate position of not having a lot of naturally occurring arsenic. We were able to do that, and we think it is appropriate. That's why I am not adverse to 10 parts per billion, but I have a responsibility——

Mr. WAXMAN. Wasn't that based on sound science?

Ms. WHITMAN. It was based on where we thought things were going, but we had no definitive scientific report that said 10 parts per billion is the measurement at which you are fully protecting public health; and at 11 or 12, you are endangering people, and at 7 or 9, they are very healthy.

We did not have that. We just took it. And, Congressman, I don't disagree with you that there are other States that have done the same thing, which shows you that people do want to do the right thing, but we have a responsibility——

Mr. WAXMAN. States want to do the right thing because they are waiting for the EPA to set a national standard. Everyone in this country ought to be protected from levels of arsenic in their drinking water that could endanger people's health.

Ms. WHITMAN. I could not agree with you more. I could not agree with you more, and we will, and I do believe that the companies are going to be able to reach that goal. They could do it in 3 years.

Mr. WAXMAN. But you don't need them to do it by then. That is the last deadline for them to do it. They could start doing it now if EPA would set the standard at 10 parts per billion, and they could start meeting that standard now. And the deadline for all of them to meet it is in 2006, and a lot of them would meet it long before.

Ms. WHITMAN. I wish that were the case, but I doubt that you would see that, and Congressman, just as I would never—I would hope that we would all understand that no one, and particularly

this administration, would jeopardize the public health because of campaign contributions.

I don't see that happening as decisions are made, where unions have given great deals of contributions. I don't see anybody making a decision that would jeopardize the public health on that. That is simply not what any administration would do, and we did no do this.

As I indicated to you, when this decision was presented to the White House, they were concerned about that. They wanted to make sure that I was comfortable with that.

Mr. GILLMOR. The gentleman's time has expired.

Mr. WAXMAN. One last sentence, Mr. Chairman. I can't ignore the fact that contributions were there. I just also want to comment about your statement about why didn't you get praised for not rolling back the pesticide regulations.

Ms. WHITMAN. No, just recognition.

Mr. WAXMAN. The recognition shouldn't be that you should be praised for not rolling back more environmental protections. You should be criticized if you have rolled back environmental protections that are needed to protect the public, and I don't think you ought to be complimented for not doing worse.

Ms. WHITMAN. If we do, you can criticize us.

Mr. GILLMOR. The gentleman's time has long since expired. The gentlelady from New Mexico.

Mrs. WILSON. Thank you, Mr. Chairman. Before I interrupted Mr. Waxman, I was hoping that I could get some chocolate, and I was very disappointed that I wasn't given that opportunity.

Sometimes I wonder how it is that I could be seeing something from such a completely different perspective, and in this job you end up dealing with thousands of issues and some you really have to focus on because they are extremely important to your constituents.

And I find myself in a hearing here today with a completely different perspective, and I asked my staff to go up and pull up my file from last year when we started looking at this from a public health point of view, and a science point of view to benefit the citizens of the State of New Mexico.

There are several things that I would like to enter into the record with unanimous consent, Mr. Chairman. And I think I have now figured out one of the reasons, anyway, why I have this very different perspective.

And that is that if you look at the East Coast and the West Coast, less than 3 percent of your water systems are going to be even affected. So what do you care? It is a bunch of New Mexicans that are going to have to pay for this.

And it is us in New Mexico who show no adverse health effects at levels between 2 parts per billion, and 50 parts per billion. The question then becomes why. What is different?

I would like to put several things into the record. One is a letter from the Mayor of the Village of Los Lunas explaining what this will do to the Village of Los Lunas, which is a little place south of Albuquerque.

The second is a letter from the State Water Commission, the Water Quality Commission in the State of New Mexico, which is

responsible for water quality in the State of New Mexico, which expresses significant concern about the science behind the rule and the science at what level the arsenic level should be set at between 2 parts and 50 parts.

The third letter is from the Mayor of the city of Albuquerque, whose name is Jim Baca. He is a Clinton appointee in the Bureau of Land Management, and strongly supported by the environmental movement in this country, who with the entire set of mayors in the Rio Grande River Valley is opposed to setting the arsenic standard at this level for reasons based on science and public policy.

And I have to tell you that I looked down this list, and I don't see many Republican mayors on the list. We don't have too many in the State of New Mexico.

Mr. GILLMOR. Does the gentlelady request unanimous consent?

Mrs. WILSON. Yes.

Mr. GILLMOR. Without objection, and the Chair hearing none, they shall be entered in the record.

[The information referred to follows:]

FEB 1 4 2001

Village of Los Lunas

660 MAIN STREET
P.O. BOX 1209
LOS LUNAS, NEW MEXICO 87031

PHONE: (505) 865-9689
FAX: (505) 865-6063

ADMINISTRATION DEPARTMENT

February 7, 2001

Ack by Phone

The Honorable Heather Wilson
U.S. House of Representatives
318 Cannon House Office Building
Washington, D.C. 20510-3101

Dear Congresswoman Wilson:

In our capacity as the governing body of the Village of Los Lunas, we are writing to express our dire concern over the recent lowering of the arsenic standards to 10 micrograms per liter (µg/l) for public water systems. We are aware of your concerns in support of the plight of New Mexico's communities on this issue, and applaud the recent efforts with the introduction of legislation by Senator Domenici which would eliminate the lowering of the arsenic standards completely.

Based on our perspective and specific conditions in serving our 10,000 residents, we respectfully suggest the following would be our "preferences" or "best outcomes" regarding the arsenic issue:

1. Highest Priority – Not Lowering the Standard At All

   Without good science which can serve to demonstrate conclusively that there is a significant health risk associated with the current standards of 50 µg/l, we are not in favor of "guessing" which standards may be the best. The fact is that customers have to pay for the expensive treatment to remove the arsenic, and we should not ask them to pay for this treatment if we are not sure it will even make a difference to their health. Obviously, we are all willing to do whatever it takes to protect the health and welfare of our citizens, but we should not tax them for systems that may not be needed.

LOUIS F. HUNING
MAYOR

PHILLIP JARAMILLO
VILLAGE ADMINISTRATOR

CHARLES GRIEGO
COUNCILMAN

ROBERT E. VIALPANDO
COUNCILMAN

GERARD SAIZ
COUNCILMAN

CECILIA CC CASTILLO
COUNCILWOMAN

2. Second Priority – Not Lowering the Standards So Drastically (maximum of 25 μg/l)

The Village of Los Lunas depends on groundwater wells as our only supply of water for our citizens. Tests on the water drawn from our wells indicate arsenic levels ranging from 12 μg/l to 20 μg/l. If the recently mandated standards of 10 μg/l remains in effect, our engineer's estimate to build the treatment facilities required for compliance is approximately $15 million. Furthermore, the development of any new future wells will quadruple to a cost of $4 million each. These costs would be extremely difficult for our residents to absorb. Although we have not performed a specific rate analysis for this situation, absorbing the debt retirement for this arsenic removal would probably increase our current monthly user rates by 300% or more.

If the arsenic standards must be lowered, we would prefer that the standard not be set any lower than 25 μg/l. Even though our current water supply has arsenic concentrations ranging from 12 to 20 μg/l, there is no guarantee that these concentrations would not increase as the wells are pumped more and more in the future. Setting the standard at 25 μg/l would likely avert the burden on the Village of spending $15 million to build an arsenic removal system.

2. Third Priority – Establishment of a Grant Program for Arsenic Removal

If the standard is left at 10 μg/l and we are forced to comply with this federal mandate, we believe the federal government should establish a grant program to assist communities like ours in planning, designing, and building the facilities necessary for compliance with such a standard. We would envision a program similar to the EPA Construction Grants Program established in the 1970's to assist communities with the funds necessary for construction of wastewater treatment facilities required to comply with the newly-established Clean Water Act at that time.

We trust the information contained in this letter is both clear and helpful. As you well know, this is a very critical issue for us in New Mexico. We would certainly be happy to provide any additional information you may require, or would be willing to travel to Washington, D.C. to provide any needed testimony, if such a trip would be helpful. Please feel free to contact Mayor Louis Huning or Mr. Phillip Jaramillo, our Village Administrator, at 505-865-9689 with anything more we can do to prevent the communities of New Mexico from the potential burdens which will be created by the new arsenic standards.

The Honorable Heather Wilson
February 7, 2001
Page 3

Thank you for your attention and cooperation in this matter. We are always very appreciative of your hard work in representing the citizens of New Mexico.

Respectfully submitted,

THE VILLAGE OF LOS LUNAS, NEW MEXICO

Mayor Louis F. Huning

Charles Griego
Village Trustee

Phillip Jaramillo, CMC
Village Administrator

Gerard Saiz
Village Trustee

Cecilia "CC" Castillo
Village Trustee

Robert Vialpando
Village Trustee

FYI

APR 3 2000

STATE OF NEW MEXICO
WATER QUALITY CONTROL COMMISSION
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-2425

CONSTITUENT AGENCIES:

Environment Department
State Engineer & Interstate Stream Commission
Game and Fish Department
Oil Conservation Division
Department of Agriculture
State Park & Recreation Division
Soil and Water Conservation Bureau
Bureau of Mines and Mineral resources
Member-at-Large

Wednesday, March 29, 2000

The Honorable Heather Wilson
United States House of Representatives
226 Cannon House Office Building
Washington, DC 20515

Dear Representative Wilson:

Attached for your information is the Executive Summary from the recently approved New Mexico Water Quality Control Commission's 2000 Clean Water Act §305(b) Report to the U.S. Congress, *Water Quality and Water Pollution Control in New Mexico*. The report will be submitted to the US Environmental Protection Agency (EPA) on April 1, 2000. The Summary includes specific recommendations to the U.S. Congress and the EPA on issues that are of urgent importance to the Citizens of New Mexico.

Although all of the water quality problems highlighted in the Summary are of vital importance to New Mexico, the Commission is very concerned that three distinct issues require your particular attention: 1.) proposed changes in the national arsenic standard, 2.) Indian tribal funding needs, and 3.) severe constraints imposed on the State by underfunding the National Pollution Discharge Elimination System (NPDES) permit program.

As highlighted in the Summary:

The U.S. Congress should delay the Safe Drinking Water Act requirement for a new arsenic drinking water standard until EPA can demonstrate a need for a new standard based on epidemiological evidence collected in the United States.

The U.S. Congress should provide sufficient dedicated funds to Indian tribes so that they can develop and implement an effective water quality management program. These funds should be in addition to, not in place of, monies allocated to the states.

The U.S. Congress should provide adequate funding to the federal and state agencies charged with administering the NPDES permit program so that the enormous backlog of out-of-date NPDES permits might be promptly reduced and then in the future all permits may be renewed on a timely basis.

We urge you to carefully review the attached Executive Summary from the 2000 CWA §305(b) Report to the U.S. Congress. This Summary is also currently available over the internet at our download website,

ftp://www.nmenv.state.nm.us/docs/swqb/305b/2000/Summary.pdf.

Please reply directly to James H. Davis, Ph.D, Bureau Chief of the Surface Water Quality Bureau on my staff via e-mail (*james_davis@nmenv.state.nm.us*) or by telephone (827-0187) should you have questions, comments or require further clarifications. Thank you.

Sincerely,

PAUL RITZMA
WQCC Chairman and Deputy Secretary, NMED

PR:gk

Attachment (1)

cc: WQCC Members:
Thomas C. Turney, State Engineer
Lori Wrotenbery, Oil Conservation Commission
Thomas Trujillo, State Parks Division
Frank A. Dubois, Department of Agriculture
Jerry Maracchini, Department of Game & Fish
Dusty Hunt, Soil & Water Conservation Commission
Peter Scholle, Bureau of Mines & Mineral Resources
Irene Juliana Lee, Public Member-at-Large
Alberto Gutierrez, Public Member-at-Large
Paul Gutierrez, Public Member-at-Large

EXECUTIVE SUMMARY

PART 1: SURFACE AND GROUND WATER QUALITY

SURFACE WATER QUALITY

Information about surface water quality throughout New Mexico is based on the results of the New Mexico Environment Department's (NMED) intensive surveys, water quality monitoring of projects under the State's Nonpoint Source Pollution Management Program, Total Maximum Daily Load surveys and studies, preliminary statewide studies of mercury in fish tissues, water quality monitoring conducted under the National Pollutant Discharge Elimination (NPDES) System program and review of physical and chemical data entered by various agencies into the United States Environmental Protection Agency's (EPA) database.

Conclusions concerning attainment of fishery uses is based on water quality analyses; where available, biological data were used to verify these results.

From a total of over 5,875 perennial stream miles, almost 3,080 assessed miles, or 52%, have some level of threatened or impaired designated or attainable uses while 124,140 out of a total of 148,883 lake acres, or 83%, do not fully support designated uses. Of the river miles that are impaired, designated uses in 1,247.45 river miles were partially supported; in 1,427.7 river miles, pollution was such that one or more designated uses were not supported.

Of the lake acres impaired, designated uses were not supported in 1,960 acres. The remaining impaired acres still provided partial support for designated uses.

Reported sources of water quality impairment in New Mexico are diverse and include agriculture, recreation, hydromodification and resource extraction. Causes of impairment include toxic metals, temperature, plant nutrients, bottom deposits and other causes. Over 91% of all water quality impairment identified in New Mexico's rivers is due to nonpoint sources of water pollution. All of the known lake water quality impairment is due to nonpoint source water pollution.

In 1994-1995, the State of New Mexico issued fish consumption advisories for 23 lakes and reservoirs and one river due to elevated mercury concentrations in fish. Twenty five lakes were added to the 1998 CWA §303(d) list fish consumption advisories for mercury, even though the water quality standard for mercury was not exceeded in these lakes.

Estimates by the United States Forest Service (USFS) based on comparing the extent of hydric soils in the State to the extent of present wetlands show that New Mexico's wetlands, which currently total approximately 481,900 acres, have been reduced over 33% since the 1780s. Due to these historical trends, point and nonpoint pollution and drainage, all wetlands are considered threatened in New Mexico.

GROUND WATER QUALITY

Approximately 90% of the population of New Mexico depends on ground water for its drinking water. The water quality for the 81% of the population utilizing ground water sources from public water supplies is monitored routinely. Nearly one half of the total water used for all purposes in New Mexico is ground water. In many locations, ground water is the only available supply.

Ground Water Contamination Inventories

NMED maintains an ongoing inventory of known ground water contamination cases in the State. At least 1,235 cases have been identified from 1927 through December 1999, with 188 public and 1,907 private water-supply wells impacted. Ground water contamination most frequently occurs in vulnerable aquifer areas where the water table is shallow.

Causes and Sources of Ground Water Contamination

Approximately 13% of ground water contamination in the State has been caused by nonpoint sources, predominantly small household septic tanks or cesspools. Nonpoint source contamination may be caused by diffuse sources such as large numbers of small septic tanks spread over a subdivision, residual minerals from evapotransporation, animal feedlot operations, areas disturbed by mineral exploration and/or storage of wast products, urban runoff or application of agricultural chemicals.

Point sources are discharges at specific identified locations such as surface impoundments, landfills, and injection wells. Accidental spills and leaking underground storage tanks account for almost half of all point source contamination.

Public Drinking Water Systems

The 1996 reauthorization of the federal Safe Drinking Water Act (SDWA) mandates that EPA set new or revised standards for two constituents which are naturally occurring in New Mexico ground water: radon and arsenic.

EPA must promulgate a standard for radon by December 2000, with a proposal by August 1999. There is at present no drinking water standard for radon. Radon is an important issue for this state. Present sampling data suggest that radon could possibly be evident in 84% of New Mexico's water supply wells. Annual treatment costs to remove radon could be substantial, depending on the level at which EPA sets the standard.

EPA promulgation of a revised regulation for arsenic has been mandated for no later than January 1, 2001. Like radon, the costs to remove arsenic could be substantial depending on the level at which EPA sets the standard.

PROGRAMS FOR WATER QUALITY ASSESSMENT

Surface Water Quality Assessments

The State uses a wide variety of methods for assessment of its water quality. Second-party data including discharger's reports, published literature, data stored in EPA's database as well as data generated by the United States Geological Survey (USGS) are routinely reviewed. NMED generates large amounts of data through intensive surveys, assessment of citizen complaints, special studies aimed at areas of special concern (e.g., mercury concentration in fish), volunteer monitoring programs, short and longterm nonpoint source pollution monitoring and effluent monitoring.

Ground Water Monitoring and Data Management

Ground water quality monitoring is carried out under many of the State ground water quality protection and remediation programs and by the USGS. The scope and variety of ground water quality investigations in New Mexico has created the need for computerized data management. NMED is committed to agency-wide improvements in information management in order to reduce the burden on staff, the regulated community and other stakeholders. Through a *OneStop* grant from EPA, the initial steps of this process have been made to centralize environmental data. NMED is beginning the process that will result in the purchase and modification of an integrated environmental database system. Incorporating groundwater monitoring data as well as the other core needs of NMED, this system will result in improvements in the way that the public obtains environmental data from the agency.

PROGRAM EVALUATION

Surface Water

Various qualitative and quantitative measures have been used by EPA, the states and others to measure the effectiveness of water quality management programs. The cost of administering these programs continues to grow at a steady rate. The primary function of these programs is to maintain suitable water quality necessary to protect existing, designated or attainable uses. New Mexico was one of the first states to have all of its municipalities achieve secondary treatment capability. In general, "major" dischargers normally do a good job of meeting permit requirements while "minor" dischargers continue to have noncompliance problems which are not being completely addressed due to EPA enforcement policies.

Nonpoint source water pollution in New Mexico is receiving ever more attention. Significant efforts have been initiated by the United States Forest Service (USFS) in cooperation with NMED in a large number of different settings, to reduce and eliminate such pollution in a number of the State's highest quality waters. These efforts have led in several cases to the elimination of longstanding nonpoint source problems.

Ground Water

Measures of ground water protection programs effectiveness are documented through site-specific monitoring at permitted facilities and facilities that are abating ground water contamination. Although there is no overall index to determine the rate at which ground waters are polluted or remediated, state and federal programs that ensure the quality of the state's ground water have been successful in both ground water quality protection and clean-up efforts.

Indian Tribes

The funding set-asides for Indian tribes in the CWA puts tribes in direct competition with the states for the limited available federal funds. The funding provided to tribes is inadequate to develop or implement effective water quality programs.

The United States Congress should provide sufficient dedicated funds to Indian tribes so that they can develop and implement an effective water quality management program. These funds should be in addition to, not in place of, monies allocated to the states.

Funding

1. Technical information in many areas is essential to any state water pollution control program. These areas include sampling and monitoring technology, containment and remediation technology, risk assessment, and standards development. Such information is of wide applicability and would be useful to all states. It is more desirable for federal agencies to assemble and disseminate this information than for states to utilize their limited resources on such projects.

The United States Congress should provide adequate funding to federal and state agencies including universities and other publicly-funded institutes to foster and support basic ecological, hydrologic, medical, public health, and other research efforts relevant to water quality protection and to support technical assistance and technology transfer to the states.

2. The CWA requires all municipal wastewater treatment plants to meet secondary treatment standards as defined by federal regulations. Over the past two decades, an enormous investment of public funds has been made by federal, state and local governments to construct a national wastewater treatment infrastructure that would meet this goal. However, once constructed, the effectiveness and longevity of this wastewater infrastructure is heavily dependent upon the skill and competence of the operators who maintain it. In fact, the absence of effective operation and maintenance programs has been implicated as the primary cause of most NPDES permit noncompliance nationwide as well as in New Mexico. Thus, the lack of good operation and maintenance at treatment facilities both jeopardizes the attainment of secondary treatment and reduces the benefit of the huge expenditure of public funds made to achieve this goal.

The United States Congress should provide additional dedicated funding to state-operated programs which address the operation and maintenance of wastewater treatment facilities in order to prevent water pollution and National Pollutant Discharge Elimination System permit noncompliance.

3. Section 402 of the CWA states NPDES permits "..are for fixed terms not exceeding five years." Title 40 Section 122.6 of the *Code of Federal Regulations* allows for the administrative continuance of expired permits beyond five years under specified conditions including but not limited to timely reapplication by the permittee. Permits are often continued due to lack of resources to prepare renewed permits. Currently, approximately 90% of the individual NPDES permits in New Mexico are five or more years old. Outdated permits may not be protective of current water quality standards adopted by the State and revised once every three years in accordance with Section 303 of the CWA.

The United States Congress should provide adequate funding to the federal and state agencies charged with administering the NPDES permit program so that the enormous backlog of out-of-date NPDES permits might be promptly reduced and then in the future all permits may be renewed on a timely basis.

Hazardous and Radiological Waste

CWA § 303(c) and its implementing regulations at 40 CFR 131 require states to develop and implement water quality standards with sufficient criteria to protect designated uses. Among the pollutants of ecological and human health concern are natural and manmade or concentrated radioactive compounds. CWA § 502(6) currently recognizes 'radioactive materials' as a 'pollutant'; yet the Atomic Energy Act (42 U.S.C. 2011 et seq.) exempts certain of these compounds. Consequently, pollutants such as plutonium and enriched uranium are not yet regulated under the NPDES system.

The Atomic Energy Act should be amended to require the NPDES permit to be the sole regulatory vehicle for any point source discharge of any pollutant to "waters of the United States."

Drinking Water Standards

The EPA is considering drafting new national drinking water standards based on preliminary arsenic studies without sufficient scientific warranty to base those standards on. More stringent drinking water standards would be extremely costly to the Citizens of New Mexico. Capital costs will likely range from $250 million to over $500 million, depending on where the standards are set. Annual operating costs could range between 2 – 5% of capital costs. It is likely that there will be no measurable benefits (as opposed to calculable benefits such as reduced risk) associated with a lower standard. There is no conclusive evidence, and no evidence whatsoever in the United States, to show that arsenic at the current maximum contaminant level (MCL) poses a risk to human health of greater than 10^{-4}, the value which has been accepted by EPA as providing adequate safety to consumers.

The United States Congress should delay the Safe Drinking Water Act requirement for a new arsenic drinking water standard until EPA can demonstrate a need for a new standard based on epidemiological evidence collected in the United States.

Sludge Management

Beginning in 1987, EPA has incorporated by reference the sludge regulation requirements of 40 CFR 257 or, as appropriate, 40 CFR 503 into NPDES permits issued in New Mexico. These regulations broadly cover areas such as pathogen control, safety, ground water protection, endangered species, floodplains, and surface water. New Mexico has had an effective ground water protection regulatory program in place since 1977. Because the State ground water regulations do not address certain areas such as pathogen control, the federal and State ground water protection programs are not completely equivalent. Thus, compliance with one program does not ensure compliance with the other. EPA's advance into the area of ground water protection has resulted in a duality of regulations for sludge disposal with regard to ground water protection.

EPA should ensure that federal sludge regulations and the administration of federal sludge programs do not result in dual regulation or undermine existing state programs. This can be achieved by federal regulations which provide that a state ground water program which satisfies national minimum requirements becomes the basis for cleanup or control under any and all federal programs relating to ground water protection in that state. The regulations developed should focus primarily on public health protection and on surface and ground water protection.

Indian Tribes

The 1987 Amendments to the CWA and the 1986 Amendments to the SDWA allows EPA to treat Indian tribes as states. The tribes have indicated a great interest in receiving technical assistance from EPA, especially for water quality standards development and implementation. In some cases, for example arsenic in the Middle Rio Grande Basin of New Mexico, tribal water quality standards have been adopted that are far more stringent than existing background conditions, by three orders of magnitude, and are thus unattainable.

The CWA also provides that EPA shall provide a "*...mechanism for the resolution of any unreasonable consequences that may arise as a result of differing water quality standards that may be set by States and Indian Tribes located on common bodies of water.*" The CWA provides that relevant factors include the effects of differing water quality permit requirements on upstream and downstream dischargers and economic impacts.

EPA should, in keeping with its trust responsibility to tribes, work with the tribes to ensure that water quality standards and programs adopted by the tribes are scientifically defensible and technically achievable.

Reporting Criteria

Salt cedar invasion and infestation is one of the significant contributors water quality impairment in New Mexico. Yet, no water quality impairment code for sources exist except *hydromodification*, and *removal of riparian vegetation* to classify this threat to the native riparian biome and its associated water quality. Exotic vegetation invasion and displacement of native riparian vegetation poses a significant threat to maintenance of New Mexico's water quality.

EPA should review and amend the Codes of Designated Uses and Nonpoint Sources of Pollution to:

1. ***Include source codes for*** **Improper Functioning Watersheds, Wildlife Management *and* Fish Hatchery Operations*;***
2. ***Break out*** **Natural Sources *from general heading code* Other *and make it a general heading code with appropriate subcodes;***
3. ***Exotic noxious weeds should be placed under the general heading*** **Other*; and***
4. ***Disclose omission sources.***

City of Albuquerque
P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

ENTERED
AUG 0 9 2000
Heather Wilson, MC

August 4, 2000

Carol M. Browner
1101A
USEPA
Aerial Rios Building
1200 Pennsylvania Avenue, NW
Washington, DC 20406

Re: EPA Proposal to Lower Drinking Water Standard for Arsenic

Dear Ms. Browner:

The villages and municipalities in the Middle Rio Grande valley are committed to protecting the health and welfare of our citizens and appreciate the opportunity to submit written comments regarding the proposed revision to the drinking water standard for arsenic. Our communities, which serve more than 750,000 residents, rely on ground water as our primary drinking water source. Naturally occurring arsenic is prevalent in our ground water with concentrations ranging from 2 to 50 parts per billion (ppb). The EPA proposal to lower the maximum contaminant level (MCL) from 50 ppb to 5 ppb will impact more than 70% of the wells with an estimated cost of compliance between $ 200 and $ 450 million.

We are gravely concerned about the economic impacts that this revision will have in the Middle Rio Grande and throughout New Mexico. It is our understanding that there have been no studies completed in the United States that link arsenic in drinking water to an increased risk of cancer. The one U.S. study completed in Millard County, Utah showed no correlation between arsenic in drinking water and increased risks of cancer. Given the uncertainty in the model used to extrapolate the Taiwan data from high to low doses, EPA concludes that "decisions about safe levels are public health policy judgements".

We question the need to invest millions of dollars for unnecessary capital infrastructure in addition to ongoing operation and maintenance costs based on EPA's policy judgement. We would rather have the necessary scientific studies completed before we are required to double our water rates. Therefore, we ask that the implementation of the arsenic rule be delayed until these studies are completed as mandated by Congress.

We will be developing and submitting detailed comments regarding the proposed rule. Because we have invested a significant amount of time and money in preparation of the comments, we strongly urge that EPA thoroughly evaluate our comments and respond in writing. We feel strongly that our comments will raise significant doubts as to the need to implement the standard

as proposed and recommend that if a new standard is to be adopted, EPA should delay implementation until the aforementioned studies are complete.

Please do not hesitate to contact us if you have any additional questions or comments.

Sincerely,

Jim Baca, Mayor
City of Albuquerque

Gary Kanin, Mayor
Village of Corrales

Ms. Gloria Chavez, Mayor
Village of Tijeras

Charles Aguilar, Mayor
Town of Bernalillo

Louis Huning, Mayor
Village of Los Lunas

John Jennings, Mayor
City of Rio Rancho

Ronnie Torres, Mayor
City of Belen

Roger Baldwin, Mayor
Village of Bosque Farms

John Hooker, Mayor
Village of Los Ranchos

cc: Senator Pete V. Domenici
Senator Jeff Bingaman
Congresswoman Heather Wilson
Congressman Tom Udall
James Taft, Office of Ground Water, USEPA

GARY E. JOHNSON
Governor

State of New Mexico
ENVIRONMENT DEPARTMENT
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502-6110

PETER MAGGIORE
Secretary
PAUL R. RITZMA
Deputy Secretary

Date: 1/17/01

To: Ms. Kristen Astor

FAX: 202-225-4975

Pages: 20

From: Pete Maggiore

Fax: 505-827-2836 Phone: 505-827-2855

Comments:

Kristen -
Heres some info on the problems w/ the 10µg/L arsenic standard.
Don't hesitate to call -
Pete

PS - Please say "hardy" to Heather —

FAX TRANSMISSION

SUMMARY OF EFFECT ON NEW MEXICO WATER SYSTEMS WITH ARSENIC MCL OF 10 µG/L

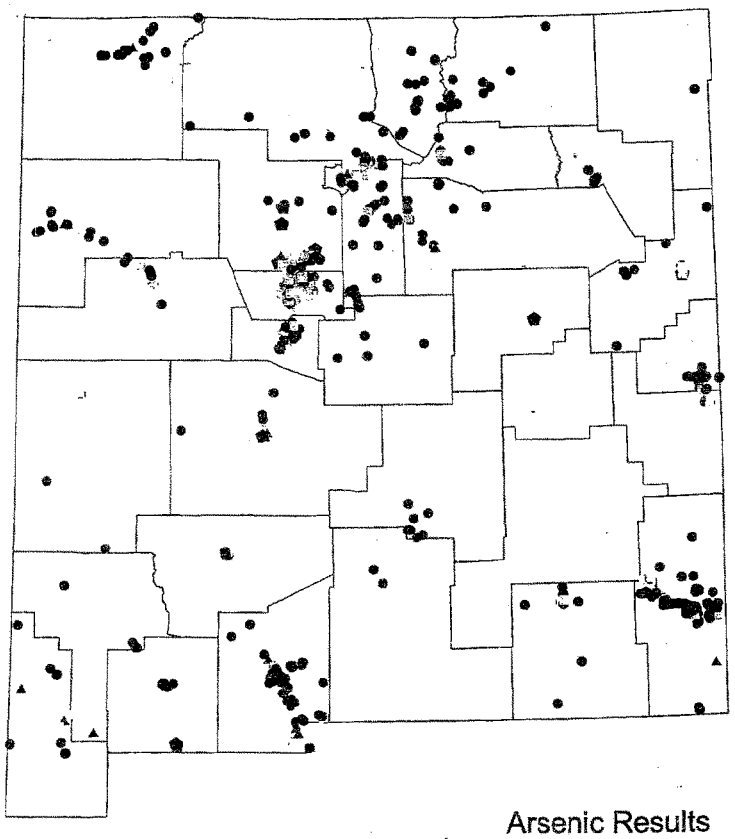
- The proposed arsenic rule states community water systems (C) must monitor, report, and treat (MCL violation) if above MCL. Non-transient non-community water systems (NTNC – mostly schools and workplaces) must monitor and report, but are not required to treat (no violation) if above MCL. However, public pressure will probably force NTNC to treat, particularly schools.

- Database query shows 101 C and 35 NTNC systems at 10 µg/l or above (list attached). This is about 16% of NTNC and 10% of C systems in the State.

- Systems affected are in all parts of state (maps attached).

- The US Western region is the second-highest overall in arsenic levels (regional comparison chart attached).

- Bitner calculates for MCL of 10 µg/l: capital costs of $374-436 million; annual O&M costs of $16-21 million; annualized costs of $49-59 million; average water bill monthly increase $38-42 for large system and $91 for small systems (summary displays of Bitner's results attached).



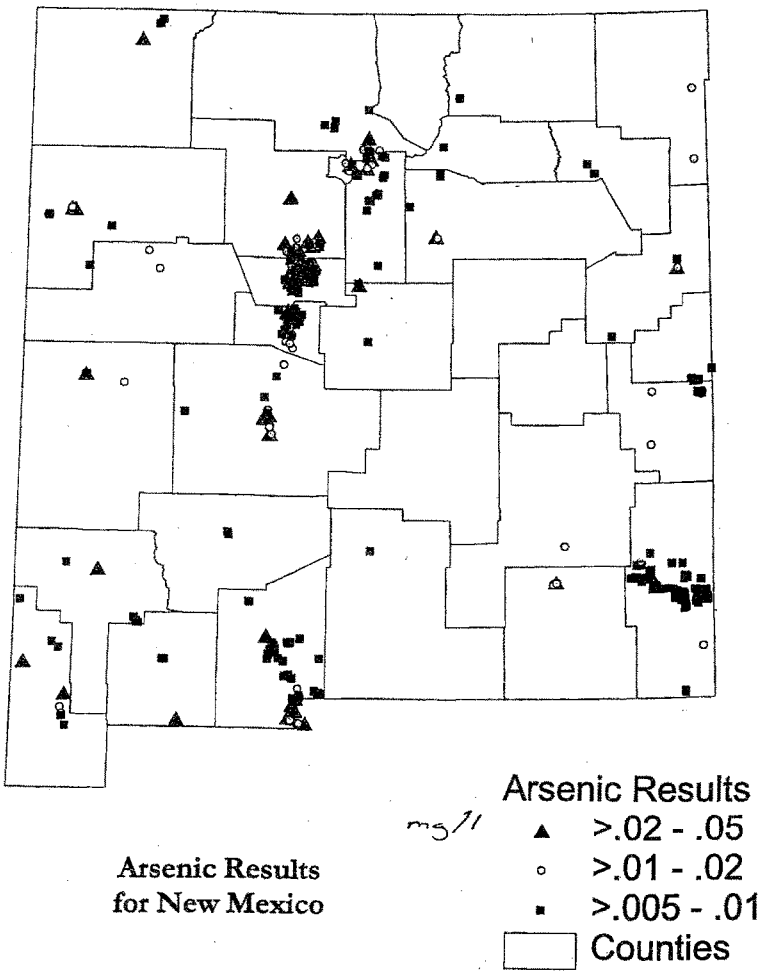
mg/l

Arsenic Results for New Mexico

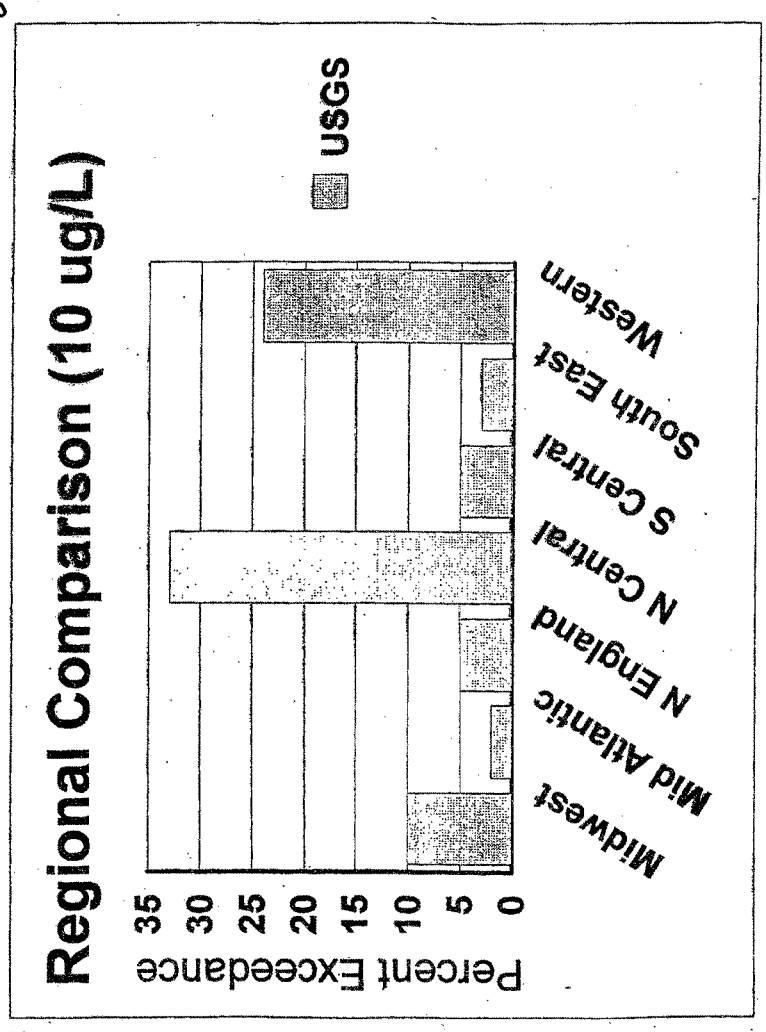
Arsenic Results
- ≥ 0.05 - 0.19
- ≥ 0.02 - 0.05
- ≥ 0.01 - 0.02
- ≥ 0.005 - 0.01
- Counties

d:\projects\arsenic\arsenic.apr (Layout1)

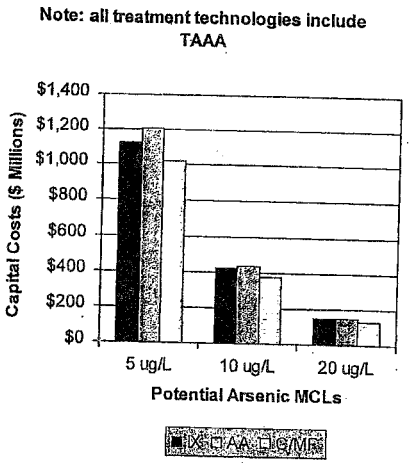
19 JUL 99 15:45



Arsenic Results for New Mexico

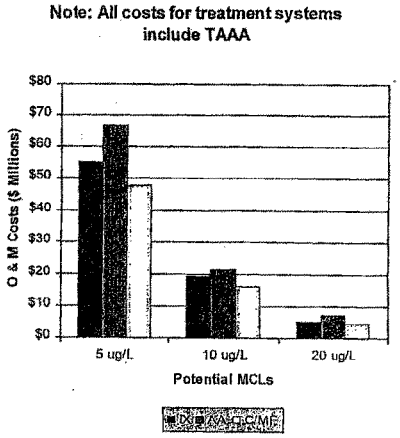

Regional Comparison (10 ug/L)
Percent Exceedance
35
30
25
20
15
10
5
0
USGS
Midwest
Mid Atlantic
N England
N Central
S Central
South East
Western

Capital Costs



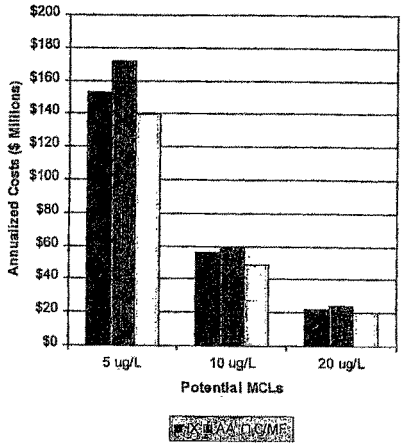
- At 5 μg/L: $1-$1.2 billion
- At 10 μg/L: $374-$436 million
- At 20 μg/L: $128 - $150

O & M Costs



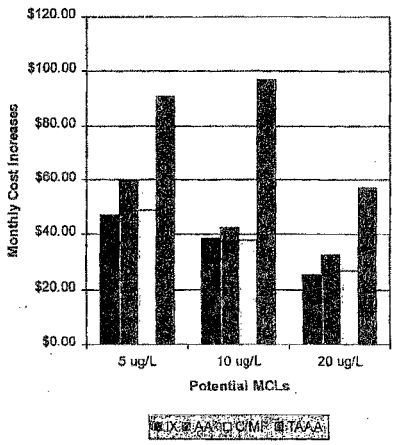
- At 5 μg/L: $48 - $67 million per year
- At 10 μg/L : $16 - $21 million per year
- At 20 μg/L : $5 - $7 million per year

Annualized Costs



- At 5 μg/L :$139 - $172 million per year
- At 10 μg/L : $49 - $59 million per year
- At 20 μg/L : $20 - $24 million per year
- EPA national: $442 million/year

Monthly Cost Increase in Cost of Water



- **At 5 μg/L: $47 - $59/month in large systems; $91/month in small systems**
- **At 10 μg/L: $38 - $42/month in large systems; $91/month in small systems**
- **At 20 μg/L: $25 - $32/month in large systems; $57/month in small systems**

C 101
NONC 35

New Mexico Public Water System Sampling Results

Code#	System Name		ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
98121	ABIQUIU ELEMENTARY SCHOOL NTNC		1	WELL # 1	20-may-1999	ARSENIC	C	.01		.005	MG/L
90732	ADELINO HEADSTART SCHOOL NTNC		1	WELL # 1	04-mar-1996	ARSENIC		.012			MG/L
					27-oct-1998	ARSENIC		.016		.005	MG/L
15918	AGUA NEGRA MDWCA	C	1	WELL # 2 (NEW WELL)	19-oct-1998	ARSENIC		.01			MG/L
10623	ALBUQUERQUE NORTH - KOA	C	1	WELL # 1	01-feb-1995	ARSENIC		.04			MG/L
					10-sep-1998	ARSENIC		.04		.005	MG/L
10701	ALBUQUERQUE WATER SYSTEM	C	1	ATRISCO # 1	07-aug-1997	ARSENIC		.023		.005	MG/L
					08-jun-2000	ARSENIC		.022		.001	MG/L
					12-apr-1994	ARSENIC		.017			MG/L
			2	ATRISCO # 2	07-aug-1997	ARSENIC		.01		.001	MG/L
			3	ATRISCO # 3	04-sep-1997	ARSENIC		.01		.005	MG/L
					12-apr-1994	ARSENIC		.01			MG/L
			4	ATRISCO # 4	04-sep-1997	ARSENIC		.011		.005	MG/L
					08-jun-2000	ARSENIC	CH	.01		.005	MG/L
					12-apr-1994	ARSENIC		.012			MG/L
			15	COLLEGE # 1	05-jun-2000	ARSENIC	IL	.051		.005	MG/L
					08-jun-1994	ARSENIC		.048			MG/L
					13-aug-1997	ARSENIC	C	.06		.005	MG/L
			16	COLLEGE # 2	01-dec-1998	ARSENIC	C	.016		.001	MG/L
					05-jun-2000	ARSENIC	I	.035		.005	MG/L
					08-jun-1994	ARSENIC		.035			MG/L
					11-jul-1997	ARSENIC	C	.032		.005	MG/L
			19	DURANES # 1	01-aug-1997	ARSENIC		.015		.005	MG/L
					17-apr-2000	ARSENIC		.013		.001	MG/L
					24-may-1994	ARSENIC		.017			MG/L
			20	DURANES # 2	24-may-1994	ARSENIC		.01			MG/L
			22	DURANES # 4	11-sep-1997	ARSENIC		.013		.005	MG/L
					17-apr-2000	ARSENIC	C	.014		.001	MG/L
					24-may-1994	ARSENIC		.014			MG/L
			23	DURANES # 5	16-jun-1994	ARSENIC		.013			MG/L
					17-apr-2000	ARSENIC	C	.01		.001	MG/L
					18-sep-1997	ARSENIC	C	.011		.005	MG/L
			25	DURANES # 7	16-jun-1994	ARSENIC		.011			MG/L
					17-apr-2000	ARSENIC	CH	.01		.001	MG/L
			26	GRIEGOS # 1	22-aug-1997	ARSENIC		.011		.001	MG/L
			29	GRIEGOS # 4	16-jun-1994	ARSENIC		.011			MG/L
					16-may-2000	ARSENIC		.013		.005	MG/L
					22-aug-1997	ARSENIC		.013		.005	MG/L
			31	LEAVITT # 1	08-jun-1994	ARSENIC		.038			MG/L
					18-apr-2000	ARSENIC		.048		.005	MG/L
					28-aug-1997	ARSENIC	C	.048		.005	MG/L
			32	LEAVITT # 2	08-jun-1994	ARSENIC		.029			MG/L
					18-apr-2000	ARSENIC		.034		.001	MG/L
					28-aug-1997	ARSENIC	I	.035		.005	MG/L
			33	LEAVITT # 3	08-jul-1994	ARSENIC		.029			MG/L

20-DEC-2000

New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
10701	ALBUQUERQUE WATER SYSTEM	33	LEAVITT # 3	18-apr-2000	ARSENIC		.041		.005	MG/L
				29-aug-1997	ARSENIC	H	.04		.005	MG/L
		52	MILES # 1	21-apr-1994	ARSENIC		.015			MG/L
				31-jul-1997	ARSENIC		.018		.005	MG/L
		53	PONDEROSA # 1	07-jun-2000	ARSENIC	CH	.016		.005	MG/L
				15-aug-1997	ARSENIC	C	.021		.005	MG/L
				31-mar-1994	ARSENIC		.025			MG/L
		55	PONDEROSA # 3	07-jul-1994	ARSENIC		.025			MG/L
				12-sep-1997	ARSENIC	I	.025		.005	MG/L
				15-may-2000	ARSENIC		.023		.001	MG/L
		56	PONDEROSA # 4	07-jul-1994	ARSENIC		.013			MG/L
				15-may-2000	ARSENIC	CH	.012		.001	MG/L
		57	PONDEROSA # 5	06-jun-2000	ARSENIC		.02		.005	MG/L
				22-aug-1997	ARSENIC		.023		.005	MG/L
				31-mar-1994	ARSENIC		.031			MG/L
		58	PONDEROSA # 6	15-may-2000	ARSENIC		.035		.001	MG/L
				22-aug-1997	ARSENIC	H	.037		.005	MG/L
				31-mar-1994	ARSENIC		.046			MG/L
		64	SAN JOSE # 2	11-apr-1994	ARSENIC		.015			MG/L
				15-may-2000	ARSENIC	C	.02		.005	MG/L
				29-aug-1997	ARSENIC		.024		.005	MG/L
		65	SAN JOSE # 3	14-apr-1994	ARSENIC		.031			MG/L
				15-may-2000	ARSENIC		.032		.005	MG/L
				29-aug-1997	ARSENIC	H	.037		.005	MG/L
		68	SANTA BARBARA # 1	02-may-2000	ARSENIC		.016		.005	MG/L
				07-jun-1994	ARSENIC		.016			MG/L
				18-sep-1997	ARSENIC		.012		.005	MG/L
		73	THOMAS # 5	07-jun-1994	ARSENIC		.013			MG/L
		74	THOMAS # 6	06-jan-1998	ARSENIC		.012		.005	MG/L
		75	THOMAS # 7	06-aug-1997	ARSENIC	C	.01		.001	MG/L
		76	VOL-ANOIA # 1	24-jun-1994	ARSENIC		.01			MG/L
		80	VOL-ANOIA # 5	26-may-1994	ARSENIC		.01			MG/L
		82	VOLCANO CLIFFS # 1	05-jun-2000	ARSENIC		.014		.005	MG/L
				07-aug-1997	ARSENIC		.014		.005	MG/L
				29-mar-1994	ARSENIC		.018			MG/L
		83	VOLCANO CLIFFS # 2	06-jun-2000	ARSENIC		.012		.005	MG/L
				27-aug-1997	ARSENIC		.012		.005	MG/L
				29-mar-1994	ARSENIC		.015			MG/L
		84	VOLCANO CLIFFS # 3	06-jun-2000	ARSENIC		.019		.005	MG/L
				08-jul-1994	ARSENIC		.02			MG/L
				27-aug-1997	ARSENIC		.019		.005	MG/L
		85	WALKER # 1	07-jul-1994	ARSENIC		.017			MG/L
				07-jun-2000	ARSENIC		.02		.005	MG/L
				21-aug-1997	ARSENIC		.021		.005	MG/L
		86	WALKER # 2	21-aug-1997	ARSENIC	C	.037		.005	MG/L

New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
10701	ALBUQUERQUE WATER SYSTEM	87	WEBSTER # 1	07-jun-2000	ARSENIC		.039		.005	MG/L
				28-aug-1997	ARSENIC	H	.04		.005	MG/L
		88	WEBSTER # 2	15-apr-1994	ARSENIC		.018			MG/L
				28-aug-1997	ARSENIC	C	.026		.005	MG/L
		89	WEST MESA # 1	07-jun-2000	ARSENIC		.031		.005	MG/L
				13-apr-1994	ARSENIC		.025			MG/L
		91	WEST MESA # 3	09-aug-2000	ARSENIC		.039		.001	MG/L
				10-jul-1997	ARSENIC	C	.038		.005	MG/L
				13-apr-1994	ARSENIC		.038			MG/L
		92	WEST MESA # 4	07-jun-2000	ARSENIC	CH	.042		.005	MG/L
				13-apr-1994	ARSENIC		.035			MG/L
				29-aug-1997	ARSENIC	H	.045		.005	MG/L
		94	YALE # 2	10-jun-1994	ARSENIC		.014			MG/L
				10-sep-1997	ARSENIC		.012		.005	MG/L
				15-may-2000	ARSENIC		.011		.005	MG/L
		95	YALE # 3	01-may-2000	ARSENIC	CH	.014		.001	MG/L
				10-jun-1994	ARSENIC		.018			MG/L
				19-sep-1997	ARSENIC		.016		.005	MG/L
		107	ZAMORA # 1	13-aug-1997	ARSENIC		.016		.005	MG/L
				17-may-2000	ARSENIC		.015		.005	MG/L
				30-mar-1994	ARSENIC		.018			MG/L
		108	BURTON # 1	02-may-2000	ARSENIC	C	.014		.005	MG/L
				06-aug-1997	ARSENIC	O	.016		.005	MG/L
				21-apr-1994	ARSENIC		.016			MG/L
		109	BURTON # 4	02-may-2000	ARSENIC	CH	.022		.005	MG/L
				06-aug-1997	ARSENIC	O	.021		.005	MG/L
				21-apr-1994	ARSENIC		.012			MG/L
		112	CORONADO WELL # 1	25-jul-1997	ARSENIC	C	.026		.005	MG/L
				29-jun-1994	ARSENIC		.024			MG/L
		113	CORONADO WELL # 2	06-jun-2000	ARSENIC		.018		.005	MG/L
				25-jul-1997	ARSENIC		.015		.001	MG/L
				29-jun-1994	ARSENIC		.02			MG/L
		114	GONZALES # 1	07-jun-2000	ARSENIC		.024		.005	MG/L
				27-aug-1997	ARSENIC	I	.024		.005	MG/L
				29-jun-1994	ARSENIC		.023			MG/L
		115	GONZALES # 2	07-jun-2000	ARSENIC	CH	.014		.005	MG/L
				27-aug-1997	ARSENIC		.012		.005	MG/L
				29-jun-1994	ARSENIC		.017			MG/L
		117	THOMAS # 8	15-aug-1997	ARSENIC	C	.01		.005	MG/L
				24-jun-1994	ARSENIC		.012			MG/L
		146	ZAMORA # 2	17-may-2000	ARSENIC		.018		.005	MG/L
35021	ALCALDE MDWCA	2	WELL # 2	04-apr-1995	ARSENIC		.019			MG/L
				05-mar-1998	ARSENIC		.026		.001	MG/L
35123	ALGODONES WUA	1	OLD WELL EAST	01-feb-1995	ARSENIC		.085			MG/L
				09-jun-1995	ARSENIC		.029			MG/L

20-DEC-2000

New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
35123	ALGODONES WUA	2	NEW WELL WEST	01-feb-1995	ARSENIC		.018			MG/L
				10-sep-1998	ARSENIC		.021		.005	MG/L
80423	AMERICAN GYPSUM COMPANY (SANDOVAL COUNTY)	1	WELL # 1	20-apr-1995	ARSENIC		.017			MG/L
				21-oct-1998	ARSENIC		.02		.005	MG/L
90531	AMISTAD PUBLIC SCHOOL	1	WELL # 1	09-jan-1996	ARSENIC		.014			MG/L
				27-aug-1997	ARSENIC		.012		.005	MG/L
31904	ANGEL FIRE SERVICES - VILLAGE OF ANGEL FIRE	7	AGUA FRIA WELL	06-sep-1995	ARSENIC		.01			MG/L
				08-jun-1998	ARSENIC		.011		.005	MG/L
11207	ANTHONY W&SD	2	WELL # 1 (JAMES SITE)	16-apr-1996	ARSENIC		.0125		.0004	MG/L
				25-jul-1994	ARSENIC		.0123		.0004	MG/L
				29-apr-1999	ARSENIC		.0113		.0003	MG/L
		8	WELL 3A (MCKINLEY)	19-jul-1999	ARSENIC		.0118		.0003	MG/L
		9	WELL 6A (GILLETT)	19-jul-1999	ARSENIC		.0121		.0003	MG/L
47501	BARCELONA MOBILE HOME PARK	1	WELL # 1 (WEST WELL)	11-jan-1995	ARSENIC		.01			MG/L
00321	BARRANCO MDWCA	1	INFILTRATION GALLERY #1	06-dec-1999	ARSENIC		.013		.005	MG/L
				23-jan-1996	ARSENIC		.011			MG/L
11307	BERINO MDWCA	2	WELL # 2	12-feb-1997	ARSENIC		.0134		.0003	MG/L
				12-jun-1995	ARSENIC		.0137		.0004	MG/L
		3	WELL # 3	07-feb-2000	ARSENIC		.012		.0003	MG/L
08923	BERNALILLO WATER SYSTEM	2	SOUTH WELL (WELL #2)	11-mar-1994	ARSENIC		.062			MG/L
		3	WELL 3	08-feb-1994	ARSENIC		.022			MG/L
				09-aug-1993	ARSENIC		.011			MG/L
				30-apr-1997	ARSENIC		.021			MG/L
				30-may-2000	ARSENIC		.016		.005	MG/L
		4	WELL 4	04-aug-1993	ARSENIC		.01			MG/L
				08-feb-1994	ARSENIC		.012			MG/L
				30-apr-1997	ARSENIC		.016			MG/L
				30-may-2000	ARSENIC		.01		.005	MG/L
32517	BLOCK 'A' WELL CO-OP/ WILLIAM ACRES	1	WELL # 1	16-nov-1998	ARSENIC		.01		.001	MG/L
				21-nov-1996	ARSENIC		.01			MG/L
25033	BLUEWATER WATER & SANITATION DISTRICT	1	WELL # 1	22-feb-1994	ARSENIC		.015			MG/L
				30-jul-1997	ARSENIC		.012		.005	MG/L
10732	BOSQUE FARMS WATER SUPPLY SYSTEM	1	WELL # 1	15-feb-1994	ARSENIC		.01			MG/L
09232	BOSQUE GARDENS WATER COOP	1	WELL # 1	30-apr-1996	ARSENIC		.01			MG/L
		2	WELL # 2	30-apr-1996	ARSENIC		.01			MG/L
20608	CARLSBAD MUNICIPAL WATER SYSTEM	7	CAPROCK # 6	04-nov-1997	ARSENIC		.0104		.0003	MG/L
		14	CAPROCK #18	04-nov-1997	ARSENIC		.0138		.0003	MG/L
95501	CASA ANGELICA	1	WELL #1 (MAIN WELL)	21-oct-1998	ARSENIC		.018		.005	MG/L
45326	CASITAS DE SANTA FE	0	DISTRIBUTION SYSTEM	27-jan-1993	ARSENIC		.01			MG/L
00423	CEDAR CREEK WATER COOPERATIVE INC	1	WELL # 1	07-feb-1995	ARSENIC		.011			MG/L
32332	CENTRAL MINIMUM UNIT	1	WELL # 1	06-feb-1995	ARSENIC		.014			MG/L
				21-dec-1998	ARSENIC		.017		.005	MG/L
10632	CENTRAL NM MEDIUM CORRECTIONAL	1	WELL # 1	14-feb-1995	ARSENIC		.013			MG/L

New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
10632	CENTRAL NM MEDIUM CORRECTIONAL FACILITY	1	WELL # 1	27-oct-1998	ARSENIC		.016		.005	MG/L
		2	WELL # 2	14-feb-1995	ARSENIC		.01			MG/L
29207	CHAPARRAL WATER SYSTEM	7	SYLVIA	23-aug-1994	ARSENIC		.0175		.0004	MG/L
93121	CHIMAYO ELEMENTARY SCHOOL	1	WELL # 1	11-aug-1998	ARSENIC		.013		.005	MG/L
16507	CIELO DORADO ESTATES HOMEOWNERS ASSOC	1	WELL # 1 (WEST)	08-aug-1995	ARSENIC		.0477		.0004	MG/L
		2	WELL # 2 (EAST)	08-aug-1995	ARSENIC		.0457		.0004	MG/L
		3	ENTRY POINT # 1	29-oct-1998	ARSENIC		.0475		.0003	MG/L
09623	CITY OF RIO RANCHO SEWER AND WASTEWATER SERVICES	3	WELL # 3	13-may-1997	ARSENIC		.011			MG/L
		4	WELL # 4	04-may-1994	ARSENIC		.014			MG/L
				13-may-1997	ARSENIC		.014			MG/L
				14-jun-2000	ARSENIC	C	.014		.005	MG/L
		6	WELL # 6	07-feb-1994	ARSENIC		.028			MG/L
				25-aug-1994	ARSENIC		.013			MG/L
		7	WELL # 7	04-may-1994	ARSENIC		.012			MG/L
				13-may-1997	ARSENIC		.037			MG/L
				14-jun-2000	ARSENIC	C	.011		.005	MG/L
		9	WELL # 9	02-jun-1994	ARSENIC		.035			MG/L
		10	WELL #10	07-feb-1994	ARSENIC		.023			MG/L
				10-may-2000	ARSENIC		.019		.005	MG/L
				13-may-1997	ARSENIC		.022			MG/L
		12	WELL #12	04-may-1994	ARSENIC		.011			MG/L
				31-jul-1997	ARSENIC	C	.02		.005	MG/L
		13	WELL #13	09-sep-1998	ARSENIC	CHL	.052		.005	MG/L
				10-may-2000	ARSENIC		.049		.005	MG/L
		14	WELL #14	04-may-1994	ARSENIC		.015			MG/L
				13-may-1997	ARSENIC		.014			MG/L
				14-jun-2000	ARSENIC	CH	.012		.001	MG/L
		15	WELL #6A	09-feb-2000	ARSENIC	O	.025		.005	MG/L
				13-may-1997	ARSENIC		.028			MG/L
		16	WELL #16	13-may-1997	ARSENIC		.015			MG/L
				26-apr-2000	ARSENIC		.014		.005	MG/L
		17	WELL #15	05-dec-1994	ARSENIC		.012			MG/L
				13-may-1997	ARSENIC		.013			MG/L
				26-apr-2000	ARSENIC	O	.015		.001	MG/L
27031	CLAYTON MUNICIPAL SUPPLY	2	WELL # 8B	14-jun-1995	ARSENIC		.012			MG/L
23016	COLOMBUS WATER SYSTEM	1	WELL # 2 (NORTH WELL)	05-feb-1996	ARSENIC		.0636		.0004	MG/L
				08-feb-1996	ARSENIC		.0432		.0004	MG/L
				17-mar-1997	ARSENIC		.0343		.0003	MG/L
				25-apr-1996	ARSENIC		.0401		.0004	MG/L
				26-jan-2000	ARSENIC		.0327		.0003	MG/L
				28-feb-1996	ARSENIC		.0422		.0004	MG/L
		2	WELL # 1 (SOUTH WELL)	05-feb-1996	ARSENIC		.0442		.0004	MG/L
				08-feb-1996	ARSENIC		.0601		.0004	MG/L
				17-mar-1997	ARSENIC		.0552		.0003	MG/L
				25-apr-1996	ARSENIC		.058		.0004	MG/L

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New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
23016	COLUMBUS WATER SYSTEM	2	WELL # 1 (SOUTH WELL)	26-jan-2000	ARSENIC		.0467		.0003	MG/L
				27-may-1998	ARSENIC		.0521		.0003	MG/L
				28-feb-1996	ARSENIC		.0608		.0004	MG/L
				29-jul-1996	ARSENIC		.0628		.0004	MG/L
		3	WELL # 3 (SOUTHEAST)	05-feb-1996	ARSENIC		.0522		.0004	MG/L
				08-feb-1996	ARSENIC		.0484		.0004	MG/L
				17-mar-1997	ARSENIC		.0465		.0003	MG/L
				25-apr-1996	ARSENIC		.0488		.0004	MG/L
				26-jan-2000	ARSENIC		.0391		.0003	MG/L
				28-feb-1996	ARSENIC		.0436		.0004	MG/L
		5	WELL 4 GUADERRAMA	26-jan-2000	ARSENIC		.0379		.0003	MG/L
82323	COMMUNITY SCIENCES CORPORATION NTNC	1	WELL #1	01-jun-1999	ARSENIC	CN	.026		.005	MG/L
98613	CONOCO PRODUCTION - MALJAMAR NTNC	8	MCA 239	13-aug-1996	ARSENIC		.0241		.0004	MG/L
		9	MCA 244	13-aug-1996	ARSENIC		.0101		.0004	MG/L
56813	CONTINENTAL MOBILE HOME PARK C	1	WELL # 1	30-jan-1996	ARSENIC		.01			MG/L
57713	COUNTRY ESTATES MOBILE HOME PARK C	2	WELL # 2	20-feb-1996	ARSENIC		.012			MG/L
00132	CYPRESS GARDENS WATER USERS ASSOCIATION C	1	WELL # 1	02-apr-1997	ARSENIC		.011			MG/L
				15-mar-1994	ARSENIC		.015			MG/L
29932	D AND J MOBILE HOME PARK C	3	WELL C	10-jun-1996	ARSENIC	<	.01			MG/L
16807	DE LA TE MOBILE MANOR C	1	WELL # 1	08-feb-1996	ARSENIC		.0105		.0004	MG/L
73501	DESERT PALMS MOBILE HOME PARK C	2	WELL # 2 (WEST)	11-jan-1995	ARSENIC		.01			MG/L
10007	DESERT SANDS MDWCA C	1	WELL # 1	12-feb-1997	ARSENIC		.0101		.0003	MG/L
				23-jun-1995	ARSENIC		.01		.0004	MG/L
		3	CHLORINATOR	28-may-1998	ARSENIC		.0207		.0003	MG/L
		4	WELL 3	02-sep-1998	ARSENIC		.01935		.0003	MG/L
				09-feb-2000	ARSENIC		.0183		.0003	MG/L
				26-mar-1998	ARSENIC		.074		.0003	MG/L
				28-apr-1998	ARSENIC		.0221		.0003	MG/L
91813	DLD RESOURCES INC NTNC	5	WELL # 5	14-apr-1997	ARSENIC		.039		.0003	MG/L
99313	DYNERGY MIDSTREAM SERVICES NTNC	1	ABLE WELL	15-apr-1996	ARSENIC		.02			MG/L
16825	EL CORUCO MDWCA C	1	WELL # 1	17-mar-1998	ARSENIC		.011		.005	MG/L
37326	EL DORADO UTILITIES C	1	WELL # 1 (RG-18528)	24-mar-1998	ARSENIC	C	.011		.005	MG/L
28322	ELIDA WATER SYSTEM C	1	WELL # 1 (NEW)	21-feb-1995	ARSENIC		.011			MG/L
		2	WELL # 2 (NEW)	07-feb-1995	ARSENIC		.015			MG/L
		4	ENTRY POINT # 1	08-jan-1996	ARSENIC		.01			MG/L
01921	ESPANOLA WATER SYSTEM C	3	NORTH WELL INDUSTRIAL PARK	02-oct-1997	ARSENIC		.02		.005	MG/L
				20-jul-1994	ARSENIC		.015			MG/L
		7	WEST WELL	09-may-2000	ARSENIC	G	.014		.001	MG/L
10024	FLORA VISTA WATER USERS ASSOCIATION C	2	WELL # 3	24-aug-1993	ARSENIC		.04			MG/L
32409	G AND S WATER WORKS C	3	WELL # 3	04-nov-1996	ARSENIC		.0374		.0003	MG/L
91807	GADSDEN JUNIOR HIGH SCHOOL NTNC	1	WELL # 1	28-mar-1995	ARSENIC		.021		.0004	MG/L
29007	GARFIELD MDWCA C	6	WELL#36	08-sep-1997	ARSENIC		.0127		.0003	MG/L
94332	GIL SANCHEZ ELEMENTARY NTNC	1	WELL # 1	06-feb-1995	ARSENIC		.01			MG/L

New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
94332	GIL SANCHEZ ELEMENTARY	1	WELL # 1	11-mar-1998	ARSENIC		.015		.001	MG/L
80513	GPM GAS CORPORATION LINAM RANCH	3	WELL #3	25-aug-1997	ARSENIC		.0109		.0003	MG/L
00301	GREEN RIDGE WATER COOP	1	WELL #28	04-feb-1998	ARSENIC		.017		.005	MG/L
		2	WELL #29	04-feb-1998	ARSENIC	C	.01		.005	MG/L
11507	HACIENDA ACRES WATER SYSTEM	2	WELL # 2 AZTEC	18-feb-1997	ARSENIC		.0104		.0003	MG/L
19903	HAGERMAN WATER SYSTEM	2	SOUTH WELL (RA 4630-S)	08-aug-1995	ARSENIC		.0111		.0004	MG/L
11607	HATCH WATER SUPPLY SYSTEM	2	HILBURN WELL	07-mar-1995	ARSENIC		.0105		.0004	MG/L
13107	HIGH VALLEY WATER USERS ASSOCIATION	2	WELL # 2	22-apr-1999	ARSENIC		189		10	MG/L
21613	HOBBS MUNICIPAL WATER SUPPLY	23	WELL #24	21-nov-1994	ARSENIC		.0129		.0004	MG/L
		40	WELL #51	14-nov-1994	ARSENIC		.016		.0004	MG/L
81623	HOMESTEAD VILLAGE	1	WELL # 1	27-oct-1998	ARSENIC		.011		.005	MG/L
22409	HURLEY WATER SUPPLY SYSTEM	40	MCCAULEY # 3A	05-nov-1997	ARSENIC		.0257		.0003	MG/L
91308	IMC-KALIUM	2	WELL # 2	19-dec-1995	ARSENIC		.0104		.0004	MG/L
		5	WELL # 5	08-sep-1995	ARSENIC		.0138		.0004	MG/L
				19-dec-1995	ARSENIC		.0127		.0004	MG/L
09123	JEMEZ SPRINGS DOMESTIC WUA	3	GALLAGER SPRING	16-may-1995	ARSENIC		.032			MG/L
				20-oct-1998	ARSENIC	H	.036		.005	MG/L
90123	JEMEZ SPRINGS MUNICIPAL SCHOOL	1	SPRING # 1	20-oct-1998	ARSENIC	L	.06		.005	MG/L
				21-apr-1999	ARSENIC	L	.061		.005	MG/L
				29-aug-1995	ARSENIC		.05			MG/L
		2	WELL # 1	21-apr-1999	ARSENIC	CH	.016		.005	MG/L
				28-oct-1998	ARSENIC	CHL	.05		.005	MG/L
71026	JUNIPER HILLS MHP	1	WELL # 1	17-jan-1996	ARSENIC		.014			MG/L
				25-feb-1993	ARSENIC		.013			MG/L
				28-jun-1999	ARSENIC	C	.025		.001	MG/L
86001	KARLER PACKING COMPANY	1	WELL # 1 (MAIN WELL)	04-jun-1996	ARSENIC		.01			MG/L
00123	LA MESA WATER CO-OP	2	WELL # 2	19-oct-1998	ARSENIC		.01		.001	MG/L
		3	WELL # 3	01-sep-1998	ARSENIC	CH	.017		.005	MG/L
92607	LA UNION ELEMENTARY SCHOOL	1	WELL # 1	16-apr-1997	ARSENIC		.0332		.0003	MG/L
				26-jan-2000	ARSENIC		.0301		.0003	MG/L
				28-mar-1995	ARSENIC		.0315		.0004	MG/L
73627	LAKESHORE SANITATION DISTRICT	1	WELL # 1	06-jun-1995	ARSENIC		.0106		.0004	MG/L
				07-feb-1997	ARSENIC		.0115		.0003	MG/L
11301	LARRY VIGIL WEST	1	WELL # 1	23-jan-1996	ARSENIC		.01			MG/L
54207	LEASBURG MDWCA	1	WELL # 1	06-jul-1995	ARSENIC		.0202		.0004	MG/L
				24-jan-1997	ARSENIC		.0283		.0003	MG/L
11401	LISA PROPERTY WATER SYSTEM	1	WELL # 1	08-may-1996	ARSENIC		.01			MG/L
				26-oct-1998	ARSENIC		.01		.005	MG/L
		2	WELL # 2	08-may-1996	ARSENIC		.01			MG/L
00432	LOMA ESCONDIDA WATER ASSOCIATION	1	WELL # 1	22-jun-1998	ARSENIC		.018		.005	MG/L
00115	LOS ALAMOS MUNICIPAL WATER SYSTEM	2	GUAJE WELL # 2	01-aug-1994	ARSENIC		.031			MG/L
		7	GUAJE WELL # 1A	01-aug-1994	ARSENIC		.01			MG/L
		21	GUAJE BOOSTER 2	02-aug-1995	ARSENIC		.014			MG/L

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New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
00115	LOS ALAMOS MUNICIPAL WATER SYSTEM	21	GUAJE BOOSTER 2	14-apr-1993	ARSENIC		.015			MG/L
33732	LOS LUNAS CENTER	1	WELL # 1	08-feb-1995	ARSENIC		.01			MG/L
25332	LOS LUNAS WATER SYSTEM	3	WELL # 3	08-apr-1997	ARSENIC		.022			MG/L
				16-feb-1994	ARSENIC		.021			MG/L
				18-jan-2000	ARSENIC		.019		.005	MG/L
		4	WELL # 4	16-feb-1994	ARSENIC		.027			MG/L
		5	WELL #5	08-apr-1997	ARSENIC		.019			MG/L
21813	LOVINGTON MUNICIPAL WATER SUPPLY	11	WELL #13	23-aug-1994	ARSENIC		.0179		.0004	MG/L
60617	MANUELITO NAVAJO CHILDRENS HOME	1	WELL # 1	14-jun-1994	ARSENIC		.011			MG/L
00130	MELODY RANCH WATER CO	1	WELL # 1 (SOUTH WELL)	13-jan-1998	ARSENIC	C	.036		.005	MG/L
37113	MONUMENT WATER USERS ASSOCIATION	1	WELL # 1	05-feb-1996	ARSENIC		.011			MG/L
00113	MOR-WEST CORPORATION	5	WELL # 8	23-oct-1995	ARSENIC		.011			MG/L
		6	WELL # 9	23-oct-1995	ARSENIC		.011			MG/L
		7	ENTRY POINT # 1	05-feb-1996	ARSENIC		.01			MG/L
26811	MOSQUERO WATER SYSTEM	4	WELL # 4	29-nov-1993	ARSENIC		.015			MG/L
17532	MOUNTAINVIEW MHP	1	WELL # 1	27-oct-1998	ARSENIC		.01		.005	MG/L
27305	NEW MEXICO AMERICAN WATER CO (CLOVIS)	23	WELL #41	13-jul-1993	ARSENIC		.01			MG/L
		24	WELL #42	13-jul-1993	ARSENIC		.014			MG/L
73828	NEW MEXICO BOYS RANCH	1	WELL # 1	26-oct-1998	ARSENIC	CH	.014		.005	MG/L
		2	WELL #2	22-jan-1996	ARSENIC		.013			MG/L
				22-sep-1999	ARSENIC	CH	.015		.001	MG/L
81223	NEW MEXICO OUTLET CENTER	1	WELL # 1	09-may-1996	ARSENIC		.01			MG/L
10901	NEW MEXICO UTILITIES INC	1	WELL # 1	12-may-1998	ARSENIC		.01		.001	MG/L
		2	WELL # 2	18-mar-1994	ARSENIC		.013			MG/L
				27-aug-1997	ARSENIC		.013		.005	MG/L
		3	WELL # 3	12-may-1998	ARSENIC	C	.03		.005	MG/L
				16-may-1996	ARSENIC		.027			MG/L
		4	WELL # 4	16-may-1996	ARSENIC		.01			MG/L
				24-jun-1998	ARSENIC	CH	.011		.005	MG/L
32226	NM STATE PENITENTIARY	2	WELL # 2	15-aug-1995	ARSENIC		.01			MG/L
46223	NORTH RANCHOS DE PLACITAS W&SD	2	WELL # 2	19-oct-1998	ARSENIC		.01		.005	MG/L
90212	PHELPS DODGE HIDALGO SMELTER	1	WELL # 26B 1067-S	28-feb-1995	ARSENIC		.0353		.0004	MG/L
		2	WELL # 27A 1067-S2	28-feb-1995	ARSENIC		.0107		.0004	MG/L
		3	WELL # 27B 1067-S3	23-may-1995	ARSENIC		.0147		.0004	MG/L
		4	WELL # 28-A 1067-S4	28-feb-1995	ARSENIC		.0146		.0004	MG/L
		9	ENTRY POINT # 1	07-apr-1997	ARSENIC		.0137		.0003	MG/L
23202	PIE TOWN MDWCA	2	WELL # 2 (SOUTH)	01-aug-1995	ARSENIC		.0138		.0004	MG/L
76723	PLACITAS TRAILS WATER COOP	1	EAST WELL LOT #73	19-mar-1998	ARSENIC	C	.037		.005	MG/L
				22-feb-1995	ARSENIC		.028			MG/L
		2	WEST WELL LOT #22	19-mar-1998	ARSENIC		.031		.005	MG/L
				22-feb-1995	ARSENIC		.024			MG/L
		3	WELL #3	05-feb-1996	ARSENIC		.014			MG/L
				19-mar-1998	ARSENIC	C	.025		.005	MG/L

New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
43623	PLACITAS WEST WATER CO-OP C	1	WELL # 1	19-oct-1998	ARSENIC		.014		.005	MG/L
		2	WELL # 2	19-oct-1998	ARSENIC		.013		.005	MG/L
80501	PNM - REEVES STATION NTNC	1	WELL 2A (EAST WELL)	04-jun-1996	ARSENIC		.01			MG/L
		3	WELL 2C (1-AR)	04-jun-1996	ARSENIC		.01			MG/L
91726	POJOAQUE HIGH SCHOOL NTNC	2	WELL # 2	20-dec-1995	ARSENIC		.036			MG/L
81126	POJOAQUE INTERMEDIATE JR HIGH SCHOOL NTNC	1	WELL # 1	20-dec-1995	ARSENIC		.011			MG/L
		2	WELL # 2	09-dec-1998	ARSENIC		.021		.001	MG/L
72126	POJOAQUE TERRACES MHP C	1	WELL # 1	07-jun-1993	ARSENIC		.01			MG/L
				13-jun-1995	ARSENIC		.013			MG/L
28522	PORTALES WATER SYSTEM (CITY OF) C	19	BLACKWATER #12	14-sep-1994	ARSENIC		.015		.0004	MG/L
		20	BLACKWATER #10	14-sep-1994	ARSENIC		.0156		.0004	MG/L
14810	PUERTO DE LUNA MDWCA C	1	WELL # 1	02-feb-1998	ARSENIC		.0231		.0003	MG/L
				06-mar-1995	ARSENIC		.014			MG/L
				12-jan-1993	ARSENIC		.07			MG/L
23302	QUEMADO WATER WORKS C	1	WELL # 2	07-dec-1993	ARSENIC		.015			MG/L
		2	WELL # 1	01-aug-1995	ARSENIC		.0224		.0004	MG/L
				26-oct-1998	ARSENIC		.021		.005	MG/L
56412	RANCHOS DE HIDALGO WATER SYSTEM C	1	WELL # 26A	12-aug-1997	ARSENIC		.0104		.0003	MG/L
09423	RANCHOS DE PLACITAS SANITATION DISTRICT C	2	WELL # 2	19-oct-1998	ARSENIC		.011		.005	MG/L
24832	RIO COMMUNITIES C	2	WELL # 2	03-apr-1997	ARSENIC		.01			MG/L
		4	WELL # 5	03-apr-1997	ARSENIC		.013			MG/L
				11-may-1994	ARSENIC		.012			MG/L
				26-apr-2000	ARSENIC	C	.014		.005	MG/L
95032	RIO COMMUNITIES INDUSTRIAL PARK	1	WELL # 4	08-jan-1996	ARSENIC		.013			MG/L
				17-dec-1998	ARSENIC	CH	.014		.005	MG/L
18525	RIVERA MDWCA C	1	WELL # 1	23-dec-1998	ARSENIC	CH	.033		.005	MG/L
				25-may-1999	ARSENIC	C	.021		.001	MG/L
15307	RIVERSIDE SUBDIVISION C	1	WELL 1	28-jul-1994	ARSENIC		.0121		.0004	MG/L
61217	ROB ROY TRAILER PARK C	1	WELL # 1	21-nov-1996	ARSENIC		.011			MG/L
99901	SAINT JOSEPH HEALTH CARE SYSTEM NTNC	1	WELL # 1	10-jan-1995	ARSENIC		.01			MG/L
73928	SAN ANTONIO MDWCA C	1	WELL # 1	21-dec-1998	ARSENIC		.019		.005	MG/L
				29-apr-1996	ARSENIC		.012			MG/L
		2	WELL # 2 (LUIS LOPEZ)	02-feb-1995	ARSENIC		.01			MG/L
				21-dec-1998	ARSENIC	CH	.012		.005	MG/L
		3	WELL # 3 (NEW)	21-dec-1998	ARSENIC	C	.038		.005	MG/L
				29-apr-1996	ARSENIC		.016			MG/L
27920	SAN JON WATER SUPPLY C	1	WELL #1 (NEW WELL)	13-mar-1995	ARSENIC		.013			MG/L
		2	WELL # 2 (NEW WELL)	13-mar-1995	ARSENIC		.024			MG/L
		3	WELL # 3 (NEW WELL)	12-jun-1995	ARSENIC		.071			MG/L
				13-mar-1995	ARSENIC		.066			MG/L
		4	WELL # 4 (NEW WELL)	13-mar-1995	ARSENIC		.084			MG/L
		18	WELL #24	13-mar-1995	ARSENIC		.012			MG/L
		20	WELL #23	20-jan-1998	ARSENIC		.0151		.0003	MG/L

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New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note		Result	+/-	Mdl	Units
25833	SAN RAFAEL WATER & SANITATION DISTRICT	2	LITTLE WELL	22-mar-1994	ARSENIC			.013			MG/L
09723	SAN YSIDRO WATER SUPPLY SYSTEM	0	DISTRIBUTION SYSTEM	26-dec-1996	ARSENIC		<	.012			MG/L
				26-dec-1996	ARSENIC			.015			MG/L
				26-dec-1996	ARSENIC		<	.019			MG/L
				27-dec-1996	ARSENIC			.033			MG/L
				27-dec-1996	ARSENIC			.047			MG/L
				28-dec-1996	ARSENIC			.06			MG/L
				28-dec-1996	ARSENIC			.015			MG/L
				28-dec-1996	ARSENIC			.06			MG/L
				28-dec-1996	ARSENIC			.47			MG/L
				28-dec-1996	ARSENIC		<	.011			MG/L
				28-dec-1996	ARSENIC		<	.035			MG/L
				28-dec-1996	ARSENIC			.44			MG/L
				28-dec-1996	ARSENIC			.02			MG/L
				28-dec-1996	ARSENIC			.58			MG/L
				28-dec-1996	ARSENIC			.013			MG/L
				28-dec-1996	ARSENIC			.28			MG/L
				28-dec-1996	ARSENIC			.049			MG/L
				28-dec-1996	ARSENIC			.026			MG/L
				28-dec-1996	ARSENIC			.057			MG/L
				28-dec-1996	ARSENIC			.06			MG/L
				28-dec-1996	ARSENIC		<	.011			MG/L
				28-dec-1996	ARSENIC			.056			MG/L
				28-dec-1996	ARSENIC			.023			MG/L
				30-dec-1996	ARSENIC		<	.048			MG/L
				30-dec-1996	ARSENIC			.052			MG/L
		1	INFILTRATION GALLERY	14-feb-1995	ARSENIC			.06			MG/L
				27-mar-1995	ARSENIC			.071			MG/L
		2	WELL # 4	01-nov-1999	ARSENIC	CHL		.11		.005	MG/L
				01-nov-1999	ARSENIC	CHL		.2		.005	MG/L
				14-feb-1995	ARSENIC			.19			MG/L
		3	INFILTRATION GALLERY #2	01-nov-1999	ARSENIC	HL		.066		.005	MG/L
				09-sep-1998	ARSENIC	CL		.21		.005	MG/L
		4	INFILTRATION GALLERY #3	01-nov-1999	ARSENIC	CHL		.2		.005	MG/L
				01-nov-1999	ARSENIC	CH		.062		.005	MG/L
				08-sep-1997	ARSENIC	C		.22		.005	MG/L
				16-jul-1997	ARSENIC	C		.2		.005	MG/L
				27-jan-1998	ARSENIC	H		.24		.005	MG/L
05126	SANGRE DE CRISTO WATER COMPANY	3	BUCKMAN #1	27-jul-1994	ARSENIC			.011			MG/L
90826	SANTA FE MUNICIPAL AIRPORT	1	WELL # 1	14-dec-1995	ARSENIC			.018			MG/L
94007	SANTA TERRSA INDUSTRIAL PARK	1	WELL # 6	08-aug-1995	ARSENIC			.0336		.0004	MG/L
				26-mar-1997	ARSENIC			.0306		.0003	MG/L
42007	SANTA TERESA WATER SYSTEM	1	WELL # 8	08-aug-1995	ARSENIC			.0305		.0004	MG/L
				26-mar-1997	ARSENIC			.0338		.0003	MG/L

New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
42007	SANTA TERESA WATER SYSTEM	2	WELL #30	08-aug-1995	ARSENIC		.0117		.0004	MG/L
				26-mar-1997	ARSENIC		.0126		.0003	MG/L
		3	WELL #31	08-aug-1995	ARSENIC		.0137		.0004	MG/L
		5	WELL #19	02-sep-1998	ARSENIC		.0129		.0003	MG/L
56512	SNADY GROVE TRUCK STOP N/C	1	WELL # 1 (NORTH)	25-jul-1995	ARSENIC		.0431		.0004	MG/L
57213	SID RICHARDSON GASOLINE CO JAL #3 PLANT NTNC	1	COOPER WELL # 1	08-jul-1996	ARSENIC		.0179		.0004	MG/L
		3	COOPER WELL # 3	08-jul-1996	ARSENIC		.0245		.0004	MG/L
		4	COOPER WELL # 4	08-jul-1996	ARSENIC		.0142		.0004	MG/L
				10-jul-1996	ARSENIC		.0237		.0004	MG/L
		5	COOPER WELL # 5	05-aug-1996	ARSENIC		.0186		.0004	MG/L
		7	COOPER WELL # 8	08-jul-1996	ARSENIC		.0122		.0004	MG/L
		8	HUBB WELL # 1	15-jul-1996	ARSENIC		.0189		.0004	MG/L
		9	HUBB WELL # 2	15-jul-1996	ARSENIC		.0155		.0004	MG/L
		10	HUBB WELL # 3	08-jul-1996	ARSENIC		.0205		.0004	MG/L
		12	HUBB WELL # 5	15-jul-1996	ARSENIC		.0288		.0004	MG/L
23728	SOCORRO WATER SYSTEM C	1	EAGLE PICHER	17-sep-1997	ARSENIC		.012		.005	MG/L
		2	OLSEN WELL	17-sep-1997	ARSENIC		.01		.001	MG/L
		3	SOUTH INDUSTRIAL PARK WELL	09-aug-2000	ARSENIC		.027		.001	MG/L
				12-jul-1994	ARSENIC		.027			MG/L
				17-sep-1997	ARSENIC	C	.029		.005	MG/L
		4	SCHOOL OF MINES WELL	09-aug-2000	ARSENIC		.027		.001	MG/L
				12-jul-1994	ARSENIC		.027			MG/L
				17-sep-1997	ARSENIC	H	.032		.005	MG/L
		5	SOCORRO SPRINGS	12-jul-1994	ARSENIC		.046			MG/L
				17-sep-1997	ARSENIC	C	.05		.005	MG/L
		6	SEDILLO SPRINGS	12-jul-1994	ARSENIC		.047			MG/L
				17-sep-1997	ARSENIC	C	.044		.005	MG/L
88201	SOIL AMENDMENT FACLILITY NTNC	1	WELL # 1	07-apr-1997	ARSENIC		.013			MG/L
				23-feb-2000	ARSENIC		.014		.005	MG/L
90026	SOMBRILLO ELEMENTARY SCHOOL NTNC	1	WELL # 1	10-mar-1998	ARSENIC		.014		.005	MG/L
10201	SOUTH HILLS WATER COMPANY C	3	WELL # 3	26-oct-1998	ARSENIC		.01		.005	MG/L
92913	SPS-MADDOX STATION #9 NTNC	7	WELL # 7	14-aug-1996	ARSENIC		.0109		.0004	MG/L
55407	ST LUKES EPISCOPAL PARISH SCHOOL NTNC	1	WELL # 1	08-aug-1995	ARSENIC		.0428		.0004	MG/L
				16-nov-1998	ARSENIC		.0449		.0003	MG/L
11807	SUNLAND PARK WATER SYSTEM C	1	WELL # 2	14-may-1999	ARSENIC		.0158		.0003	MG/L
				28-jul-1994	ARSENIC		.0169		.0004	MG/L
				29-apr-1996	ARSENIC		.0168		.0004	MG/L
		2	WELL # 3	28-jul-1994	ARSENIC		.0136		.0004	MG/L
				29-apr-1996	ARSENIC		.0155		.0004	MG/L
		3	WELL #1 (RIVERSIDE)	29-apr-1996	ARSENIC		.0151		.0004	MG/L
		5	WELL #11-A	14-may-1999	ARSENIC		.0158		.0003	MG/L
				25-sep-1997	ARSENIC		.0164		.0003	MG/L
32301	SUNSET MOBILE HOME PARK (ALBQ) C	1	WELL # 2 (NW)	14-may-1996	ARSENIC		.01			MG/L
88001	T-VI SOUTH VALLEY CAMPUS NTNC	1	WELL # 1	15-jan-1998	ARSENIC		.03		.005	MG/L

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New Mexico Public Water System Sampling Results

Code#	System Name	ID	Source Name	Date Sampled	Contaminant	Note	Result	+/-	Mdl	Units
98001	T-VI SOUTH VALLEY CAMPUS	1	WELL # 1	31-jan-1995	ARSENIC		.023			MG/L
00523	TIERRA MADRE WATER COOP	1	WELL 1	05-mar-1996	ARSENIC		.01			MG/L
		3	WELL 3	05-mar-1996	ARSENIC		.012			MG/L
11701	TIERRA WEST ESTATES MHP	1	WELL # 1 (MAIN WELL)	18-feb-1998	ARSENIC		.01		.005	MG/L
		2	WELL #2	24-feb-1998	ARSENIC		.02		.001	MG/L
20001	TOM'S MOBILE HOME PARK	1	WELL # 1	08-may-1996	ARSENIC		.011			MG/L
81529	UNM TAOS EDUCATION CENTER	1	WELL #1	27-mar-2000	ARSENIC	CH	.015		.005	MG/L
80232	UNM VALENCIA CAMPUS WATER SYSTEM	2	WELL #7	08-apr-1997	ARSENIC		.01			MG/L
28422	VILLAGE OF FLOYD WS	1	WELL # 1	08-jan-1996	ARSENIC		.012			MG/L
				21-aug-1995	ARSENIC		.012			MG/L
62601	WESTERN HEIGHTS EAST MOBILE HOME PARK	1	EAST WELL	02-may-1996	ARSENIC		.013			MG/L
				24-feb-2000	ARSENIC	CH	.016		.001	MG/L
				26-oct-1998	ARSENIC		.017		.005	MG/L
75601	WESTERN HEIGHTS WEST MOBILE HOME PARK	1	WEST WELL	02-may-1996	ARSENIC		.014			MG/L
				26-oct-1998	ARSENIC	CH	.017		.005	MG/L
00117	WHITE CLIFFS MOBILE HOME PARK	1	WELL # 1	06-feb-1996	ARSENIC		.011			MG/L
		2	WELL # 2	06-feb-1996	ARSENIC		.013			MG/L
		3	WELL # 3	06-feb-1996	ARSENIC		.021			MG/L
				24-jan-1994	ARSENIC		.011			MG/L
		4	ENTRY POINT #1	17-nov-1998	ARSENIC		.024		.005	MG/L
60017	WINGATE FRACTIONATING PLANT	4	WELL # 7	15-aug-1995	ARSENIC		.027			MG/L
03721	YOUNGSVILLE MDWCA	3	WELL # 3	08-dec-1999	ARSENIC		.027		.001	MG/L

American Society of Civil Engineers

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Statement of the
AMERICAN SOCIETY OF CIVIL ENGINEERS
on
U.S. Drinking-Water Infrastructure Needs
Before the
Subcommittee on Environment and Hazardous Materials
Committee on Energy and Commerce
U.S. House of Representatives
March 28, 2001

Mr. Chairman and Members of the Subcommittee:

The American Society of Civil Engineers (ASCE) is pleased to provide this statement for the record on the drinking-water infrastructure needs in the United States today.

ASCE was founded in 1852 and is the country's oldest national civil engineering organization. It represents more than 125,000 civil engineers in private practice, government, industry and academia who are dedicated to the advancement of the science and profession of civil engineering. ASCE is a 501(c)(3) non-profit educational and professional society.

I. The Issue

Earlier this month, ASCE released its *2001 Report Card for America's Infrastructure* in which the nation's life-sustaining foundation received a cumulative grade of "D+" in 12 critical areas. The reasons for such a dismal grade include the growing obsolescence of an aging system; local political opposition and red tape that stymie the development of effective solutions; and an explosive population growth in the past decade that has outpaced the rate and impact of current investment and maintenance efforts.

The *2001 Report Card* follows one released in 1998, at which time the 10 infrastructure categories rated were given an average grade of "D." This year drinking-water remained at a "D." Many of our aged drinking-water systems are structurally obsolete.

II. Drinking-Water Infrastructure Needs

The nation's 54,000 drinking-water systems face staggering infrastructure funding needs over the next 20 years. Although America spends billions on infrastructure each year, drinking-water faces an annual shortfall of at least $11 billion to replace aging facilities that are near the end of their useful life and to comply with existing and future federal water regulations. The shortfall does not account for any growth in the demand for drinking-water over the next 20 years.

Although the Safe Drinking Water Act Amendments of 1996 authorized the Environmental Protection Agency (EPA) to spend $1 billion annually to construct and repair drinking-water facilities, Congress has failed to appropriate the full amount. In FY 2001, the appropriated amount is $825 million, 82.5 percent of the authorized total, representing less than 10 percent of the total amount needed this year.

In January 1997, EPA presented to Congress the first drinking-water needs survey, that indicated the nation's 54,000 community water systems will need to invest $138.4 billion over the next 20 years to install, upgrade, or replace infrastructure to ensure the provision of safe drinking-water to these systems' 243 million customers. That estimate is expected to reach $300 billion in the next EPA survey due out later in 2001.

Of the 1997 estimate, about $12.1 billion was needed for treatment to comply with existing SDWA regulations; treatment for microbiological contaminants accounts for $10.2 billion (84 percent) of the current SDWA need. To take a recent example, the total national annualized costs of treatment, monitoring, reporting, recordkeeping, and administration under the new standard for arsenic issued in January 2001 will be approximately $181 million; the total treatment cost will be another $177 million per year. Annual monitoring and administrative costs will be about $2.7 million and states' costs will be about $1 million.

But the most recent study by the EPA reveals that the need is even greater. In 1999, the Agency conducted the second Drinking Water Infrastructure Needs Survey. The purpose of the survey is to document the 20-year capital investment needs of public water systems that are eligible to receive Drinking Water State Revolving Fund (SRF) monies.

> **The EPA survey found that the total drinking-water infrastructure need nationwide is $150.9 billion for the 20-year period through December 2018.**

Of course, notwithstanding the great need for further investment in replacement pipes and related infrastructure, we as a nation are making great strides in improving the quality of our drinking-water.

Health-based violations of federal drinking-water standards are declining steadily, according to data from the EPA. In 1993, 79 percent of Americans were served by drinking-water systems that did not experience health-based violations. By 2000, that number had risen to 91 percent.

Nevertheless, without a significantly enhanced federal role in providing assistance to drinking-water infrastructure, critical investments will not occur. Possible solutions include grants, trust funds, loans, and incentives for private investment. The question is not whether the federal government should take more responsibility for drinking-water improvements, but how.

III. Policy Options

New solutions are needed to what amounts to a nearly trillion dollars in critical drinking-water and drinking-water infrastructure investments over the next two decades. Not meeting the investment needs of the next 20 years risks reversing the public health, environmental, and economic gains of the last three decades.

Without a significantly enhanced federal role in providing assistance to drinking-water infrastructure, critical investments will not occur. Possible solutions include grants, trust funds, loans, and incentives for private investment. The question is not whether the federal government should take more responsibility for drinking-water and drinking-water improvements, but how.

ASCE therefore recommends that funding for the national drinking-water infrastructure system improvements be provided through the creation of a water trust fund to provide a comprehensive federal financing program for all water infrastructure needs. Money in the trust fund should not be diverted for non-water purposes.

We believe the total program funding needs should be at $57 billion over the next five years.

In the interim, Congress should fund the entire $1 billion annually authorized under the current State Revolving Loan Funds (SRFs) program in the Safe Drinking-water Act for Fiscal years 2002 and 2003.

Moreover, we support the use of federal appropriations from general treasury funds and the issuance of revenue bonds and tax-exempt financing mechanisms at the state and local levels, as well as public-private partnerships, state infrastructure banks, and other innovative financing procedures.

Finally, some have argued that federal regulatory programs under the Safe Drinking-water Act are too restrictive; others argue that the current regulations may not be protective enough of human health and the environment. Without taking a position either way, ASCE does not believe that legislation designed to provide indispensable financing for our aging infrastructure should be the forum to address controversial regulatory changes about which there is little consensus at the moment.

ASCE American Society of Civil Engineers

2001 Report Card for America's Infrastructure

Subject	Grade	Comments
Roads	D+	One-third of the nation's major roads are in poor or mediocre condition, costing American drivers an estimated $5.8 billion a year. Road conditions contribute to as many as 13,800 highway fatalities annually. Twenty seven percent of America's urban freeways – which account for 61% of all miles driven – are congested.
Bridges	C	As of 1998, 29% of the nation's bridges were structurally deficient or functionally obsolete, an improvement from 31% in 1996. It is estimated that it will cost $10.6 billion a year for 20 years to eliminate all bridge deficiencies.
Transit	C-	Transit ridership has increased 15% since 1995 – faster than airline or highway transportation. Capital spending must increase 41% just to maintain the system in its present condition.
Aviation	D	Airport capacity has increased only 1% in the past 10 years, while air traffic has increased 37% during that time. Airport congestion delayed nearly 50,000 flights in one month alone last year. Congestion also jeopardizes safety -- there were 429 runway incursions ("near misses") reported in 2000, up 25% from 1999.
Schools	D-	Due to either aging or outdated facilities, or severe overcrowding, 75% of our nation's school buildings are inadequate to meet the needs of school children. The average cost of capital investment needed is $3,800 *per student*, more than half the average cost to educate that student for one year. Since 1998, the total need has increased from $112 billion to $127 billion.
Drinking Water	D	The nation's 54,000 drinking water systems face an annual shortfall of $11 billion needed to replace facilities that are nearing the end of their useful life and to comply with federal water regulations. Non-point source pollution remains the most significant threat to water quality.
Wastewater	D	The nation's 16,000 wastewater systems face enormous needs. Some sewer systems are 100 years old. Currently, there is a $12 billion annual shortfall in funding for infrastructure needs in this category; however, federal funding has remained flat for a decade. More than one-third of U.S. surface waters do not meet water quality standards
Dams	D	There are more than 2,100 unsafe dams in the United States. There were 61 reported dam failures in the past two years. The number of "high-hazard potential dams" – those whose failure would cause loss of life – increased from 9,281 in 1998 to 9,921 in 2001.
Solid Waste	C+	The amount of solid waste sent to landfills has declined 13% since 1990, while the amount of waste recovered through recycling has nearly doubled. Most states have ten years' worth of landfill capacity and waste-to-energy plants now manage 17% of the nation's trash.
Hazardous Waste	D+	Effective regulation and enforcement have largely halted the contamination of new sites. Aided by the best clean-up technology in the world, the rate of Superfund clean-up has quickened – though not enough to keep pace with the number of new sites listed as the backlog of potential sites is assessed.
Navigable Waterways	D+	The U.S. Army Corps of Engineers has a backlog of $38 billion in active authorized projects. On the inland waterways system, 44% of all the lock chambers have already exceeded their 50-year design lives. Key deep-draft channels are inadequate for the mega-container ships, which are the world standard for international trade; and intermodal connectors to ports are in poor condition. Transportation demand on waterways is expected to double by 2020, and serious performance problems are likely if current levels of investment continue.
Energy	D+	Since 1990, actual capacity has increased only about 7,000 megawatts (MW) per year, an annual shortfall of 30%. More than 10,000 MW of capacity will have to be added each year until 2008 to keep up with the 1.8% annual growth in demand. The U.S. energy transmission infrastructure relies on older technology, raising questions of long-term reliability.

America's Infrastructure G.P.A. = D+

Total Investment Needs = $ 1.3 Trillion

(estimated 5-year need)

A = Exceptional
B = Good
C = Fair
D = Poor
F = Inadequate

Each category was evaluated on the basis of condition and performance, capacity vs. need, and funding vs. need.

American Society of Civil Engineers, 1015 15th Street, NW, Suite 600, Washington, DC 20005; 202/789-2200; www.asce.org/reportcard

Mrs. WILSON. And the third is a map. This is the State of New Mexico, and every little dot here is a water system that is going to be impacted by these rules. Some of these are in my district.

This little county over here isn't so little. New Mexico, by geography, is the fifth largest State in the country. This county over here is Harding County, and it has two water systems affected.

In the census, they were very pleased. They are now at 871 people in the entire county of Harding County. Bernalillo, in New Mexico, in my district, has 6,700 souls. Their estimate of the cost, the Mayor has estimated—Mayor Charles Aguilar has estimated the cost of this standard of about $91 on everybody's water bill.

This is a town where the median household income is $19,000. That's why New Mexicans care about this. We want clean water for our families, but we want to get this right so that we have the money to be able to pay it, and we don't lose our water systems.

The people that I am listening to are not folks in the timber industry. I don't even have enough trees to have a timber industry. What I care about is public health and good science, and I think it is possible to do that on a bipartisan basis because we have done it in the State of New Mexico. And I yield the balance of my time.

Mr. GILLMOR. The Gentle Lady yields back. The gentleman from Ohio, Mr. Brown.

Mr. BROWN. Thank you, Mr. Chairman. I listened to my friend from New Mexico, and we have worked on several infectious disease and other issues together, and I appreciate her integrity and her good work.

The subject though of this hearing is to discuss the massive funding of the water infrastructure in this country, and some of this money should be diverted to communities like yours, but it doesn't mean that you delay cleaning up the water in those communities.

I mean, that is what we are really here for, I think. Administrator Whitman, let me understand this. Now, when you were the Governor of New Jersey, you accepted—you used the word advisor, and I don't know quite what that meant. But you accepted the 10 parts per billion as making sense for New Jersey, correct?

Ms. WHITMAN. Yes.

Mr. BROWN. But now you say that going from 50 to 10 that you don't want to do it without more studies and more science. So, as Governor of New Jersey, you thought 10 made sense.

And you didn't care about the science so much then, and the thoroughness of the science, and sound science as my friends on the other side of the aisle always like to say when they have industry scientists spewing their point of view. But why today you want more science, more studies, more delay?

Ms. WHITMAN. Well, Congressman, we have the luxury of being able to accept something that was accepted but not scientifically definitive. We could do it without, because we don't have a great deal of naturally occurring arsenic in our water.

We have not as many water companies as you saw in the map that the gentlewoman from New Mexico showed us. We are able to do it in a way that did not push any of our people to the point where they have to make a decision whether they were going to be able to afford their water or food, or the constant things that we always hear of in tradeoffs.

So this was a decision that we came to without the same kinds of constraints. Again, I would like to assure everyone, and to repeat, that what we are doing here is looking to make sure that we fully understand all the impacts of the decision that we are making, and are there other steps that we need to take so that we don't have unintended consequences from this rule.

Simply because I would love nothing better than to have the definitive study that says that it is 10, and that's it, or it is five, and that's it. We may end up at five.

Mr. BROWN. Administrator Whitman, we hear that around here from people that don't particularly have a good record in the environment. We need a definitive study, and we need sound science, and we need absolutely 100 percent proof.

Ms. WHITMAN. We are not going to get it. We need to make a decision without everything that we would like to have.

Mr. BROWN. Yes, but you are the agency. It is my understanding that the EPA's established numbers are maximum contaminant levels for 83 contaminants under the Safe Drinking Water Act. Is every single one of those—I know that you have not been there very long, but is every single one of those a product of a definitive scientific study that clearly identified the exact number for the EPA to act every time?

Ms. WHITMAN. And I am not saying that we are going to hold up a decision on this until we get that kind of a study, because I don't think that we ever will get that kind of a study with arsenic. So we have to be prepared to make a decision without everything that we would like to have. That is what I would love to have, but we are prepared to go forward.

Mr. BROWN. If I may, in light of what this list of countries—and I mentioned some of them earlier—have done; Australia is 7 parts per billion, and Belgium, Denmark, United Kingdom, German, Spain, Finland, France, Ireland, Greece, Italy, Luxembourg, The Netherlands, Portugal, Syria, Nunibia, Mongolia, Laos, Jordan, Japan, Sweden, they have all come down to 10 parts per billion.

And the European Union has said 10 parts per billion, and the World Health Organization, as reputable an organization as there is on international public health, has said 10 parts per billion; and because you are not sure, you maybe need one more study to be sure.

You don't want to join New Jersey, and you don't want to join all of these countries. You don't want to join the world health organization and the EU to say let's do 10 in this country because maybe we ought to delay it. Who is going to pay the cost for that delay?

Who is going to get sick, and who is going to be a victim of an endocrine disrupter, or who are going to be victims of birth detects, or who is going to be the victims of the toxic substance of arsenic or cancer because of this delay?

Ms. WHITMAN. Congressman, if we determine that it should be five, I would like the flexibility to take it to five right away. Not wait, and not do 10, and then have them come down to five, and that is maybe where we end up.

Mr. BROWN. Maybe it is, but from the record so far of this administration, from the Governor of Texas' record on the environment,

and from the record—and I don't know much about your record in New Jersey, but from the record so far with carbon dioxide, with others, and with all that we have seen in this administration already, for us to think that there is not some interest in delay, when the clock began or was supposed to begin March 23, and then these communities began to comply.

We can do some things for Ms. Wilson and others through the revolving fund. We ought to be doing that, but to begin this delay doesn't send a very good message to the people of this country for an administration that has already established a pretty poor environmental record in a record of a hundred days.

Ms. WHITMAN. Well, Congressman, did you feel that way about the diesel regulation as well? Because I would say when you look at the record of this administration on the environment, the important thing is to understand that we will judge each issue on its merit individually.

We do not come to it, I will admit it, with an over arching desire to end up in one place predetermined. We want to determine each issue on its merits, and that is the way that we will do it. And sometimes we will agree and sometimes we won't.

Mr. GILLMOR. The gentleman from Illinois, Mr. Shimkus.

Mr. SHIMKUS. Thank you, Mr. Chairman. Administrator, your testimony indicates that some infrastructure needs which need to be more fully evaluated are population growth, aging infrastructure, merging environment and public health demands, operation and maintenance costs, and the affordability of water services.

And as I said in my opening statement, I would think access would be another one that we would want to make sure that we consider. I think those make an assumption that everyone has access, and so we are going to evaluate on new standards.

And we are going to evaluate on how old the equipment is. Again, I still want to continue to put the plug in for maybe just simple access that some people still need regardless of a standard. I thought I would throw that out.

Two questions. Are these items, or in other words the ones that I mentioned, to be addressed in further refinement of the gap analysis?

Ms. WHITMAN. Yes, those are all going to be things that we are going to be looking at with that gap analysis, and with an idea to seeing where we can tighten the way that we do our assessments. And we will also submit that gap analysis for peer review.

Mr. SHIMKUS. Can you also at least as you go through the process—and I again look at what we are doing for access, and what we are doing in conjunction with the U.S.D.A.

And again I just want to make the point that there are places out there where they are still hauling water in to their homes. Also, could you provide the subcommittee with any study design plans, or other documentation, upon how the evaluation of these elements will proceed?

Ms. WHITMAN. Certainly. We will be happy to provide you with anything that you need on that.

Mr. SHIMKUS. And let me again finally ask. I was trying to explain this arsenic debate on the radio a few minutes ago, and I was talking about 50 basketballs in a gymnasium, versus 10 basket-

balls parts per billion. Is that 10 versus 50, is that a good analysis, or should it be in an arena, or should it be in the Super Dome?

Do we have any idea of how you could put it down in layman's terms? How many basketballs and what size of a——

Ms. WHITMAN. Well, I would say off the top of my head that if we are doing basketballs that it would be in an arena, because we are talking about parts per billion.

Mr. SHIMKUS. State your name for the recorder so that he can get it.

Mr. HAMILL. Barker Hamill, for the State of New Jersey. Ten seconds versus 50 seconds out of 32 years.

Mr. SHIMKUS. Thank you very much. That clears—but you did not answer the basketball. Could I get submitted for the record the basketball analysis?

Ms. WHITMAN. Unfortunately, Congressman, our professional basketball team is not something that we——

Mr. SHIMKUS. Thank you, and I yield back my time, Mr. Chairman. Thank you.

Mr. GILLMOR. The gentleman yields back. Mr. Engle.

Mr. ENGEL. Well, thank you, Mr. Chairman, for holding this hearing today on safe drinking water infrastructure. Governor, welcome. From my district, I can look across the Hudson River and see New Jersey. So I am aware of your record as a Governor and the environment and I hope that as other issues are being decided in this administration that you will continue to weigh in heavily on your feelings about this.

I want to talk about something that is very parochial to my district in New York. As you may know, in New York there has been a problem implementing the Safe Drinking Water Act, particularly within my district.

About a decade ago, a filtration plant was mandated for the Crotin Reservoir, and since then four different areas in my district in The Bronx, and several sites in Westchester County just north, have been identified by the New York City Department of Environmental Protection as possible sites for the filtration plant.

There are several problems with the four possible sites in The Bronx, including the fact that they are located in densely populated areas. Now, I have problems with the filtration plant, and its potential location, and have been working to find alternatives to filtration.

I have a bill which would explore alternatives to filtration. Now, the New York city of Environmental Protection has been on a dual track; while starting the building of a filtration plant, they have also studied filtration alternatives.

And it is my understanding that there are several alternatives to filtration that might adequately protect the water supply, thereby circumventing the need to build a filtration plant.

As I have mentioned, I have introduced legislation in the past and I am drafting legislation for the current Congress, which amends the Safe Drinking Water Act to allow the use of new technologies as an alternative to filtration if it is appropriate.

Your predecessor, Carol Browner, visited the possible sites for a filtration plant and I would hope that you would consider joining me in visiting those sites and talking to community leaders about

the potential of non-industrial techniques to protect the water supply i the Crotin Reservoir.

I hope that you could do that in The Bronx, and if that is difficult, I hope that we could have a meeting here in Washington with you personally to discuss these different alternatives, and I just wanted to raise that. And I would look forward to sitting down with you either in New York or here in Washington to discuss this.

Ms. WHITMAN. I would be happy to discuss that with you, Congressman.

Mr. ENGEL. I thank you very much. Thank you, Mr. Chair.

Mr. GILLMOR. Thank you, Mr. Engel. I would like to enter into the record two items. First, comments from the American Water Works Association regarding the arsenic standard, in summary form.

And, second, correspondence and contacts between Chair Bliley and the EPA regarding delay in the arsenic research plan and funding of arsenic research, and without objection, and the Chair hearing none, those will be entered in the record.

[The information referred to follows:]

ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS—3/28/01

ASDWA POSITION STATEMENT—Drinking Water Infrastructure Funding

(#01-2001)

Reference: None

ASDWA Position

It is the position of the Association of State Drinking Water Administrators (ASDWA) that current and future funding vehicles for drinking water infrastructure improvements and state implementation activities should: 1) maintain maximum state flexibility in structure and implementation; 2) ensure long-term sustainability of the funds as well as water system capacity; 3) expand upon the current Drinking Water State Revolving Loan Fund (DWSRF) as the preferred funding vehicle; and 4) unless sufficient funding is made available through the base state Public Water Supply Supervision (PWSS) grant, maintain sufficient support through set-aside funding or other viable mechanisms to provide for administration and state SDWA implementation costs.

Rationale

The Safe Drinking Water Act (SDWA) Amendments of 1996 created enormous new programs and a complex regulatory structure that will require water systems to continue improving their water system infrastructure, and expand state implementation requirements. The SDWA provided for the creation of the DWSRF program to help finance water system infrastructure needs and for set-asides for states to supplement administrative and program implementation costs. The SDWA authorized a total of $9.6 billion for FY-94 through FY-03 for the DWSRF (although only $4.42 billion has been appropriated through FY-01). Congress authorized broad eligibilities for the drinking water funding to address serious risks to human health, ensure compliance with the SDWA, and to assist systems most in need on a per household basis. Projects that address present or prevent future violations of health-based standards as well as to replace aging infrastructure are eligible for funding. Eligible project categories include treatment, installation or replacement of transmission and distribution pipes, rehabilitation or replacement of contaminated sources, water storage, consolidation, and creating new or regional community water systems to address unsafe drinking water supplies.

Congress and the U.S. Environmental Protection Agency (EPA) provided for loans at or below market interest rates including zero interest rate loans and provided further flexibility for states to provide loan subsidies such as principal forgiveness and negative interest rate loans to disadvantaged communities or communities that would become disadvantaged as a result of a project. They also allowed specified transfers of funds between the Drinking Water and Clean Water revolving funds, and created set-asides for states to fund training and technical assistance, fund ad-

ministration, source water protection, operator certification, and state PWSS program implementation.

To date, the DWSRF has proven extremely successful. Through June 30, 2000, EPA had made available more than $2.7 billion to all 50 states and Puerto Rico to capitalize state revolving loan funds. States had made approximately 1,200 low-interest loans totaling more than $2.3 billion with 75 percent of the loans (40 percent of the funds) going to small water systems. States reserved and matched approximately $445 million of the fund for capacity development, operator certification, source water protection, PWSS program implementation, source water assessments and delineations, technical assistance to small systems, and fund administration. This flexibility has allowed states to maximize infrastructure funding as well as ensure that needed tools and assistance are provided to water systems.

Maintaining and expanding this successful DWSRF structure must be ensured if we are to continue to meet growing drinking water infrastructure needs. EPA's recent 1999 Drinking Water Infrastructure Needs Survey highlights $150.9 billion in infrastructure need nationwide over the next 20-year period through 2018. Of this total, 68 percent, or $102.5 billion is needed now to ensure the provision of safe drinking water. Transmission and distribution projects represent the largest category of identified need followed by treatment, storage, and source.

As Congress debates the future of infrastructure funding needs and funding vehicles, ASDWA strongly encourages the continued support of the DWSRF as a viable, successful model.

U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515-6115

October 24, 1997

The Honorable Carol M. Browner
Administrator
Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Administrator Browner:

I am writing to you concerning implementation of the provisions of the 1996 Safe Drinking Water Act Amendments (SDWAA) pertaining to arsenic.

As you know, section 1412(b)(12)(A) of the SDWAA requires EPA to develop a comprehensive plan for study in support of reducing the uncertainty in assessing health risks associated with exposure to low levels of arsenic. Section 1412(b)(12)(A) further requires EPA to propose a national primary drinking water regulation for arsenic no later than January 1, 2000, and to finalize the regulation no later than January 1, 2001.

Section 1412(b)(12)(A) requires EPA to develop its comprehensive arsenic research plan within 180 days of enactment of the SDWAA -- or by February 6, 1997. However, as of this date -- more than eight months after the deadline -- EPA has still not finalized the research plan.

At the same time as you provided Congress with a draft copy of the plan, a copy was provided to the Board of Scientific Counselors (BOSC) for evaluation. It is my understanding that the BOSC completed its review of the draft plan in May 1997 and provided EPA with numerous recommendations to better focus the research for short and long-term projects aimed at reducing the uncertainties in the arsenic health effects data base. Despite having had the BOSC recommendations for nearly 6 months, the Agency has yet to finalize the Research Plan, and, more importantly, to establish a coordinated program to conduct this much needed research.

Particularly striking was the BOSC's recommendation that EPA needs to place priority attention on human epidemiological studies which, in it's view, "should be accorded the highest research priority . . . [because it] holds the greatest potential for reducing the uncertainties in the risk assessment needed to revise the MCL." The BOSC also observed that the threshold for skin cancer is likely to be in the range of 100-200 μg/l and recommended that the Agency "needs to

consider the findings of current U.S. population studies in both its risk characterization and its research planning."

While I am pleased to see that EPA, in conjunction with the American Water Works Association Research Foundation (AWARF) and the Association of California Water Agencies (ACWA) -- issued a joint Request for Application (RFA) to undertake $3 million in arsenic research, it appears that this effort may not be adequate to resolve the significant uncertainties which currently exist concerning the health effects of exposure to low levels of arsenic. Congress reiterated its commitment to developing an arsenic standard which is based on sound science and protective of human health when it allocated an additional one million dollars in the conference report for the 1998 VA/HUD Appropriations bill. These funds are to be matched with $500,000 each from AWARF and ACWA, thus raising the total amount available for arsenic research to $5 million. It is important that the Agency, for it's part, address the BOSC recommendations expeditiously and incorporate them, where appropriate, in finalizing the Arsenic Research Plan to meet the requirement set forth in the Act.

It has been more than a year since the passage of the SDWAA, and I am concerned that there has not been adequate progress in initiating the necessary research to bring this long standing and contentious issue to resolution. It is becoming clear that unless the research efforts are accelerated, EPA will, contrary to the intent of the SDWAA, promulgate a revised arsenic standard without the benefit of new research.

To gain a better understanding of the Agency's progress and current activities regarding the implementation of section 1412(b)(12)(A) of the 1996 SDWAA, I am requesting that you provide responses to the following questions by November 10, 1997:

1. When does the Agency anticipate finalizing the Arsenic Research Plan? When will the finalized plan be submitted to Congress?

2. Please describe the process by which EPA will select the priority research projects. Please indicate when the actual research activities will be undertaken.

3. The February draft of the EPA Arsenic Research Plan identified 45 projects, 32 of which the Agency classified as high priority. The BOSC noted that EPA's criteria to prioritize the research tasks were inadequate, and offered four criteria for selecting the most important short and long-term research projects. In light of the following four BOSC criteria, please discuss those projects the Agency believes are high priority:

   a) Will the research improve the scientific basis for risk assessment needed for proposing a revised arsenic MCL by January 1, 2000?

   b) Will the research improve the scientific basis for risk management needed in proposing a revised arsenic MCL by January 1, 2000?

c) Will the research improve the scientific basis for risk assessment or risk management needed to review and develop future MCLs beyond the year 2000?

d) Is the research absolutely essential to improving our scientific understanding of the health risks posed by arsenic.

4 Please describe for each priority research project the costs to implement the project and a realistic assessment of the time necessary to initiate, as well as complete, the work.

5. Please discuss the Agency's reaction to BOSC's recommendation that EPA risk managers look at a two-phase approach of "first, setting a MCL value by the year 2000 that balances current scientific information on health risks with costs and other risk management factors, and, second, establishing a more definitive MCL by the year 2010, or earlier if feasible, based on results available from long term studies." Please describe the priority research currently planned which would advance the BOSC's recommendation.

6. In light of the BOSC's recommendation to afford epidemiological studies the highest research priority, please explain the Agency's position on the priority status of conducting an epidemiological study. Please provide an estimate of the cost and time frame for obtaining results from such a study.

7. In its May report, the BOSC listed five short-term research areas that it felt were "critical" to support future epidemiological studies. These critical areas included: exposure assessment; evaluation of existing exposure and health databases and ongoing epidemiological research; epidemiology feasibility and scoping studies; treatment technologies; and analytical methods development. Please discuss EPA's response to these recommendations. What has the Agency done in revising the draft Arsenic Research Plan to embrace these areas for short-term development? Will this work be completed in time for the rulemaking in the year 2000?

8. The BOSC has stated its belief that "it is likely that the dose response curve for arsenic has a threshold," and recommends in its conclusion "that EPA not use a linear model of the dose response relationship between arsenic and excessive cancers to estimate the health risk for various levels of arsenic." What is the Agency's response to this recommendation? Please discuss how the Agency will approach the risk assessment process in the year 2000 if, as BOSC and other scientific groups have suggested, arsenic has a threshold.

I appreciate the attention that I know you and your staff will provide in responding to these questions. If you have any questions, please contact Chris Wolf, of my staff, at (202) 226-2424. Thank you for your prompt attention to this matter

Sincerely,

Tom Bliley
Chairman

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
RESEARCH AND DEVELOPMENT

Honorable Tom Bliley, Chairman
Committee on Commerce
U.S. House of Representatives
Washington, D.C. 20515-6115

Dear Mr. Chairman:

Thank you for your interest in Environmental Protection Agency's (EPA) efforts regarding the implementation of the 1996 Safe Drinking Water Act Amendments (SDWWA) pertaining to arsenic and, in particular, the development of an Arsenic Research Plan. As you noted in your letter of October 24,1997, section 1412(h)(12)(A) requires the Agency to develop a comprehensive plan for research in support of reducing the uncertainties in assessing health risks associated with exposures to low levels of arsenic in drinking water. We are happy to have this opportunity to provide you with an update on the Agency's progress to date on the development and finalization of the research plan. In addition, you have raised several questions concerning EPA's response to the Board of Scientific Counselors (BOSC) peer review and recommendations, research priorities and current research activities to support rulemaking in the year 2001 as well as longer term studies that may provide the basis for future regulations in the year 2010 or sooner. Information, including a copy of EPA's June 6, 1997 response to the BOSC, specifically addressing your questions and comments has been appended to this letter.

I would like to briefly address a few of your comments regarding EPA's progress on the development of the Arsenic Research Plan, specifically raised in *Question 1* of your letter. EPA worked very diligently to draft and conduct an external peer review of the arsenic research plan within the time frame specified in the 1996 SDWWA. This plan summarizes the state of the science and uncertainties associated with the health risks posed by arsenic in drinking water. The research contained within the plan includes ongoing in-house Agency efforts, research being addressed through EPA's Science to Achieve Results Program in partnership with the American Water Works Association Research Foundation and the Association of California Water Agencies, and proposed areas of future research to address risk uncertainties. EPA agrees with many of the comments provided by the BOSC committee and has incorporated these changes in the revised research plan. There are several issues raised by the BOSC, however, that are more difficult to address thus delaying the finalization of the research plan. These issues are being resolved, and the plan will soon be undergoing a final internal review. We anticipate that the plan will be completed in early 1998.

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In addition, in *Question 7* you raise the issue of the BOSC's recommended five short-term research areas. As you know, the BOSC recommended short-term priorities including evaluation of existing health databases and preparation for a human epidemiological study. For the long-term, the BOSC recommended adding a full-scale epidemiology study as the highest priority. Many of the short-term priority recommendations align closely with EPA's ongoing work to survey arsenic occurrence, develop standard analytical methods for arsenic species in water, determine treatment efficiency, investigate residuals management, and assess cost considerations. This having been said, it should be clear that EPA has not waited on the final Research Plan to begin this work. As indicated above, a more detailed discussion of these issues and research projects are attached. It should be noted that the estimated resource funding levels for out-year projections beyond FY 1998 are still in a development stage.

In addition to the various research efforts summarized in the attachments, I understand that the Agency's Office of Water has undertaken a number of initiatives that also relate to *Question 7*. These initiatives (e.g., review of recent State and utility occurrence data, contractor-supported technical evaluations of treatment technologies, literature reviews, etc.) are designed, together with available research results, to provide a sound scientific and technical basis for the proposed and final regulation.

The Office of Water has asked that I convey to you their commitment to adhering to the statutory deadlines associated with a new regulation for arsenic in drinking water. In this regard, Office of Water officials concur with the BOSC's recommendations as summarized in *Question 5* of your letter. Namely, that as a first step, a final maximum contaminant level (MCL) for arsenic in drinking water will be established by January 1, 2001 utilizing the best available peer-reviewed science. However, in recognition of planned or ongoing research whose results will not be available by the statutory deadlines, the Agency is committed to reevaluating, and revising as appropriate, the regulation based upon information from longer term studies. This reevaluation will occur at least every 6 years after promulgation of the new regulation, as required by the Safe Drinking Water Act, or sooner, if appropriate.

I want to thank you for your interest and support of EPA's efforts on arsenic. If you have any comments concerning this EPA response or the Arsenic Research Plan, please contact Dr. William H. Farland, Director, National Center for Environmental Assessment, who is the EPA Office of Research and Development's Executive Lead on this Research Plan. Dr. Farland can be reached on (202) 260-7316.

Sincerely,

Stephen A. Herman

Henry L. Longest II
Acting Assistant Administrator

Attachments

ONE HUNDRED SIXTH CONGRESS

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U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515–6115

March 24, 1999

The Honorable Carol M. Browner
Administrator
Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20460

Dear Administrator Browner:

On October 24, 1997, I wrote to you concerning the status of the Environmental Protection Agency's (EPA's) arsenic research plan mandated under section 1412(b)(12)(A) of the Safe Drinking Water Act Amendments of 1996 ("1996 Amendments").

As you know, EPA did not complete work on the arsenic research plan until February, 1998, a full year after the statutory deadline established by the 1996 Amendments. In your response to my letter, however, Acting Assistant Administrator for the Office of Research and Development, Henry L. Longest II assured me that "EPA has developed an overarching Research Strategy that lays out the top priorities for ORD to pursue during the next 5-10 years. The Research Strategy has specifically identified research on arsenic among its highest priorities."

Yesterday, the National Research Council issued an extensive report on Arsenic in Drinking Water. This report stated that "it is the subcommittee's consensus that the current EPA MCL for arsenic in drinking water of 50 ug/L does not achieve EPA's goal for public-health protection and, therefore, requires downward revision as promptly as possible." The NRC recommended, however, that further sensitivity analyses were needed, that information on nutritional factors should be investigated, that more human studies were needed, including research on human tissues, and that further epidemiological study was necessary. As the report stated, "The final risk value should be supported by a range of analyses over a broad range of feasible assumptions."

In view of past delay by your Agency in formulating an arsenic research plan, and in view of the NRC's new report citing the need for extensive research, I believe it is imperative to review your Agency's present arsenic research effort. Specifically, the Administration's fiscal year 2000 budget request for your Agency devotes $41.5 million for all drinking water research, representing a *reduction* of $6.2 million from the safe drinking water research budget enacted in

fiscal year 1999 and a *reduction* of $2.6 million from the Administration's own budget request for fiscal year 1999. Moreover, the fiscal year 2000 request proposes to totally eliminate $1 million in arsenic research conducted by the American Water Works Association Research Foundation, funding which I understand is leveraged with private resources.

In order to better assess EPA's research effort on arsenic, I would appreciate receiving your response by no later than April 2, 1999 to the following questions:

(1) Please indicate the level of arsenic research funding which the Administration requested, and which was actually appropriated by Congress, for fiscal years 1997, 1998 and 1999.

(2) Please indicate, in each of fiscal years 1997 through 1999, on what date appropriations for arsenic research were made available to the EPA and on what date(s) such funds were actually committed and expended by the EPA for such research.

(3) Please provide a written explanation regarding any delay between the time that Congress made funds available to EPA for arsenic research and the time in which the Agency expended such funds for each of fiscal years 1997 through 1999.

(4) Please provide a specific line-by-line breakout of all arsenic research projects either conducted by EPA or funded through outside contracts for fiscal years 1997 through 1999. Please provide a specific line-by-line breakout of all arsenic research projects that are included in the fiscal year 2000 budget request, specifically including those projects which are contained with the $34.6 million "DW Base" funding as defined by your Office of Research and Development.

(5) It is my understanding that the $1 million in arsenic research that EPA proposed to eliminate in fiscal year 2000 included efforts to refine analytical methods for determining arsenic species in food, to examine the impact of arsenic on gene expression and its relationship to cancer, and to help determine a dose-response relationship for arsenic ingested by humans at low levels in drinking water. Please explain why the Administration did not request funding for this research. Please indicate any other arsenic research projects in fiscal year 2000 which will provide EPA with equivalent or better information than the eliminated funding.

Thank you for your kind assistance with this request. If you have any questions, please do not hesitate to contact me or Committee counsel (Robert Meyers 202-225-2927).

Sincerely,

Tom Bliley

Tom Bliley
Chairman

TB/rjm

cc: The Honorable John D. Dingell
Ranking Minority Member

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 0 9 1999

OFFICE OF
RESEARCH AND DEVELOPMENT

Honorable Tom Bliley
Chairman
Committee on Commerce
House of Representatives
Washington, D.C. 20515-6115

Dear Mr. Chairman:

This is in response to your letter of March 24, 1999, in which you asked several questions concerning the Environmental Protection Agency's (EPA) research effort on arsenic. As the enclosed answers to these questions indicate, the Agency is making considerable progress in addressing the research needs identified in the *Research Plan for Arsenic in Drinking Water* through a combination of in-house research by EPA scientists and research partnerships with outside organizations.

Your letter also made reference to the recent report by the National Research Council (NRC) on *Arsenic in Drinking Water*. I am pleased to inform you that our current arsenic research program is directly in line with the types of research recommended by the NRC. This report will be an extremely valuable guide to future research that will further strengthen the scientific basis for the arsenic risk assessment.

I appreciate this opportunity to be of service and trust that this information will be helpful to you. If you have any questions, please call me at 202-564-6620.

Sincerely,

Norine E. Noonan

Norine E. Noonan, Ph.D.
Assistant Administrator

Enclosure

cc: Honorable John D. Dingell
Ranking Minority Member

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Representative Bliley

Arsenic

Question 1: Please indicate the level of arsenic research funding which the Administration requested, and which was actually appropriated by Congress, for fiscal years 1997, 1998, and 1999.

Answer 1:

	Total $ (in millions)	
FY 1997 Pres. Bud.	0.0 FTE	$0.0
FY 1997 Enacted	1.0 FTE	$4.8
FY 1998 Pres. Bud.	14.5 FTE	$3.2
FY 1998 Enacted	14.2 FTE	$3.7
FY 1999 Pres.Bud.	14.0 FTE	$2.7
FY 1999 Enacted	15.4 FTE	$4.3

Question 2: Please indicate, in each of the fiscal years 1997 through 1999, on what date appropriations for arsenic research were made available to the EPA and on what date(s) such funds were actually committed and expended by the EPA for such research.

Answer 2: EPA generally receives its appropriated funding levels in the fall of each year. Once this occurs, the Agency develops its detailed operating plan for submission to our Congressional Appropriation subcommittees for review and approval. EPA received approval of its operating plan on the following dates:

1997 Enacted: January 22, 1997
1998 Enacted: February 23, 1998
1999 Enacted: February 23, 1999

EPA begins implementing its programs once its operating plan goes to Congress for review, although there are some limitations on spending until it receives Congressional approval. Obligation of our research funding occurs in a normal and prudent basis throughout the life of the appropriation, which for S&T is two years. An inherent part of this process is our competitive peer review policy to ensure the quality of our science. This includes requiring relevancy and peer review of Congressional earmarks prior to funding awards.

Our Drinking Water research program obligations are therefore subject to the process outlined above. The specific dates that these funds are committed and expended for all of the numerous arsenic research tasks vary throughout the year, the timing of which is dependent upon the nature of the funding need that has been identified and the funding mechanism that is being used.

Question 3: Please provide a written explanation regarding any delay between the time that Congress made funds available to EPA for arsenic research and the time in which the Agency expended such funds for each of fiscal years 1997 through 1999.

Answer 3: As described above, since FY 1997, there have been no delays in the initiation of in-house research activities performed by EPA scientists or in the year-to-year

funding of these projects. There have also been no delays in committing funds for those projects conducted by outside investigators supported through cooperative agreements, interagency agreements, contracts or grants, other than the normal amount of time that is involved administratively and to ensure the scientific quality of the research that is proposed and conducted.

Question 4: Please provide a specific line-by-line breakout of all arsenic research projects either conducted by EPA or funded through outside contracts for fiscal years 1997 through 1999. Please provide a specific line-by-line breakout of all arsenic research projects that are included in the fiscal year 2000 budget request, specifically including those projects which are contained with the $34.6 million "DW Base" funding as defined by your Office of Research and Development.

Answer 4: The arsenic research projects conducted or funded by EPA since 1997 represent a broad range of research that will contribute to an improved scientific basis for proposing a revised Maximum Contaminant Level (MCL) for arsenic by January 1, 2000, and for reviewing and developing a revised arsenic MCL beyond the year 2001. These research activities have been guided by the Agency's peer-reviewed *Research Plan for Arsenic in Drinking Water*, which describes both short-term and long-term studies that are being conducted by EPA and outside investigators in a number of key areas including: a) improving our understanding of the cancer and noncancer human health effects associated with exposure to arsenic; b) measuring exposures of the U.S. population to arsenic from various sources (particularly through drinking water and diet); c) improving methods for measuring exposure and assessing risks; and d) refining treatment technologies to remove arsenic from water supplies.

The attached table provides additional detail on arsenic research activities being conducted or supported by EPA for fiscal years 1997 through 1999. The table also indicates which projects are planned to continue into FY 2000. Each of these activities is typically a multi-year research effort conducted either by EPA scientists in-house or by outside investigators supported through cooperative agreements, contracts or grants. All of these projects are described in the *Research Plan for Arsenic in Drinking Water*.

Question 5: It is my understanding that the $1 million in arsenic research that EPA proposed to eliminate in fiscal year 2000 included efforts to refine analytical methods for determining arsenic species in food, to examine the impact of arsenic on gene expression and its relationship to cancer, and to help determine a dose-response relationship for arsenic ingested by humans at low levels in drinking water. Please explain why the Administration did not request funding for this research. Please indicate any other arsenic research projects in fiscal year 2000 which will provide EPA with equivalent or better information than the eliminated funding.

Answer 5: EPA has a longstanding policy not to request Congressional earmarks as part of the President's Budget, regardless of purpose. EPA develops its President's Budget request on the basis of a risk-based planning process. This process enables us to focus research on the greatest risks to people and the environment. Our current request will support research in the high priority areas described in the attached table. The general research areas covered by this request include: the development of improved methods to characterize and quantify arsenic exposure; the assessment of parameters impacting arsenic toxicity; research to provide a better understanding of arsenic dose-response at low doses, as well as the relationship between metabolism and toxicity; and the evaluation and further development of cost-effective and technically feasible arsenic control technologies.

ARSENIC RESEARCH CONDUCTED OR SUPPORTED BY EPA IN FISCAL YEARS 1997 - 2000

Research Issue	Description	Fiscal Year
Risk assessment and risk characterization of arsenic - short term	Conduct mode of action workshop; Synthesize health and exposure data to support arsenic risk characterization; Assessment of reproductive effects of chronic exposure to arsenic	1997 - 2000
Innovative approaches in arsenic risk assessment - long term	Analysis of data on non-cancer health effects of arsenic in drinking water to determine dose-response and susceptibility	1997 - 2000
Develop arsenic speciation methodology to separate As(III) from As(V) to support water treatment decisions in large and small utilities	Evaluation of analytical techniques for inorganic As(III) and As(V) in water, and evaluation of sample preservation techniques for arsenic species	1997 - 1999
Develop extraction methods for inorganic and organic arsenicals to allow for the separation and detection of individual arsenic species in foods	Speciation of arsenic in target food items	1999 - 2000
Develop arsenic speciation methods in biological matrices to support exposure assessment, bioavailability, and biomarker research	Refinement and evaluation of an analytical approach for separating As(III), As(V), MMA, DMA and arsenobetaine in urine	1998 - 1999
Develop biomarkers of exposure in biological media for use in epidemiology studies	Evaluation of the usefulness of inorganic arsenic and metabolites in urine as biomarkers of exposure in epidemiology studies in the U.S.	1997 - 2000
Health effects and dose-response associated with arsenic exposure	Conduct pilot and full scale epidemiology studies in the U.S. to evaluate noncancer and cancer risks	1997 - 2000
Dose-response relationships at low doses	Evaluation of the relationship between metabolism and toxicity; Development of data to support a physiologically based pharmacokinetic model for arsenic, Study of the mode of action of arsenic toxicity; Evaluation of arsenic-glutathione reductase and skin cancer	1997 - 2000
Modifiers of susceptibility	Evaluation of the impact of micronutrient status on arsenic metabolism and toxicity; Evaluation of the prevention of arsenic-induced malformations by antioxidants, selenium and zinc; Arsenicals, glutathione reductase and cellular redox status	1997 - 2000
Effectiveness of available arsenic treatment technologies for meeting a lower MCL	Conduct laboratory and field tests on arsenic control technologies (incl. small systems)	1997 - 2000
Effective management of arsenic enhanced residuals	Conduct studies on the arsenic characteristics (quantity and composition) of the residual material generated by different treatment technologies	1998 - 2000

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U.S. House of Representatives
Committee on Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515–6115

June 16, 1999

The Honorable Carol M. Browner
Administrator
U.S. Environmental Protection Agency
401 M Street, S.W.
Washington, D.C. 20515

Dear Administrator Browner:

On March 24, 1999, I wrote to you concerning several matters with respect to the Environmental Protection Agency (EPA) budget requests and spending for arsenic research. On April 9, 1999, Assistant Administrator Norine E. Noonan responded to my letter on your behalf.

I am writing to request further information as well as to insist on full answers to the questions I originally posed in my March 24th correspondence. Unfortunately, in several areas, the April 9th letter I received from Assistant Administrator Noonan was incomplete, vague and/or nonresponsive. Therefore, I would like to request that you provide me with answers to the following questions by June 22, 1999.

(1) Question number 4 of my March 24th letter asked for a "line-by-line breakout of all arsenic research projects either conducted by EPA or funded through outside contracts for fiscal years 1997 through 1999." I also requested such a breakout for all arsenic research projects contained in the fiscal year 2000 budget request. While Assistant Administrator Noonan provided a general table to respond to this request, the information provided does not contain any project-specific information.

(a) Please provide a line-by-line breakout of all extramural arsenic research projects and activities conducted for fiscal years 1997 through 1999 and all projects planned for the remainder of fiscal year 1999 and fiscal year 2000. For each project or activity, please include the following information in a separate column, or through the use of another understandable format: the EPA grant number, the title of each study, the investigator(s) for each study, the institution(s) involved in

each study, the project period of each study, the project amount, and an indication of the specific fiscal year funds which have been allocated for each study. Please also indicate whether any such studies have been or will be published and peer-reviewed. For each project or activity, please also indicate what issues and questions will be explored which are relevant to the need for EPA to propose a new drinking water standard for arsenic by January 1, 2000.

(b) Please provide a line-by-line breakout of all arsenic research conducted by EPA employees for fiscal years 1997 through 1999 and planned for remainder of fiscal year 1999 and fiscal year 2000. For each research project or activity, please include the following information, in a separate column or by another understandable format: the name, title or identification of each research project or activity, the EPA personnel who are or were assigned to each project or activity, the name of the EPA office or other entity to which each employee was assigned, the amount of funds and associated FTE expended on each research project or activity, the specific fiscal year which provided the funds for each project or activity, and the current status and completion deadline that is applicable to each research project or activity. Please also indicate whether all or any part of each research project or activity will be published and peer-reviewed. For each project or activity, please also indicate in a written statement what issues and questions will be explored which are relevant to the need for EPA to propose a new drinking water standard for arsenic

(2) Question number 2 of my March 24th letter asked for information regarding "on what date(s) [arsenic research] funds were actually committed and expended by EPA" for fiscal years 1997 through 1999. Ms. Noonan's reply indicated that "Obligation of our research funding occurs in a normal and prudent basis throughout the life of the appropriation, which for S&T is two years." Ms. Noonan provided no further information when any arsenic research funds were committed or expended during the 3 fiscal years requested.

(a) Please describe in detail what accounting and auditing systems are used to track the expenditure of EPA arsenic research funds when such funds are spent either internally by the Agency, or when such funds are spent externally through extramural EPA grants and contracts.

(b) Consistent with the format of the information provided in response to question (1) above, please provide specific dates for all funding commitments and specific dates for the actual expenditure of funds for extramural arsenic research which utilized sums provided by Congress in fiscal years 1997 through 1999. Please

include dates for the commitment and expenditure of such funds which occurred both before, and which are planned to occur after, the end of fiscal year 1999. Please also indicated with respect to each disbursement whether the funds involved were fiscal year 1997, fiscal year 1998 or fiscal year 1999 funds.

(c) Consistent with the format of the information provided in response to question (1) above, please provide specific dates for all funding commitments or actual expenditure of funds for internal research conducted by EPA on arsenic in drinking water which utilized sums provided by Congress in fiscal years 1997 through 1999. Please include the date(s) on which EPA committed such funding and the date(s) on which EPA made an expenditure of funds for each research project or activity. Please include the expenditure of such funds which occurred both before and after the end of fiscal year 1999.

(3) Question number 3 of my March 24th letter asked for a written explanation for any delay between the time Congress made funds available for arsenic research and the time in which the Agency expended such funds for each of fiscal years 1997 through 1999. Assistant Administrator Noonan's April 9th response indicated that there have been "no delays in committing funds for those projects conducted by outside investigators . . . other than the normal amount of time that is involved administratively and to ensure the scientific quality of the research that is proposed and conducted."

(a) I am informed, however, that outside research grants to the American Water Works Association Research Foundation (AWWARF) for fiscal year 1997 were not made until September 29, 1997, literally one day before the end of the fiscal year. I am also informed that similar funds in fiscal year 1998 were applied for by AWWARF on February 20, 1998 but not disbursed until September 17, 1998. Finally, I am informed that although AWWARF applied for fiscal year 1999 funds on December 30, 1998, such funds have not yet been disbursed, and AWWARF has been informed not to expect such funds until September of this year.

(i) Please indicate for each fiscal year cited above how much of the time which elapsed between the availability of funds to EPA and their actual disbursement by EPA was (or is) due to administrative requirements. Please indicate precisely what "administrative requirements" were applicable with respect to each disbursement.

(ii) Please indicate with respect to each fiscal year cited above how much of the time between the availability of funds to EPA and their actual disbursement by EPA was (or is) due to the necessity to ensure the scientific quality of the research. Please indicate precisely what scientific reviews or other actions were undertaken by EPA during each of the fiscal years cited above to ensure the scientific quality of this research.

(4) Question number 5 of my March 24th letter requested information on specific projects within the President's's fiscal year 2000 budget request that will provide EPA with "equivalent or better" information than the funding for arsenic research which was eliminated by this request. Assistant Administrator Noonan's response only mentioned general research areas covered by the request, and did not compare the research being contemplated within the President's budget request with the research sought to be conducted under the $1.6 million in funding which was eliminated from the President's request. Please provide an answer to the original question I posed on March 24th.

(5) Your office of Congressional Liaison has indicated that $2.8 million of the President's fiscal year 2000 budget request will be spent for arsenic research. This amount represents a reduction of $1.6 million over actual spending in fiscal year 1999 according to the figures represented in the "Drinking Water Research Program Summary (SDWA By Statute)." At least some of the eliminated funding may represent ongoing extramural research that has been conducted over the last four fiscal years. Your Agency's February 1998 Research Plan for Arsenic in Drinking Water states, however, that "the research needs are broader than EPA can address alone, and it is anticipated that other entities will be involved in conducting some needed research." The plan further states that, "The ability for EPA to leverage the research interest of other parties to conduct portions of this arsenic research also plays an important part in the implementation process." Additionally, the plan indicates in several specific places (e.g., pages 26, 32, 33, 45) that EPA has insufficient resources to conduct needed research or that non-EPA resources will be needed.

(a) Please indicate all arsenic research which EPA has utilized in support of the requirements of the 1996 Safe Drinking Water Act Amendments in fiscal years 1997 through 1999, and all arsenic research which is planned in the remainder of fiscal year 1999 and fiscal year 2000, that was conducted or is planned to be conducted or financed by:

(i) other entities outside of EPA within the Federal government
(ii) any state or local governmental entities
(iii) any other non-EPA and non-governmental source

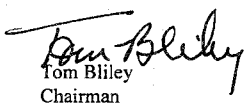
(b) With regard to the Administration's requested expenditure of $2.8 million for arsenic research in fiscal year 2000, what portion of this amount does EPA plan to spend on research projects or activities conducted within the Agency? What portion of this amount does EPA plan to spend on extramural arsenic research projects or activities?

(c) With reference to the amounts indicated under (b) above, please describe in detail what research will be conducted.

(d) Please explain in detail how the Administration's fiscal year 2000 budget request conforms to the February 1998 Research Plan for Arsenic in Drinking Water. Please itemize any studies or research projects outlined in the research plan as a high priority that will not be completed prior to the date by which EPA must propose new standards for arsenic.

Thank you for your prompt attention to these requests. If you need further information concerning this letter or the questions contained therein, please do not hesitate to contact me or Committee counsel, Mr. Robert Meyers at 202-225-2927.

Sincerely,



Tom Bliley
Chairman

TB/rjm

cc: The Honorable John D. Dingell
Ranking Minority Member

The Honorable Michael Bilirakis
Chairman, Health and Environment Subcommittee

The Honorable Sherrod Brown
Ranking Minority Member, Health and
Environment Subcommittee

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF
RESEARCH AND DEVELOPMENT

JUL 12 1999

Honorable Tom Bliley
Chairman
Committee on Commerce
House of Representatives
Washington, D.C. 20515-6115

Dear Mr. Chairman:

I am happy to respond to your letter to Administrator Browner of June 16, 1999, in which you asked for further information on the U.S. Environmental Protection Agency (EPA) budget request and spending for arsenic research and a clarification of answers previously provided to you in response to your March 24 correspondence on this topic. The enclosed answers to your most recent questions provide information that I hope will address your concerns satisfactorily.

We are pleased to report that EPA has completed or is on schedule to complete all of the short-term research that we made a commitment to finish in the Agency's *Research Plan for Arsenic in Drinking Water*. The results of these newer studies will be considered, along with the existing research information on health effects, exposure and risk management, as we assess the risks and evaluate treatment options in support of a new rule for arsenic by the statutory deadline of January 2001. Additionally, significant progress is being made by Agency investigators, scientists elsewhere in the Federal government and non-Federal researchers in addressing longer-term science needs in support of future reviews of the arsenic standard. We remain committed to the use of the highest quality sound science in meeting our statutory mandates.

We will, of course, continue to work with your staff to address any remaining questions. Please call me at 202-564-6620 if I can be of further assistance.

Sincerely,

Norine E. Noonan

Norine E. Noonan, Ph.D.
Assistant Administrator

Enclosures

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Representative Bliley - Arsenic

Question 1(a). Please provide a line-by-line breakout of all extramural arsenic research projects and activities conducted for fiscal years 1997 through 1999 and all projects planned for the remainder of fiscal year 1999 and fiscal year 2000. For each project or activity, please include the following information: the EPA grant number, the title of each study, the investigator(s) for each study, the institution(s) involved in each study, the project period of each study, the project amount, and an indication of the specific fiscal year funds which have been allocated to each study. Please also indicate whether any such studies have been or will be published and peer-reviewed. For each project or activity, please also indicate what issues and questions will be explored which are relevant to the need for EPA to propose a new drinking water standard for arsenic by January 1, 2000. **[Response begins after Question 2(c)]**

Question 1(b). Please provide a line-by-line breakout of all arsenic research conducted by EPA employees for fiscal years 1997 through 1999 and planned for remainder of fiscal year 1999 and fiscal year 2000. For each research project or activity, please include the following information, in a separate column or by another understandable format the name, title or identification of each research project or activity, the EPA personnel who are or were assigned to each project or activity, the name of the EPA office or other entity to which each employee was assigned, the amount of funds and associated FTE expended on each research project or activity, the specific fiscal year which provided the funds for each project or activity, and the current status and completion deadline that is applicable to each research project or activity. Please also indicate whether all or any part of each research project or activity will be published and peer-reviewed. For each project or activity, please also indicate in a written statement what issues and questions will be explored which are relevant to the need for EPA to propose a new drinking water standard for arsenic. **[Response begins after Question 2(c)]**

Question 2(b). Consistent with the format of the information provided in response to question (1) above, please provide specific dates for all funding commitments and specific dates for the actual expenditure of funds for extramural arsenic research which utilized sums provided by Congress in fiscal years 1997 through 1999. Please include dates for the commitment and expenditure of such funds which occurred both before, and which are planned to occur after, the end of fiscal year 1999. Please also indicate with respect to each disbursement whether the funds involved were fiscal year 1997, fiscal year 1998 or fiscal year 1999 funds. **[Response begins after Question 2(c)]**

Question 2(c). Consistent with the format of the information provided in response to question (1) above, please provide specific dates for all funding commitments or actual expenditure of funds for internal research conducted by EPA on arsenic in drinking water which utilized sums provided by Congress in fiscal years 1997 through 1999. Please include the date(s) on which EPA committed such funding and the date(s) on which EPA made an expenditure of funds for each research project or activity. Please include the expenditure of such funds which occurred both before and after the end of fiscal year 1999.

Answer. In response to questions 1(a), 1(b), 2(b) and 2(c) of your June 16th letter, please find attached detailed information regarding our internal and external arsenic research program. The attachments are as follows:

Attachment 1: This attachment addresses questions 1(a) and 2(b) as identified in your letter as "extramural"arsenic research projects. It provides a breakout of external extramural arsenic research, i.e., research conducted outside of EPA with EPA funding, including commitment and obligation information for fiscal years 1997 to 1999.

Attachment 2: This attachment addresses questions 1(b) and 2(c) as identified in your letter as arsenic research "conducted by EPA employees." It provides a breakout of in-house extramural arsenic research, i.e., research conducted within EPA, for fiscal years 1997 to 1999.

Attachment 3: FY 1997 to FY 1999 arsenic resources (extramural $ and FTE) arrayed by research project; FY 2000 resources arrayed by arsenic research issues.

Attachment 4: List of EPA research projects from the *Research Plan for Arsenic in Drinking Water*

Consistent with our conversations with Mr. Meyers of your staff subsequent to the receipt of your June 16th letter, we have included commitment and obligation data associated with questions 1 and 2. Detailed project level information for FY 2000 will be developed as part of the operating plan process. This information can be provided to the Committee in the Fall.

Question 2(a). Please describe in detail what accounting and auditing systems are used to track the expenditure of EPA arsenic research funds when such funds are spent either internally by the Agency, or when such funds are spent externally through extramural EPA grants and contracts.

Answer. EPA's financial system tracks expenditures at the Program Element (PE) level and, as of FY 1999, the Program Results Code (PRC) level. The EPA's Drinking Water Research Program, which includes the arsenic research program, is trackable using the PE and PRC. There are several EPA automated systems that are used to track the expenditure of grants and contracts. The following is a description of each of these systems and the information that is tracked using a combination of identifiers other than PE and PRC. We are therefore able to compile resources for arsenic research using these systems.

Integrated Financial Management System (IFMS) - IFMS is the Agency's official accounting and budget execution system. This financial system stores all financial activity, including transactions related to contracts, grants, cooperative agreements, interagency agreements (IAGs), as well as those related to in-house activity (e.g., payroll,

travel, expenses). Contract and grant/cooperative agreement activity is downloaded into IFMS from other systems while obligation and disbursement information for IAGs, identified by IAG number, is directly entered into IFMS by the Cincinnati Financial Management Center. IFMS uses various electronic funds disbursement mechanisms to disburse funds, including the disbursement of grant payments to recipients as well as vendors.

Management and Accounting Reporting System (MARS) - MARS is the Agency's official reporting system. On a nightly basis, it captures all transaction data accepted into IFMS that day. A user can run a report and obtain by transaction (e.g., contract, grant, IAG) all obligation and disbursement data recorded as of the evening of the previous day. A report can be run to obtain information on the document transaction number, financial accounting data, or vendor/grantee name.

Integrated Contract Management System (ICMS) - ICMS currently tracks a contract, using a contract number, from the solicitation stage through contract award and final contract modifications. For each contract document, ICMS tracks the financial accounting information (e.g., by GPRA Goal, Objective, and EPA organizational unit), the object classification (e.g., 25.32 Programmatic R&D Contracts), as well as a description of the work being done (e.g., the statement of work).

Contract Payment System (CPS) - CPS tracks both the obligation and disbursement activity for each contract document using the financial accounting information. This system interfaces with the Agency's IFMS on a nightly basis, downloading the obligation and disbursement information.

Grants Information and Control System (GICS) - GICS tracks grant/cooperative agreement activity by grantee/cooperator from the submission of an application to the close-out process using an identification number. It also tracks the financial accounting information, object classification and project description. There is an interface from GICS to IFMS where the obligations and disbursements are downloaded into the Agency's IFMS and updated. A hard copy of the awards is sent to Las Vegas Financial Management Center (LVFMC) to ensure that the IFMS data are correct. If an award is not downloaded, the LVFMC can record the new obligation directly into IFMS.

In addition to the Agency accounting systems listed above, the Office of Research and Development has a number of other systems which we use as management tools but do not serve as official Agency accounting and auditing systems.

Question 3(a). I am informed...that outside research grants to the American Water Works Association Research Foundation (AWWARF) for fiscal year 1997 were not made until September 29, 1997, literally one day before the end of the fiscal year. I am also informed that similar funds in fiscal year 1998 were applied for by AWWARF on February 20, 1998, but not disbursed until September 17, 1998. Finally, I am informed that although AWWARF applied for fiscal year 1999 funds on December 30, 1998, such funds have not yet been disbursed, and

AWWARF has been informed not to expect such funds until September of this year.

Question 3(a)(i) Please indicate for each fiscal year cited above how much of the time which elapsed between the availability of funds to EPA and their actual disbursement by EPA was (or is) due to administrative requirements. Please indicate precisely what "administrative requirements" were applicable with respect to each disbursement.

Answer: A large part of EPA's mission is accomplished by awarding extramural funds to other organizations to conduct environmental projects. The award of Congressional earmark funds to AWWARF is managed through EPA's assistance agreement process. In general, this process requires a number of pre-award administrative tasks, reviews and signatures within ORD and the Grants Administration Division (GAD) of EPA.

FY 1997 Funds: Arsenic Research Partnership. In June, 1996, an Arsenic Research Partnership was created by the EPA, AWWARF and the Association of California Water Agencies (ACWA) for the purpose of establishing a jointly funded research program on the health effects of arsenic in drinking water. The activities of the Arsenic Research Partnership included: 1) development of joint solicitations for research proposals on health effects of arsenic in drinking water; 2) establishment of proposal review criteria and award decision protocols; 3) establishment of an independent peer review process for reviewing and making recommendations on research proposals; 4) establishment of a technical committee to review and make recommendations from among the selected peer reviewed proposals based on relevancy; and 5) selection of proposals by each party in accordance with its own requirements, with separate funding of such selected proposals.

In FY 1997, AWWARF used contributions from its subscribers, not Congressionally earmarked funds, to support research on arsenic. AWWARF and ACWA contributed a combined total of $1 million. The EPA used appropriations designated for arsenic research in FY 1996 ($1 million) and FY 1997 ($1 million).

Following negotiations between the public and private interested parties, public comment was solicited in a *Federal Register* notice (December 6, 1996) on four research topics in the draft Request for Applications (RFA). Comments were received by January 6, 1997. On March 27, 1997, EPA published a joint announcement requesting research applications with a closing deadline of May 16, 1997. EPA received 23 applications in response to this announcement. Following peer review of these applications, five awards were made, three of which were managed as grants by EPA and two were managed as contracts by AWWARF/ACWA. Two of the EPA awards were made in September, 1997, and one was made in November, 1997. The activities that occurred between the time of the receipt of applications and the award of the grants included: 1) peer review of all the applications; 2) in-house review of the applications for relevancy to the EPA program and guidelines of the appropriations; 3) selection of the five awardees; 4) negotiations with the awardees for final grant statements; 5) receipt and processing of funding information by the Grants Administration Division; 6) notifying relevant members of Congress of intent to award grants; and 7) final mailing of the award package

to the institution of the awardee.

FY 1998 and 1999 Funds: AWWARF Congressional Earmarks for Research on Arsenic. Attachment 5 lists the sequence of specific activities and dates relating to the award of Congressionally earmarked funds for AWWARF in FY 1997, FY 1998 and FY 1999. An additional factor that impacted the time, amount of review and approval required to award the funds in FY 1998 and FY 1999 was the decision by AWWARF to submit their requests for Arsenic Federal Assistance as part of their larger Drinking Water Assistance Application of $4M. The Agency did inform AWWARF in writing of the additional complications and reviews that would be needed by combining these separate Congressional earmarks. However, AWWARF felt that this was more convenient and less costly and time consuming for them in tracking and managing these funds. AWWARF requested in writing that the Agency process the earmarks as one application. It is important to note that the FY 1997 earmarked funds in this agreement did not pertain to arsenic

Question 3(a)(ii). Please indicate with respect to each fiscal year cited above how much of the time between the availability of funds to EPA and their actual disbursement by EPA was (or is) due to the necessity to ensure the scientific quality of the research. Please indicate precisely what scientific reviews or other actions were undertaken by EPA during each of the fiscal years cited above to ensure the scientific quality of this research.

Answer. As indicated above, peer review is an integral part of the pre-award process. ORD requires that each new assistance application undergo scientific peer review. These reviews consist of one internal and two extramural reviews, and are in addition to ORD's QA/QC review. It is the responsibility of the EPA/ORD Project Officer to solicit appropriate reviewers, distribute the information and reconcile any divergent opinions. Both the internal and external peer reviewers are provided the EPA peer review guidelines and the complete funding application for review. They are required to sign a confidentiality and conflict of interest statement. Reviewers are selected based on their expertise in the areas of arsenic health effects, exposure and treatment technology, as well as their understanding of water industry and State public health concerns. Reviewers are not compensated for their efforts. Because of their expertise and knowledge, reviewers are in very high demand; therefore every effort is made to accommodate their schedules to achieve high quality reviews. In general, reviewers are given three to four weeks to complete the review and return all material to the Agency. If, as in FY 1998, a reviewer realizes that they cannot meet the deadline, the Project Officer is required to obtain an additional reviewer. ORD requires the peer reviewers' comments and their disposition to be included in the final funding package for approval by senior management.

In FY 1997, the scientific and relevancy reviews of the Arsenic Research Partnership applications occurred after the May 16, 1997 closing deadline for receipt of applications and required several weeks to complete. As described above in response to question 3(a)(i), several other administrative steps were required before the EPA grants were awarded in September and November, 1997. The timeline for the solicitation of review

comments and completion of the review process for the AWWARF Assistance Agreements in FY 1998 and 1999 is provided in Attachment 5.

In addition to the pre-award review process, ORD has established with AWWARF an extensive post-award process that identifies and reviews the arsenic research projects. A group of Technical Representatives to the Arsenic Research Partnership is comprised of representatives from EPA, academia, and the water industry who are experts in the occurrence, cost of compliance, treatment and health effects of arsenic in drinking water. The Technical Representatives recommend projects to the Arsenic Research Partnership which are then managed by AWWARF. A Project Advisory Committee (PAC) is formed by AWWARF to provide technical oversight for each project. Representatives from EPA and ACWA are appointed to each PAC. The PAC provides scientific review and oversight to ensure the scientific integrity of the project.

Question 4. Question number 5 of my March 24th letter requested information on specific projects within the President's fiscal year 2000 budget request that will provide EPA with "equivalent or better" information than the funding for arsenic research which was eliminated by this request. Assistant Administrator Noonan's response only mentioned general research areas covered by the request, and did not compare the research being contemplated within the President's budget request with the research sought to be conducted under the $1.6 million in funding which was eliminated from the President's request. Please provide an answer to the original question I posed on March 24th.

[Question #5 from March 24th letter: It is my understanding that the $1 million in arsenic research that EPA proposed to eliminate in fiscal year 2000 included efforts to refine analytical methods for determining arsenic species in food, to examine the impact of arsenic on gene expression and its relationship to cancer, and to help determine a dose-response relationship for arsenic ingested by humans at low levels in drinking water. Please explain why the Administration did not request funding for this research. Please indicate any other arsenic research projects in fiscal year 2000 which will provide EPA with equivalent or better information than the eliminated funding.]

Answer. The research described above is funded through an FY 1999 Congressional earmark for the AWWARF. EPA has a longstanding policy not to request Congressional earmarks as part of the President's Budget, regardless of purpose. This is not to suggest that research funded by this earmark is unimportant or irrelevant.

EPA's FY 2000 request does include support for the high priority research areas outlined above. This includes research to develop extraction methods for inorganic and organic arsenicals to allow for the separation and detection of individual arsenic species in foods (Exposure Issue 2 in the *Research Plan for Arsenic in Drinking Water*), as well as research on the mechanism(s) by which arsenic causes cancer and on the dose-response for arsenic at low doses (Effects Issue 2 in the Arsenic Research Plan).

Question 5(a). Please indicate all arsenic research which EPA has utilized in support of the

requirements of the 1996 Safe Drinking Water Act Amendments in fiscal years 1997 through 1999, and all arsenic research which is planned in the remainder of fiscal year 1999 and fiscal year 2000, that was conducted or is planned to be conducted or financed by:

(I) other entities outside of EPA within the Federal government
(ii) any state or local governmental entities
(iii) any other non-EPA and non-governmental source

Answer. To establish a final rule for arsenic by January, 2001, the EPA will rely upon existing scientific information and near-term research that will, by necessity, need to be completed and peer reviewed prior to this date.

Research on the priority issues outlined in the EPA's *Research Plan for Arsenic in Drinking Water* is being conducted or financed by numerous governmental and non-governmental entities worldwide. The most comprehensive recent listing of risk assessment-related research conducted or financed by governmental and non-governmental sources, which includes research conducted from FY 1997 to the beginning of FY 1999, is found in the March 1999 National Research Council (NRC) report on *Arsenic in Drinking Water* (Attachment 6). The NRC report represents the principal source of external peer-reviewed health effects studies that will be considered by EPA in support of the final rule for arsenic in 2001. This includes research in such areas as the chemistry and analysis of arsenic in water and biological materials, health effects and dose-response, biomarkers and mechanisms of action, all of which are identified as priorities in the *Research Plan.*

Research conducted or financed since FY 1997 by several governmental entities is addressing important health- and exposure-related needs described in the *Research Plan.* The Food and Drug Administration and the National Institute of Standards and Technologies are supporting research relating to Exposure Issues #2 and 4, respectively. As shown in the Attachment 7, the National Institutes of Health is funding an extensive amount of investigator-initiated health effects studies on arsenic, many of which are expected to help address some of the long-term priority Health Effects Issues in the *Research Plan.* A number of arsenic research projects that address Health Effects and Exposure Issues in the *Research Plan* have been supported since FY 1997 through the EPA-AWWARF-ACWA Research Partnership, as shown in Attachment 8. Several of these studies have been or will be completed in time to be considered in the development of the new arsenic rule, while others will address longer-term research needs.

As a practical matter, research initiated in late FY 1999 and in FY 2000 -- either by EPA or by outside sources -- will not be available in time to inform the final rulemaking for 2001. This is because such research areas with complex scientific issues such as quantifying the risk associated with exposure to low levels of arsenic is long-term in nature. Many of the projects conducted or financed by EPA and outside organizations from FY 1997 - 2000 are long-term research activities that will support the required review and revision, as appropriate, of the arsenic standard subsequent to the establishment of a new rule in 2001. It is not possible at this time to identify with certainty the specific projects that other government agencies, state and local governments, and non-governmental sources will conduct in FY 2000. Details on EPA's FY 2000 projects will be available in the Fall (see answer to question 2c).

Question 5(b). With regard to the Administration's requested expenditure of $2.8 million for arsenic research in fiscal year 2000, what portion of this amount does EPA plan to spend on research projects or activities conducted within the Agency? What portion of this amount does EPA plan to spend on extramural arsenic research projects or activities?

Answer. The table below shows the portion of the FY 2000 budget for arsenic research that will be spent on internal and external research projects:

	Funding Level	**FTE**
In-House Extramural	$0.5M	15.1
External Extramural	$0.4M	0.0
Payroll/Travel, Working Capital Fund, Operating Expenses	$1.9M	0.0
TOTAL	$2.8M	15.1

Question 5(c). With reference to the amounts indicted under (b) above, please describe in detail what research will be conducted.

Answer. As mentioned earlier, detailed project level information for FY 2000 will be developed as part of the operating plan process, and can be provided to the Committee later in the Fall. Research in FY 2000 will primarily build upon the progress that is being made in addressing the long-term priority projects in the *Research Plan for Arsenic in Drinking Water*. As the results from scoping studies to identify possible locations in the U.S. for arsenic health effects field studies become available, opportunities for epidemiological investigations will be considered. EPA scientists will continue to collaborate with investigators conducting studies outside of the U.S. (e.g., Chile, China). Laboratory research will focus on issues relating to the metabolism and mechanisms of action of arsenic, providing data that will ultimately be useful in the future review of the arsenic standard. Support for the International Tissue and Tumor Repository for Chronic Arsenosis will be provided, and efforts to further develop a methodology for speciating arsenic in target foods will continue. In-house risk management research will focus on the further development of effective methods to manage arsenic residuals.

Question 5(d). Please explain in detail how the Administration's fiscal year 2000 budget request conforms to the February 1998 Research Plan for Arsenic in Drinking Water. Please itemize any studies or research projects outlined in the research plan as a high priority that will not be completed prior to the date by which EPA must propose new standards for arsenic.

Answer. The Administration's FY 2000 budget request is intended to continue the progress that is being made in the various priority areas described in the *Research Plan for Arsenic in Drinking Water*, with a particular focus on the long-term research needs in the areas of health effects, exposure, assessment and treatment. As shown in Attachment 4, all of the EPA activities that were identified as near-term, high priority research (shown in bold) are either completed or are on schedule to be completed in time for the January 2001 rulemaking.

COMMENTS BY THE

AMERICAN WATER WORKS ASSOCIATION

ON THE PROPOSED

NATIONAL PRIMARY DRINKING WATER REGULATION

FOR ARSENIC (65 FR 38888)

I. EXECUTIVE SUMMARY

AWWA supports a reduction in the current arsenic standard, as recommended by the National Research Council (NRC), even though compliance will be costly for the public. In fact, AWWA wrote a letter to EPA last year recommending a proposal of no less than 10 parts per billion (ppb) based on the uncertainties and cost-benefit analysis available at that time. AWWA has publicly stated this position for nearly 12 months, giving the Agency the benefit of the doubt that the critical questions regarding the uncertainties in health effects (many of which are pointed out by the NRC) could be answered prior to the publication of the proposed arsenic rule. Unfortunately, AWWA believes the Agency has been unsuccessful in satisfactorily answering these crucial questions. As documented in the detailed comments that follow this summary, AWWA believes that a critical evaluation of the health effects data and the costs and benefits in EPA's proposed arsenic regulation does not justify an MCL lower than 20 ppb. At a level of 10 ppb or lower, the health risk reduction benefits become vanishingly small as compared to the costs.

EPA has not credibly demonstrated a risk to the U.S. population to justify lowering the standard to the proposed level. The proposed arsenic rule is incomplete, inconsistent, and inaccurate. The health benefits anticipated by this proposal are minute and open to scientific debate. EPA has significantly under estimated the impact of the proposed rule because it has failed to develop a logical methodology for estimating the costs and subsequently the benefits of the proposed rule that captures:

- the complexity of the treatment technologies;
- the disposal of arsenic wastes generated from the treatment processes; and
- the disproportionate impact the proposed rule has on small groundwater systems or systems with multiple wells.

On the health side, the Taiwanese population (the foundation of the EPA risk assessment) is fundamentally different than the U.S. population due to dietary habits and nutritional deficiencies. This is a critical issue because any risk assessment based on Taiwanese data could be systematically biased towards a significant over-estimation of cancer risk when transferred to the U.S. population. The Chilean and Argentinean populations also have fundamental differences from the U.S. population. The Millard County, Utah population is much more representative of the entire U.S. population than the studies from Taiwan, Chile, and Argentina. The Millard County study – which found no increased incidence of bladder and lung cancers associated with arsenic exposure – should not be summarily dismissed or used inconsistently by EPA as is the case in this proposal.

EPA has ignored specific recommendations for the arsenic risk assessment from NRC report. EPA has continued to use semantic somersaults in its dismissal of a nonlinear dose-response for arsenic. The NRC report, *Arsenic in Drinking Water*, concluded that "Of the several modes of action that are considered most plausible, a sublinear dose-response curve in the low-dose range is predicted, although linearity cannot be ruled out" (NRC 1999, p.7). The linear extrapolation used by EPA likely overstates the risk at low doses. The degree of potential over-estimation increases as the

proposed MCL is reduced to lower and lower levels.

EPA has not met the risk assessment, management, and communication requirements in Section 1412(b)(3) of the 1996 Safe Drinking Water Act (SDWA) Amendments. EPA's explanation of the potential health effects posed by arsenic in drinking water and the potential benefits from the proposed regulation is unclear and disorganized, which makes informed public comment difficult, if not, impossible.

EPA compounds the risk assessment errors with the analysis of benefits in the proposal. In the benefits analysis, EPA has assumed that the risk management proposal, i.e., the proposed lower arsenic standard, will save lives immediately. In reality, the proposed lower standard would provide increases in life expectancies, beginning many years in the future, due to cancer latency. This future benefit needs to be discounted back to present value as recommended by the Environmental Economics Advisory Committee (EEAC) of the Science Advisory Board (SAB).

The cost methodology presented in the proposal is incomplete and inconsistent throughout the proposal. The presentation of costs is arguably the worst that AWWA has seen in any drinking water regulation. It is unclear how EPA developed the national compliance costs. EPA has not provided any estimates of total capital costs, which is unusual for a major drinking water regulation. Computing the total capital costs could have helped identify errors that are apparent in the O&M costs. In calculating the O&M costs, the amortized cost of the capital investment appears to exceed EPA's estimate for the total national cost (capital and O&M). In addition, EPA unrealistically assumes that many treatment plants will be able to dispose of their residuals waste streams to a sanitary sewer. The reality is that many wastewater plants will not accept these waste streams for a multitude of reasons, but primarily due to increased Total Dissolved Solids (TDS). This assumption leads to substantially lower national compliance cost estimates than is likely to be the case.

The cost-benefit analysis is equally as troubling. Even though EPA's own cost-benefit analysis concludes that the costs are greater than the benefits, the net negative benefit increases significantly when the appropriate costs, latency, and discounting adjustments are incorporated into the analysis. The net negative benefits become astronomical at the proposed arsenic standard of 5 ppb. Clearly, EPA doesn't understand the magnitude of their errors in the cost-benefit analysis, nor does EPA understand the magnitude of this proposal's impact on small communities. The proposed arsenic standard of 5 ppb literally has the potential to drive many small communities away from providing public drinking water as a public service.

The inadequate cost-benefit analysis presented by EPA is particularly troubling in light of the cost-benefit flexibility that was specifically inserted in Section 1412(b)(6) of the 1996 Safe Drinking Water Act (SDWA) Amendments for situations just like this. The proposed arsenic regulation is the most compelling case to date for using this flexibility, however, there is no practical way to make public policy decisions without an appropriate

cost-benefit analysis. AWWA has taken the limited information provided by EPA and developed three independent cost-benefit analyses using different methodologies. Each analysis independently concludes that the appropriate MCL option is 20 ppb.

EPA has failed to evaluate the most recent scientific information on health impacts and cost. EPA continues to ignore the MMA[31] impacts on epidemiological studies. By excluding the work of Petrick and Stilbo, EPA is ignoring these potential impacts on the risk assessment and therefore not using the best-available, peer reviewed science in the examination of this regulation. Additionally, in May 2000 the American Water Works Research Foundation completed the study Cost Implications of a New Arsenic MCL (Frey *et.al.*, 2000). This study carefully examines the national cost implications of revising the current MCL for arsenic in drinking water. Prior to the promulgation of the final regulation, EPA must evaluate this new data available on health and cost impacts and release that evaluation to the public for comment in the form of a Notice of Data Availability (NODA).

Potentially, no single drinking water regulation could impact the public's resources as much as the arsenic regulation. We all have an obligation to protect the public interest. This means protecting the public's health and wisely using the public's assets. It is apparent, in view of the fact that EPA has proposed four MCL options (3, 5, 10, 20 parts per billion of Arsenic), that the Agency is at a loss as to what the proper MCL for arsenic should be. EPA needs to take a step back, properly conduct the analyses necessary, and inform the appropriate stakeholders of the results of the analyses prior to making such an important public health decision.

Given the serious shortcomings in EPA's analysis and the lack of transparency and consistency put forth by the Agency in this proposed rulemaking, AWWA recommends that EPA select one of the following three options as their next step

- Conduct a proper - transparent - stakeholder process leading to a re-proposal;
- Conduct a negotiated rulemaking process leading to a re-proposal; or
- Completely reconstruct the cost-benefit analysis and release this new information in a Notice of Data Availability (NODA).

AWWA believes EPA should take the full twelve months between the proposal and promulgation of the arsenic regulation as provided by Congress through the 1996 Amendments to the Safe Drinking Water Act. EPA needs this time to critically evaluate the information received during this public comment period and make careful consideration to changes in the final regulation prior to its promulgation. AWWA believes that allowing a statutory deadline to drive imprudent public policy decisions would be reprehensible. If this occurs, the public will suffer from an untenable and unsupportable regulation of arsenic. Based on the information presented in these comments, the ethical action on the part of the Agency would be to retract their existing proposal and start afresh in a **transparent** stakeholder-based process to develop the drinking water standard for arsenic. Should the Agency decide to proceed on its current course of action, AWWA believes that the critical evaluation of the data presented by

EPA in this proposed arsenic regulation does not justify a MCL lower than 20 ppb.

II. INTRODUCTION

The American Water Works Association (AWWA) is an international non-profit, scientific and educational society dedicated to the improvement of drinking water quality and supply. Founded in 1881, the Association is the largest organization of water supply professionals in the world. AWWA's over 56,000 members represent the full spectrum of the "drinking water community": treatment plant operators and managers, public health officials, scientists, academicians, and others who hold a genuine interest in water supply and public health. Our membership includes over 4,000 utilities that supply roughly 75 percent of the nation's drinking water.

The comments provided herein reflect the consensus of the AWWA that, given the depth and breadth of its representation, also reflect the predominant view of the nation's drinking water professionals. It is therefore appropriate that these AWWA comments be heard on behalf of the drinking water community in general.

These comments have been prepared with an intended spirit of cooperation. Only through an open sharing of expertise and information will the public's interest in clean, healthful, abundant, and affordable drinking water be best realized.

AWWA feels that EPA has missed its mark in its efforts to solicit and respond to stakeholder involvement in the development of the proposed arsenic rule. While AWWA appreciates the opportunity to provide public input on specific issues under the arsenic proposal, AWWA feels that EPA could have done a more thorough job in responding to stakeholder inquiries and making information available in a more transparent form. Only through such an iterative, public process will a scientifically based and technically feasible regulation be developed.

AWWA's comments are organized by three major areas of discussion. First, we examine some of the public policy decisions that went into developing this regulation. These issues address EPA's development of this proposal in accordance with the Safe Drinking Water Act and the Administrative Procedures Act. These critical issues deserve special consideration from EPA in the development of the final arsenic rule and other final drinking water regulations. Next we discuss a series of general issues, followed by comments based on specific sections of the arsenic rule proposal. The specific comments are intended to provide insight on the technical difficulties inherent to this proposed rule.

III. PUBLIC POLICY DECISIONS

EPA has clearly not done an adequate job in the development of this proposal. The *Federal Register* notice does not do justice to the magnitude of the potential impacts from the proposed regulation. EPA has not credibly demonstrated a risk to the U.S. population at even the current U.S. standard of 50 parts per billion (ppb), let alone the lower

COMMENTS BY THE

AMERICAN WATER WORKS ASSOCIATION

ON THE NOTICE OF DATA AVAILABILITY FOR THE

NATIONAL PRIMARY DRINKING WATER REGULATION

FOR ARSENIC (65 FR 63027)

I. Introduction

The American Water Works Association (AWWA) is an international non-profit, scientific and educational society dedicated to the improvement of drinking water quality and supply. Founded in 1881, the Association is the largest organization of water supply professionals in the world. AWWA's over 56,000 members represent the full spectrum of the "drinking water community": treatment plant operators and managers, public health officials, scientists, academicians, and others who hold a genuine interest in water supply and public health. Our membership includes over 4,000 utilities that supply roughly 75 percent of the nation's drinking water.

The comments provided herein reflect the consensus of the AWWA that, given the depth and breadth of its representation, also reflect the predominant view of the nation's drinking water professionals. It is therefore appropriate that these AWWA comments be heard on behalf of the drinking water community in general.

II. Executive Summary

AWWA supports a reduction in the current arsenic standard, as recommended by the National Research Council (NRC), even though compliance will be costly for the public. However, AWWA has many grave concerns regarding the manner in which the Agency has proposed the arsenic regulation and the subsequent Notice of Data Availability (NODA) as summarized below.

- Contrary to the assertion in the NODA, the EPA has failed to publicly provide the information it used to develop the unit cost curves associated with Table 6-2 of the RIA. In addition EPA has also failed to publicly provide the actual unit curves themselves. **The unit cost curves in the April 1999 version of the T&C document referred to in the NODA do not match the equations embedded in the spreadsheet used to develop technology cost estimates by system size in Table 6-2 in the RIA.** As importantly, the residual handling and disposal costs provided in Table 6-2 in the RIA **do not** agree with the unit cost curves provided in the documents referred to in the NODA ("Water System ByProducts Treatment and Disposal Cost Document" and "Small Water System ByProducts Treatment and Disposal Cost Document").

- The Agency has truly blown an opportunity with this latest NODA to analyze and synthesize the latest health effects and treatment information. The Agency has been arbitrary in only including information in the NODA that appears to support some pre-ordained conclusion.

- The NODA indicates that EPA did not adhere to the spirit or intent of the SAB review comments. To the Agency's credit, it has now taken (a select portion) of the recent Morales, et al., findings into account. However, EPA has missed the more

fundamental point raised by SAB and other reviewers — the Agency has again gravitated to using a single set of empirical results, and has cast aside all other evidence, knowledge, caveats, and insights.

The Agency must take alternative model estimates into account in considering what risk levels are associated with alternative MCLs. The Agency also needs to apply these alternative estimates — particularly for the nonlinear model, as it is the most biologically defensible approach for arsenic — when estimating risk reduction benefits. This is the approach demonstrated in the Crawford-Brown report (Appendix D), in which the results of the three models noted above are presented side-by-side, and then integrated together to provide a "best estimate."

The sensitivity analysis furnished in the NODA is a very important and valuable exercise. However, the sensitivity analysis provided by EPA is simply the first of several adjustments that should be made in order to translate the Agency's overstated risk estimates into more realistic and defensible risk estimates for the U.S. population. Prior to the promulgation of the final arsenic rule, EPA must provide a wide range of similar sensitivity analyses for the arsenic MCL

The NODA indicates that EPA once again intends to assume that the cancer risk reductions materialize immediately with the implementation of compliance technologies. This implicitly assigns a latency period of zero years to the change in cancer risks due to arsenic ingestion. The assumption of a zero latency period is completely at odds with scientific reality, and must be corrected.

In addition to the need to account for latencies, the Agency also needs to make numerous other adjustments in its "benefits transfer" (BT) of willingness-to-pay estimates for reduced risks. AWWA strongly encourages that the Agency do so in accordance with standard economic procedures and practices of BT.

The sloppy work underlying this NODA is disturbing, considering the magnitude of the national compliance costs for the arsenic regulation. The arsenic regulation will likely cost as much as all of the other drinking water regulations combined, including the M/DBP cluster. Such a critical regulation deserves EPA's best work, with clear documentation and easily understood assumptions. Instead, the public is lost in a maze of unit cost curves that flat out do not make sense and the critical accessory costs are omitted.

The degree of discrepancy between the unit cost models actually used in the RIA and those published through the available Technology and Cost Documents (April 1999 and November 1999) together with the exclusion of accessory costs explains the substantial disagreement in the range of expected national compliance costs for the proposed arsenic MCL. Without further explanation, the EPA's conclusions on compliance costs appear to be arbitrary, capricious and unsubstantiated.

- Based on the information provided in the NODA, and independent analyses, AWWA does not believe that the revised risk estimates in any way alter AWWA's fundamental conclusion from the proposed arsenic rule. That is to say that based on a critical evaluation of the health effects, risk, risk-reduction, and cost-benefit data presented by EPA in the proposed arsenic regulation and in the NODA, EPA has not justified an MCL lower than 20 ppb.

In short, the risk assessment, cost-benefit, and unit cost conclusions drawn by the Agency in the proposed regulation and the NODA are confusing, inconsistent, and not supported by evidence. We believe that setting a final standard on the basis of such conclusions would be arbitrary and capricious and an abuse of discretion. It would also be contrary to law: the agency has not complied with the requirement to "publish, seek comment on, and use...quantifiable and nonquantifiable costs for which there is a factual basis in the rulemaking record that such costs are likely to occur..." (SDWA, section 1412(b)(3)(C).

Given the serious shortcomings in EPA's analysis and the lack of transparency and consistency put forth by the Agency in the proposed rulemaking and this subsequent NODA, AWWA strongly urges EPA to completely reconstruct the risk assessment and cost-benefit analysis for this proposed rulemaking and release this new information in a NODA prior to final promulgation of this regulation. Furthermore, prior to such a NODA, AWWA recommends that the Agency submit any reanalysis of risk assessment and cost-benefit to the Science Advisory Board's Drinking Water Committee and Environmental Economics Committee for review.

III. Failure to Provide a Facutal Basis in the Rulemaking Record

Contrary to the assertion in the Notice of Data Availability (NODA), the EPA has failed to publicly provide the information it used to develop the unit cost curves associated with Table 6-2 of the Regulatory Impact Analysis (RIA) as referenced on page 38935 of the *Federal Register* proposal. In addition, EPA has also failed to publicly provide the actual unit cost curves themselves. The public has a right to know what the costs of this proposal are, and the EPA is required to "publish, seek comment on, and use...quantifiable and nonquantifiable costs for which there is a factual basis in the rulemaking record to conclude that such costs are likely to occur solely as a result of compliance with the maximum contaminant level..." (SDWA, section 1412 (b)(3)(C)) (emphasis added). Because the proposal and the NODA both omit the actual unit cost curves EPA used in this proposal, we believe the Agency fails to satisfy this requirement.

On September 13, 2000, AWWA staff met with EPA staff concerning a serious flaw in the EPA proposal for a revised National Primary Drinking Water Regulation for arsenic. As was discussed at that meeting, AWWA learned from EPA on September 6 (via email) – two weeks before the close of the comment period on the proposal – that the unit cost

Mr. GILLMOR. The gentleman, Mr. Walden.

Mr. WALDEN. Thank you, Mr. Chairman, and I will keep my remarks fairly brief. And, Governor, welcome. One of the issues that I hear about out in my district, as much as some of these new standards that impact on very small rural communities, is the spin-off into TMDLs, because some of these areas tell me that they may in fact be required to treat water going out of their systems to a level that is cleaner than naturally occurring because of the minerals and things in the water.

And I hope that you will flag that. I am not trying to create another presser here for another week of nightly news reports on poisoning people. But it is an extraordinary problem out there that we are setting standards that may well exceed what naturally occurs in streams in the West.

And I hope my friends from the East understand that, but we each have our own set of problems and I think we all want clean water that is safe. So I would encourage you to take a look at that as well.

Ms. WHITMAN. And we are reviewing that.

Mr. WALDEN. Thank you.

Mr. GILLMOR. Mr. Terry, do you have a question?

Mr. TERRY. May I?

Mr. GILLMOR. You may.

Mr. TERRY. Good afternoon.

Ms. WHITMAN. Good afternoon.

Mr. TERRY. I have worked in some of our rural communities, even though I am from Omaha, Nebraska, representing predominantly urban. As I say, we have more cement than fields in my district.

But I have a memo from our Lieutenant Governor, and Health and Human Services Director, about the impact of the copper and arsenic rules, and I appreciate the movement, because as my friend from New Mexico said, just the natural state of our ground water that has been used for years will fall within and capture with the revised rules, placing a great burden on local communities in how they treat the water to meet the new standards.

And I have two questions for you in that regard. First of all, is the EPA open to alternatives instead of providing the revolving fund or dollars? For example, in some of our communities with copper, for example, the copper leeches into the water from the piping in the house when it sits overnight, because the natural ground water is a little bit more acidic than in some other areas of the country.

But yet they would rather—the EPA mandate basically is that they treat that. So they have to build facilities or alter their facilities at great cost to that community, as opposed to being open for less costly alternatives; filtration systems, pipe flushing, education.

Whereas, one community came and asked me last week that it would be cheaper for us to go into the number of houses and replace their copper piping than to do what the EPA is mandating by way of the treatment facilities.

So do you believe as the head of the EPA, and not necessarily that localities or States should have greater flexibility to adopt

remedies that best fit the locality and the situation without necessarily having to go to infrastructure changes?

Ms. WHITMAN. Well, Congressman, one of the things that I believe is important for us and incumbent upon us as an agency is to set the standards that we believe best protect the public health.

But I do not believe it is therefore incumbent on us to dictate the technology that reaches that standard, whether it be in drinking water or air. It really does not matter, and that we have that obligation to set the standards to protect people, but I don't believe that we are in the business of managing any of these companies, or any of these businesses that are impacted or communities.

And that we should allow them to reach those standards in a way that reflects their needs and is responsive to their needs.

Mr. TERRY. Well, what you say certainly is different than what the past Administrator was telling the State of Nebraska in how to do with that, and so I appreciate that level of flexibility.

Ms. WHITMAN. We will try to work with you to see if we can resolve these issues.

Mr. TERRY. That is much appreciated, because there is sometimes common sense in easy solutions that just seem to escape or be beyond the grasp of some Administrators out here. So I appreciate that.

Now, with that, if we continue though to force some of these communities with lowering the standards, and then having to expand their infrastructure to meet the new standards with the Drinking Water State Revolving Fund, according to this memo there could be as many as 120 communities in the State of Nebraska that would have to sp end infrastructure dollars.

I am not sure the revolving fund as it sits today has enough money that all of these communities could take part in the program, receive some dollars, and comply by 2001 or 2006.

Ms. WHITMAN. Well, it is important to understand that we also have—and while there are as you know special provisions within the SRF that allows for States to provide additional dollars to the small water companies in the small areas, and in fact they have done that to a great degree, we have a number of other tools available to help the small water systems, with technical assistance, and training, and capacity development, operational help that we can give them.

And it is the kind of thing that—operational certification. Last year's budget included approximately $14 million specifically targeted to helping the small companies. And that is something that I believe that we need to look at and review, and make sure that we have the necessary tools available to be able to support small water companies, and that they know what is available.

Because very often I found that sometimes we have—there either may be money in a particular form that is available to them, or this other assistance, and they don't even know it is available. So they are not taking advantage of it.

And we could be. We are already in a position to provide more aid overall than we are, and they are not getting it because they don't know about it.

Mr. TERRY. Well, I appreciate that you recognize that and have a commitment to that. Certainly in Omaha, when the standards

change, we can absorb that cost without much difficulty, but the smaller communities can't without that assistance, and I appreciate your recognition of that fact. Thank you, Mr. Chairman.

Mr. GILLMOR. Thank you. That concludes—oh, I beg your pardon. Mr. Barrett. Excuse me.

Mr. BARRETT. Thank you very much, Mr. Chairman.

Mr. GILLMOR. Most important for last.

Mr. BARRETT I appreciate that warm introduction. Last Friday, there was an article in the Night Ritter Services that said that on Tuesday, Environmental Protection Agency Administrator, Christine Todd Whitman, said Clinton's proposal to limit arsenic in drinking water to 10 parts per billion was too expensive and, "the scientific indicators are unclear.

Today it seems that you are talking more about the scientific indicators, as opposed to the expense. Can you comment on that?

Ms. WHITMAN. No, it is both. It is that we don't unfortunately—and I don't know that we ever will have that definitive study that says that it is 10. But that is becoming more and more a common accepted number.

But it is not hard and firm that says that over 10 that you are endangering people, and under 10, they are protected. We know that 50 is too high. That was set back 50 years ago or 60 years ago.

Mr. BARRETT. I understand that. But my question is it the science or is it the expense? This article said that you had two.

Ms. WHITMAN. It is a combination. We have an obligation as you know under the Safe Drinking Water Act to go through a process that identifies the science, and then we also have an obligation under the Act to look at the fiscal implications of that.

Mr. BARRETT. And what was the information that led you to the belief that the Clinton proposal was too expensive?

Ms. WHITMAN. I was listening—well, not listening. I had heard a lot of concern about the arsenic rule overall, and in talking to staff and asking about the amount of time they had, and the kind of impact that they had for public comment, I became very troubled that this number wasn't—and the implementation wasn't based on all of the available input that was necessary.

It might be as I have indicated before that we stay at 10, but I was not satisfied that we thoroughly understood all the implications of this decision.

Mr. BARRETT. And was there a legal challenge to this rule?

Ms. WHITMAN. I don't know that there has been one yet. There are legal challenges to everything that we do.

Mr. BARRETT. Okay. Was there a legal challenge?

Ms. WHITMAN. Yes, there was, I am told.

Mr. BARRETT. By the American Metropolitan Water Association?

Ms. WHITMAN. I don't know. No.

Mr. BARRETT. American Water Works Association?

Ms. WHITMAN. No.

Mr. BARRETT. National Association of Water Companies?

Ms. WHITMAN. No.

Mrs. WILSON. Would the gentleman yield?

Mr. BARRETT. Just a moment, please. The National——

Ms. WHITMAN. I think it is in New Mexico.

Mrs. WILSON. I was going to say it is New Mexico.

Mr. BARRETT. Okay. The National Rural Water Association? There is no legal challenge there.

Ms. WHITMAN. No.

Mr. BARRETT. You stated that you did not talk to any industry individuals. How extensive was the lobbying by the industry against this rule?

Ms. WHITMAN. I don't know. I did not receive any calls on it. I know that there are letters in the record on both sides. I mean, we have an enormous number of—I mean, we have letters from small town mayors who are Democrats who oppose it in enormous amounts.

But my concern as someone who comes from the East and who cares greatly about the environment, and whose State went to 10, I did not feel in asking questions of the staff that there had been enough time for them to do what ordinarily would have been done in getting all the input from the rest of the country to fully understand the implications.

Mr. BARRETT. I assume that you knew there was opposition from small town mayors.

Ms. WHITMAN. I knew that there was a lot of concern about this rule, yes. Of course.

Mr. BARRETT. And I assume that you knew that there was opposition from the industry?

Ms. WHITMAN. Not particularly. I mean, I knew that there was a lot of controversy around this rule. We pulled back as you know based on the Card memo all the last minute regulations promulgated by the previous administration, and this was one that was done after—you know, in January, in late January. So we looked at all of them.

Mr. BARRETT. You are painting a picture of sitting in a room and knowing of the concern of small town mayors, but not of the concern of the industry.

Ms. WHITMAN. No, it is a picture of sitting in a room knowing that this is a very controversial rule.

Mr. BARRETT. And who did you know that it was controversial with?

Ms. WHITMAN. It was in the papers all the time. There was a lot of talk about it.

Mr. BARRETT. Yes, I know, but who? Who as it controversial with? I mean, Ms. Wilson I think eloquently described her controversy, but I am having a little trouble here when I hear Mr. Waxman talk about these huge contributions; that somehow you did not know that the industry was opposed.

Ms. WHITMAN. I did not know that the timber industry was opposed because of cricetine in the wood, although growing up on a farm, I am very familiar with cricetine in the fence posts, and probably we ought to check our water, too, because we are on a well, and for a period of time we were sinking those posts in the land.

But it may be hard for anyone to understand us, but I got no pressure from the White House on this rule. None. I didn't talk to any member, no member of the President's staff. I mean, I can't make it any clearer than that. Nobody associated with the President called about this rule.

I did not take any calls from any industry members. We knew that it was controversial, and there are suits about this rule. I didn't say, okay, who is suing and how much did they give.

Mr. BARRETT. Well, I have to admit that I didn't know that there was a pro-arsenic lobby. I just didn't know that there was one that existed, but apparently there is from what we have heard today.

Ms. WHITMAN. This is the first that I have heard of it.

Mr. BARRETT. And I just have to say I find it troubling. It just strikes me that obviously industry from what we have learned today was very opposed to this, and I just find it hard to believe that that was not something that the EPA was concerning. So I would yield back my time.

Ms. WHITMAN. Well, again, there may be a lot of industry opposition. There is also a lot of opposition from real people out there as well.

Mr. GILLMOR. Thank you very much. The gentleman from New Jersey, Mr. Pallone.

Mr. PALLONE. Mr. Chairman, I just wanted to ask two things. First of all, there is a letter to Mrs. Whitman from myself and Mr. Dingell with additional questions, written questions, that we would like to have answered.

Ms. WHITMAN. Certainly.

Mr. PALLONE. And that I would like to have entered into the record and ask for unanimous consent.

Mr. GILLMOR. Without objection, the letter will be entered into the record.

Mr. PALLONE. And then, I know, Mr. Chairman, that a lot of documents have been entered into the record today, including one that was entered from—a statement by A.W.W.A., and I would just like to ask that the record remain open for additional comments, because in some cases documents from either side, we really have not had a change to look at, and it would be nice if we could leave the record open so we could do that.

Mr. GILLMOR. Without objection, we will hold the record open for that purpose for a week.

Mr. PALLONE. Thank you, Mr. Chairman.

Mr. GILLMOR. Well, I want to thank you, Administrator. You have been very generous with your time and your wisdom, and we appreciate you being here. Thank you very much.

Ms. WHITMAN. Thank you very much, Mr. Chairman.

Mr. GILLMOR. That will conclude our first panel. We have a vote, and we will come back immediately after the vote and we will begin with Panel Two. Panel Two will consist of Perry Beider, the Principal Analyst from the Congressional Budget Office; Mr. Tom Curtis, the Deputy Executive Director of the American Water Works Association; Ms. Diane Van de Hei, Executive Director of the Association of Metropolitan Water Agencies; Ms. Janice Beecher, Director of the National Association of Water Companies; Mr. Barker Hamill, the Bureau Chief of New Jersey's Drinking Water Protection Office; and Erik Olson, the Senior Attorney at the Natural Resources Defense Council.

We will recess now and begin with that panel as soon as we get back.

[Brief recess.]

Mr. GILLMOR. All right. We will begin with the second panel. You have 5 minutes to summarize your statements before members may begin asking questions, and so you may begin as soon as you are ready, and I think we will begin with Mr. Perry Beider of the Congressional Budget Office.

STATEMENT OF PERRY BEIDER, PRINCIPAL ANALYST, CONGRESSIONAL BUDGET OFFICE

Mr. BEIDER. Mr. Chairman and members of the subcommittee, thank you for inviting me to testify. The Congressional Budget Office, CBO, appreciates this opportunity to contribute to your review of the needs for investment in drinking water infrastructure.

My testimony today reflects some initial findings from an ongoing CBO study requested by this subcommittee and your colleagues on the Transportation and Infrastructure Committee.

With me today is Dr. Natalie Tawail, who is also working on the CBO study. I would like to make four points today about water infrastructure investment needs. Point One is that there is a lot of uncertainty surrounding the existing estimates of those needs.

As you know, the Water Infrastructure Network, or WIN, has estimated that annual needs for investment in drinking water will average $24 billion between 2000 and 2019, exceeding current spending from all ratepayers and public sources by $11 billion per year, as shown in the chart.

Summary of the Water Infrastructure Network's Estimate for the Annual Funding Gap for Drinking Water

(In billions of 1997 dollars)

Capital Investment	19
Financing	5
Total Capital	24
Less 1996 Capital Funding	-13
Estimated Funding Gap	11
Memorandum:	
Operation and Maintenance	27

Of course, any 20-year projection is uncertain, but the uncertainty here is compounded by a shortage of critical data on the water pipe networks. Without looking system by system at pipes age and condition, it is very difficult to say exactly when replacement will be required.

In the absence of a national inventory of drinking water pipes and other detailed local data, the WIN analysis uses some simple national assumptions. For example, it assumes that, on average, 1 percent of pipes will need to replaced each year through 2019.

Although that assumption is grounded in a common rule of thumb, CBO considers it quite possible that the assumption could be off by 30 or 40 percent. That factor alone could imply an error of 20 or 30 percent in the overall funding gap.

Point Two is that the WIN estimates are not independently confirmed by EPA's preliminary and unpublished gap analysis. The two estimates of drinking water needs are indeed independent, un-

like their wastewater counterparts, but they are also significantly different.

Of course, EPA's analysis could change as it undergoes agency review. Point Three is that some of the assumptions used in the analyses to date could tend to overstate costs.

First, the analyses assume efficiency savings in operations and maintenance, O&M, but not in capital investment. While the data to support capital efficiencies are sparse, a growing number of systems have achieved significant savings from various innovative methods.

Second, the WIN report appears to misstate the financing costs. Those costs seem to reflect all future debt-service payments associated with the average annual capital investment between 2000 and 2019, regardless of when those payments would be made.

CBO estimates that the average annual debt service actually paid during those 20 years could be roughly 25 percent less than the reported $5 billion per year. And, third, the analyses may also overstate O&M costs for wastewater, and perhaps for drinking water also.

They assume that in the absence of specific efficiency gains, the ratio of O&M to capital stock will rise steadily over time. My final point is that water investment needs are not only uncertain and perhaps overstated by current estimates, but also subject to influence by Federal policies.

In particular, a broad increase in Federal funding intended to help keep water rates affordable could keep total investment needs higher than they would be otherwise by reducing the pressure on systems to operate more efficiently, and on customers to economize on their water use.

Drinking water systems around the country have improved their operational efficiency in recent years, but industry experts see room for further savings in both operational and capital costs.

Promising methods include consolidation of systems to achieve economies of scale; strategic use of preventive maintenance to minimize long-run costs; demand management, including the use of pricing strategies to reduce peak use; and innovative contracting for new construction, such as design/build and design/build/operate construction.

But such potential future savings could go unrealized if Federal policies undermine the growing incentives for efficiency. We have seen this before. A 1985 CBO study found that high Federal cost shares in the original construction grant program for wastewater treatment raised capital costs by more than 30 percent.

In summary, CBO finds that the existing estimates of investment needs for drinking water are accompanied by significant uncertainty and may be too high. Moreover, how big the needs turn out to be will be influenced by who pays to meet them and how. I will be happy to try to answer any questions.

[The prepared statement of Perry Beider follows:]

PREPARED STATEMENT OF PERRY BEIDER, PRINCIPAL ANALYST, MICROECONOMIC AND FINANCIAL STUDIES DIVISION, CONGRESSIONAL BUDGET OFFICE

Mr. Chairman and Members of the Subcommittee, thank you for inviting me to testify. The Congressional Budget Office (CBO) appreciates this opportunity to contribute to your review of the needs for investment in drinking water infrastructure.

My testimony today reflects some initial findings from an ongoing CBO study requested by this Subcommittee and your colleagues on the Transportation and Infrastructure Committee.

Safe drinking water is essential to the economy and to human health. But how much and how to invest in order to maintain an adequate drinking water infrastructure are difficult issues. I hope to shed some light on those issues today.

In particular, I want to impart two main points:

- First, the existing estimates of how much investment will be needed over the next 20 years are very uncertain and may be too large. The lion's share of the investment will be used to rehabilitate or replace water pipes, but there is no national inventory of pipes' ages and conditions on which to base estimates of investment needs. In the absence of such an inventory, analysts have to rely on rough national assumptions, which add significantly to the uncertainty inherent in any 20-year projection. Moreover, notwithstanding claims that the existing estimates are, if anything, likely to underestimate the needs, CBO has identified some factors suggesting that those estimates may be too large. Thus, policymakers should not give undue credence to the estimates of future needs or the associated "funding gaps."
- Second, the very concept of an investment "need" is a fuzzy one. The amount of money that water systems must spend in order to provide the necessary services can vary dramatically depending on how efficiently the systems operate and invest. Therefore, from the standpoint of economic efficiency, it is important that any federal support for water infrastructure be provided in a way that gives system operators and water users the appropriate incentives to keep costs and usage down.

THE EXISTING ESTIMATES OF DRINKING WATER NEEDS

Projecting 20 years into the future is always difficult. Even the best 20-year estimate is only an extrapolation of what would happen under current and currently anticipated trends. In the case of projecting the needs for investment in water infrastructure, the difficulty is compounded by a shortage of data. The Environmental Protection Agency's (EPA's) quadrennial Drinking Water Infrastructure Needs Survey provides relevant data collected from systems around the country. However, EPA's reports based on the survey note that it underestimates infrastructure needs over its 20-year horizon because many systems are not able to identify and document all of their needs for the full period.[1] According to EPA staff, follow-up visits to some systems after the first drinking water survey yielded revised estimates that averaged 55 percent above those initially reported.

Prompted in part by the incompleteness of EPA's survey, a consortium called the Water Infrastructure Network (WIN) has developed more comprehensive estimates of 20-year infrastructure needs, supplementing the data from the survey with assumptions based on professional judgments. According to WIN's estimates, shown in Table 1, investment needs for drinking water will average about $24 billion per year through 2019 (expressed in 1997 dollars and including financing costs). WIN estimates that capital spending in 1996 from all sources—primarily local funds from ratepayers but also federal and state aid—was roughly half of the estimated future needs; thus, relative to the 1996 investment level, future needs for drinking water infrastructure represent an average annual funding gap of $11 billion.[2] (The table also shows WIN's estimates of average annual spending for operation and maintenance [O&M]. Because little outside funding is available for O&M, ratepayers cover almost all of those costs as well as a portion of capital costs; thus, the O&M estimates bear on the question of total costs facing future ratepayers.) EPA is also conducting a similar "gap analysis" but has not yet published its results.

[1] For example, see Environmental Protection Agency, *Drinking Water Infrastructure Needs Survey: First Report to Congress* (January 1997), p. 1. EPA recently released a report on a second survey of drinking water needs but has not yet incorporated the results of that survey into its analysis of the infrastructure funding gap.

[2] Water Infrastructure Network, "Clean & Safe Water for the 21st Century: A Renewed National Commitment to Water and Wastewater Infrastructure" (undated), available from the American Water Works Association (www.awwa.org/govtaff/win/finalreport.pdf), pp. 3-1 and 3-3.

TABLE 1

Summary of the Water Infrastructure Network's Estimate of the Annual Funding Gap

(In billions of 1997 dollars)

	Drinking Water
Capital Investment	19
Financing	5
Total Capital	24
Less 1996 Capital Fundinga	-13
Estimated Funding Gap	11
Memorandum:	
Operation and Maintenance	27

SOURCE: Congressional Budget Office based on Water Infrastructure Network, "Clean & Safe Water for the 21st Century: A Renewed National Commitment to Water and Wastewater Infrastructure" (undated), available from the American Water Works Association (www.awwa.org/govtaff/win/finalreport.pdf).

a. From all sources, including ratepayers and federal and state aid.

Uncertainty of the Estimates

The assumptions and judgments required in the absence of detailed data increase the uncertainty surrounding the estimates. The analysis underlying WIN's estimate illustrates that uncertainty. Part of that analysis comes from a 1998 report done for the American Water Works Association (AWWA), which focused only on investments in transmission and distribution systems and only on capital costs, not financing or O&M.[3]

The 1998 report estimated needs of $325.1 billion over 20 years (an average of $16.3 billion per year), including $101.4 billion for large systems, $198.0 billion for medium-sized systems, and $25.7 billion for small systems.[4] The analysis took the figure for small systems directly from EPA's 1995 needs survey and estimated the other figures using probability distributions to reflect uncertainty in four factors: the annual rate of pipes' replacement, the miles of pipe per water system, the distribution of pipes by size, and the cost per foot of replacing pipes of each size. To reflect the uncertainty about systems' replacement of pipes, for example, the analysis randomly selected replacement rates between 0.5 percent and 1.5 percent per year.

The resulting distributions of estimated needs were wide (see Table 2). For medium-sized systems, the analysis found that the "80 percent confidence interval" around the mean estimate of $198 billion spanned $116 billion to $272 billion—leaving a 10 percent chance that the need was less than $116 billion and another 10 percent chance that it exceeded $272 billion. For large systems, the 80 percent confidence interval spanned $19 billion to $193 billion—or from 82 percent below the mean to 91 percent above it.

Notwithstanding those results, CBO does not believe that the existing estimates of total needs for drinking water investment are likely to be off by as much as 80 percent or 90 percent.[5] However, the results do illustrate the point that the use of assumptions in the absence of hard data inevitably increases the imprecision of a future projection. CBO further notes that the range of uncertainty around the needs does not have to be plus or minus 80 percent to have a dramatic impact on the potential scope of the policy problem that the needs represent. Because the estimated funding gap for capital investment—that is, the amount above recent funding levels—is roughly half of the total projected investment needs (according to WIN's numbers), an error of, for example, 30 percent or 40 percent in the projected needs

[3] Stratus Consulting Inc., "Infrastructure Needs for the Public Water Supply Sector: Final Report" (unpublished paper prepared for the American Water Works Association, Boulder, Colo., December 22, 1998).

[4] Ibid., p. 3-11. CBO has been unable to learn exactly how WIN's consultants adapted the AWWA's estimate. Presumably, investments in treatment facilities and equipment account for at least some of the difference between the AWWA's annual average of $16.3 billion and WIN's figure of $19 billion (for capital costs).

[5] The analysts who developed the AWWA's estimate may have inadvertently overstated its uncertainty by using simple flat probability distributions for most of the uncertain factors. They probably would have been justified in giving greater weight to outcomes near the center of the range of possible values, which would have required using more complex peaked or bell-shaped distributions. Moreover, confidence intervals tend to get smaller in percentage terms as individual components of an estimate (for example, the needs of large systems and medium- sized systems) are added together, allowing random errors to offset one another.

translates to an error of 60 percent or 80 percent in the funding gap. According to rough calculations by CBO, an error of 30 percent or 40 percent just in the assumptions about the necessary rate of replacing pipes, which CBO believes is quite possible, could imply an error of 20 percent or 30 percent in the funding gap.[6]

TABLE 2.

The American Water Works Association's Estimate of 20-Year Investment Needs for Drinking Water Transmission and Distribution Systems

(In billions of 1998 dollars)

Size of System	Mean Estimate	80 Percent Confidence Interval
Small	25.7	N.A.
Medium	198.0	115.6 to 271.6
Large	101.4	18.6 to 193.2
Total	325.1	N.A.
Memorandum:		
Estimated Needs per Year	16.3	
WIN's Estimate of Total Capital Investment per Year (Including for treatment and storage)	19	

SOURCE: Congressional Budget Office based on Stratus Consulting Inc., ''Infrastructure Needs for the Public Water Supply Sector: Final Report'' (unpublished paper prepared for the American Water Works Association, Boulder, Colo., December 22, 1998),'' and Water Infrastructure Network, ''Clean & Safe Water for the 21st Century: A Renewed National Commitment to Water and Wastewater Infrastructure'' (undated), available from the American Water Works Association (www.awwa.org/govtaff/win/finalreport.pdf).

NOTE: N.A. = not available.

Similar estimates derived independently can raise one's confidence in those estimates. Contrary to the common perception, however, the current, preliminary version of EPA's "gap analysis" does not reach the same conclusion as the WIN report. Although both analyses present estimated gaps of $23 billion per year for drinking water and wastewater combined, that figure means different things in the two cases: in the WIN analysis, it is the 20-year average of a gap that grows year by year, whereas in EPA's preliminary analysis, it is the gap at the end of the 20-year period.[7] The differences are concentrated on the drinking water needs; for wastewater, the two estimates of needs are indeed very similar, if not identical—but that is because they were derived using the same methodology from the same consultants. In short, the two drinking water estimates are independent but not similar, and the two wastewater estimates are similar but not independent.

Possible Biases in the Estimates

Given that the estimates of needs are surrounded by significant uncertainty, the question arises as to whether that uncertainty is roughly balanced—that is, whether the estimates are about equally likely to prove too low as too high, or to lie primarily on one side or the other. WIN and EPA analysts argue that they have deliberately erred on the low side in their assumptions on capital and O&M spending and, therefore, that their estimates probably understate future needs. In particular, they point to their assumptions that 25 percent of the investment is financed without borrowing, that the rest is financed at a real interest rate of 3 percent, and that increased efficiency reduces O&M costs by 20 percent to 25 percent.

Those assumptions are reasonably conservative. But CBO has identified other factors that could tend to overstate the estimated costs for capital investment, financing, and O&M:

- First, in estimating needed capital investment, the existing analyses do not assume any savings from improved efficiency. Although the data to support such savings are sparser than they are for O&M, evidence from a growing number of case studies suggests savings from methods such as design/build contracting,

[6] The probability distribution of replacement rates for pipes assumed in the AWWA's analysis of drinking water infrastructure ranged from 0.5 percent to 1.5 percent per year, as noted in the text, and averaged 1.0 percent per year. That analysis also discussed an alternative approach, which assumed that pipe footage was laid in proportion to nationwide population growth. Under that alternative, the replacement rate between 2000 and 2019 would be about 0.6 percent per year, 40 percent less than under the selected approach.

Pipes represent roughly three-quarters of total capital assets of drinking water systems, and—at least in the wastewater analysis—replacement of existing assets represents about half of total investment needs. Therefore, an error of 40 percent in the assumed rate of pipes' replacement could imply an error of 15 percent in total investment needs and, hence, of 30 percent in the funding gap.

[7] Personal communication, Steve Allbee, Environmental Protection Agency.

preventive maintenance, and demand management (discussed below). Incorporating efficiencies in capital investment would also reduce the estimates for financing and O&M costs, because each dollar not invested cuts 75 cents from the debt to be financed and reduces the capital stock to be operated and maintained.[8]

- Second, the financing costs in the WIN report may be overstated. They appear to be the lifetime debt-service payments associated with the average annual capital investment over the period of 2000 to 2019. However, debt payments on investments made late in the period will primarily occur after 2019 and therefore have little influence on the average payment for debt service within the period. Conversely, the amount of debt paid in much of the first decade will primarily reflect the level of investment made before 2000, which is significantly lower than the level the report recommends from 2000 on. According to CBO's rough calculations, under WIN's assumptions the average annual debt service paid within the period would be roughly 25 percent below the reported $5 billion.
- Third, the assumed reductions in O&M costs resulting from increased efficiency are relative to a baseline that may be too high for wastewater and perhaps for drinking water as well. CBO does not have specific information on the methods used to calculate O&M costs for drinking water systems, but the wastewater analysis used in both the WIN report and EPA's preliminary study assumes that the baseline ratio of O&M to capital stock rises steadily throughout the 20-year period, extrapolating from a general trend in data from 1972 to 1996. Although additional capital stock is typically associated with additional costs for O&M, it is not obvious that the *ratio* of O&M to capital would continue rising indefinitely in the absence of efficiency gains. Increases in that ratio during the 1970s and 1980s may reflect unique causes, such as the initial introduction of many secondary treatment facilities and biosolids disposal programs. Going forward, some investments, such as those to replace deteriorated pipes or install automated sensing and measurement equipment, could reduce the O&M required per unit of capital stock.

In short, there is much about future investment needs in drinking water infrastructure that is unknown, and assumptions based on even the best professional judgments can be significant sources of error.

EFFICIENCY, EQUITY, AND THE DEFINITION OF "NEED"

Although considerable uncertainty surrounds the available estimates, CBO accepts the judgment of industry professionals that drinking water systems will require large investments over the next few decades. But future "needs" are not a predetermined reality; they are partly the result of many federal, state, local, and private choices yet to be made. The amount of investment needed to maintain services and meet water quality requirements under current industry practices and current government policy is likely to differ from the amount needed under evolving industry practices, under alternative government policies, or under a least-cost approach.

In particular, a broad increase in federal funding intended to help keep water rates affordable could reduce the pressure on systems to operate more efficiently and on customers to economize on their use of water services and thereby keep total investment needs higher than they would be otherwise. That is another example of the familiar trade-off between equity and efficiency.

In recent years, both drinking water and wastewater systems around the country have taken steps to become more efficient. The results are illustrated by data from a survey conducted periodically by the Association of Metropolitan Sewerage Agencies. For example, the average sum of O&M costs and administrative costs per million gallons declined from $1,108 in the 1996 survey to $987 in the 1999 survey.[9] One method used to reduce costs has been more efficient use of employees: among

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[8] Of course, some methods used to reduce investment needs require more O&M spending rather than less. As noted later in the text, the existing analyses do not reflect a detailed model of the relationship between capital spending and O&M spending.

[9] CBO's calculations, using data from Association of Metropolitan Sewerage Agencies, *The AMSA Financial Survey, 1999: A National Survey of Municipal Wastewater Management Financing and Trends* (Washington, D.C.: AMSA, 1999) and its 1996 counterpart. The averages cover 84 responding wastewater systems in the 1999 report and 97 systems in 1996. CBO recalculated the 1996 average shown in the reports to exclude five high-cost systems that did not respond to the later survey. Also, the 1999 average that CBO obtained using available data for 84 systems differs slightly from AMSA's average of $930 for 87 systems.

45 municipal wastewater agencies that responded in both 1996 and 1999, full-time-equivalent staffing per 10,000 people in the served area declined from 5.0 to 4.7.[10]

Experts in the water industry see room for further cost savings, not only in operational costs but also in capital costs. Promising methods include the following:

- Consolidation of systems to achieve economies of scale. Reportedly, 50 percent of small drinking water systems lie within a standard metropolitan statistical area.
- Asset management, which involves analyzing local data on assets' age, performance, and condition in order to identify a maintenance and replacement strategy that minimizes long-run costs.
- Demand management, including the use of pricing strategies to reduce peak use.[11]
- Innovative contracting for new construction, such as the use of contracts covering both design and construction, or even design, construction, and operation.[12]

But those potential future savings could go unrealized if federal policy inadvertently undermines the forces pushing for efficiency. The savings observed to date have occurred primarily because of pressures from two sources. One source has been competition from private firms seeking contracts to operate municipal systems. The actual or potential threat of such competition has led to significant increases in efficiency in systems that remain publicly operated as well as in those contracted out to private operators. The second source of pressure has been resistance from customers and oversight bodies to large rate increases. That pressure too has led system operators to reexamine their management practices and find many ways to reduce costs without sacrificing quality of service.

Whether federal aid would undermine or reverse the progress in water systems' efficiency would depend on how much aid the government provided and in what form. Clearly, if the federal government issued blank checks for infrastructure, local systems would lose any incentive to keep capital costs down. But the issue is also relevant in less extreme cases: a 1985 CBO analysis found that high federal cost shares in the original construction grant program for wastewater treatment raised capital costs by more than 30 percent.[13] Unfortunately, CBO cannot describe the precise relationship between federal support and total nationwide costs.

But if it is not clear "how much is too much" federal aid from the standpoint of efficiency, it is also not clear "how little is too little" for equity purposes—that is, to address the affordability and fairness issues. A large, broad program would probably benefit not only the neediest water users but also well-off users, with little additional gain in equity. CBO is analyzing the affordability issues associated with water infrastructure needs and expects to provide additional information on them in a report to be issued later this year.

In summary, CBO's analysis of the existing estimates of investment needs for drinking water infrastructure leads the agency to conclude that those estimates are accompanied by significant uncertainty and may be too high. Moreover, how big the needs turn out to be will be influenced by who pays to meet them; in particular, proposals intended to address the equity problem of keeping rates affordable may adversely affect efficiency by raising total national costs.

Mr. GILLMOR. Thank you very much. And we will now go to Mr. Howard Neukrug, from Philadelphia, representing the American Water Works Association.

STATEMENT OF HOWARD NEUKRUG, DIRECTOR, OFFICE OF WATERSHEDS, PHILADELPHIA WATER DEPARTMENT, ON BEHALF OF THE AMERICAN WATER WORKS ASSOCIATION

Mr. NEUKRUG. Well, thank you, and good afternoon, Mr. Chairman. My name is Howard Neukrug, and I am the Director of the

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[10] Ibid., p. 67. Both the opinions of industry experts and more detailed data on the nature of the reductions in staffing and operational costs indicate that those savings primarily reflect true gains in efficiency, rather than reductions in necessary maintenance or other vital services.

[11] See Allan Dietemann, "A Peek at the Peak: Reducing Seattle's Peak Water Demand" (Seattle Public Utilities, Resource Conservation Section, February 9, 1998).

[12] For a well-documented example involving wastewater, see David Higgens and Frank Mangravite, "Comparison of Design-Build-Operate and Conventional Procurements on Washington Borough, N.J., Wastewater Treatment Plant," International Supplement to RCC's Public Works Financing (July-August 1999), pp. 1-7.

[13] Congressional Budget Office, *Efficient Investments in Wastewater Treatment Plants* (June 1985), p. xi.

Office of Watersheds for the Philadelphia Water Department, which is a drinking water, waste water, and storm water utility, which services about 2 million people in the greater Philadelphia area.

I am speaking to you today on behalf of A.W.W.A, where I serve as the Chair Elect of the Water Utility Council. We thank you for holding this hearing, and for providing this opportunity to present our views on the Nation's critical drinking water infrastructure needs.

As you know, drinking water systems in the United States invest billions of dollars each year toward its mission of providing safe drinking water at rates affordable to the public. However, it is now clear that many customers will need to invest significantly more over the next 20 years to replace aging and failing water pipes.

These investments, along with those required for new federally mandated regulations, drive the need for enormous new capital dollars in water related infrastructure.

Compounding this problem is local competition for limited capital dollars from our storm water and waste water utility partners, as they move forward to repair and replace aging sewer pipe and meet requirements of major EPA programs, such as the national CSO and SSO control policies.

As reported in WIN, the combined water and waste water capital dollar needs over the next 20 years amounts to an unprecedented $1 trillion. I am here today to ask Congress to work with the drinking water industry as we move forward to invest in our future and the future of all Americans.

We do not come here asking for Federal subsidies, but looking for a partner in investment to secure America's future. The A.W.W.A. will continue to do everything possible to support our utility search for solutions, identify the infrastructure capital requirements, minimize the need for new capital, explore new opportunities for capital in innovative funding mechanisms, and education and outreach to the public, our regulators, Congress, and other utility partners to increase this awareness and our understanding of the issues.

Everyone knows that utilities are sensitive to rising rate pressures, be it water, gas, electric, or telephone. Underlying the sensitivity is the understanding that there exists a class of customers who must make a monthly choice of which bills to pay.

The choice between water, food, heat, and shelter are not often talked about in the development of new drinking water regulations, but is a subject that must be considered as we move forward in this and other deliberations concerning our Nation's drinking water supply.

In Philadelphia, where 40 percent of the population lives in poverty, the rise in water bills will remain a significant social issue into the foreseeable future. In order to understand how we got here, one must first understand the history of drinking water supply in the U.S.

Quite simply, beginning in the 1870's, thousands of miles of Victorian era pipe were laid to meet a new demand called indoor plumbing. Pipe manufacturing was cruder than the process used today, but the manufacturers compensated for this by producing pipe of substantial wall thickness and strength.

Today, a 120 years later, much of this pipe remains in service in our urban areas. The need to replace this pipe is dependent on more than just simply age, but soil conditions, and the quality of manufacturer, and the installation playing equally important roles.

The pattern of water main installation during the 20th century is a simple reflection of the overall pattern of population growth in large and small cities across the United States. There was an 1890's boom, a World War I boom, and roaring 20's boom, and a massive post-World War II baby boom.

For every boom in housing construction, there was a commensurate boom in the water and sewer pipe installation business. Pipe quality and useful life can vary as much as the quality of homes built in the 20th century. The A.W.W.A. is currently undertaking a study into the nature and scope of the emerging infrastructure challenge based on the history of pipe installation and prediction of remaining useful pipe life for 20 U.S. leading utilities.

Using useful remaining pipe life estimates for the various types of pipe installed, and counting the years since the original installations, the A.W.W.A. developed "Nessie Curves" which forecast that investment needs will rise steadily, extending throughout the 21st century.

Replacement of water treatment plant assets presents a different picture from that of the pipes, but greatly complicates infrastructure funding for utilities. Treatment assets are also much more shortlived than pipes, with pipe expectancies between 20 and 70 years.

Many are about due for replacement in the next decade in Philadelphia, and our annual capital expenditure for waste water and water treatment plants has recently been increased from $30 to $50 million. Thank you very much.

[The prepared statement of Howard Neukrug follows:]

PREPARED STATEMENT OF HOWARD NEUKRUG, DIRECTOR, OFFICE OF WATERSHEDS, PHILADELPHIA WATER DEPARTMENT, ON BEHALF OF THE AMERICAN WATER WORKS ASSOCIATION

INTRODUCTION

Good morning Mr. Chairman. I am Howard Neukrug, Director of the Office of Watersheds for the Philadelphia Water Department in Pennsylvania. The Philadelphia Water Department is a municipal water, wastewater and stormwater utility serving over two million people in the Philadelphia metropolitan area. I serve as the Vice Chair of the American Water Works Association (AWWA) Water Utility Council and am here today on behalf of AWWA. AWWA appreciates the opportunity to present its views on drinking water needs and infrastructure.

Founded in 1881, AWWA is the world's largest and oldest scientific and educational association representing drinking water supply professionals. The association's 57,000 members are comprised of administrators, utility operators, professional engineers, contractors, manufacturers, scientists, professors and health professionals. The association's membership includes over 4,2000 utilities that provide over 80 percent of the nation's drinking water. AWWA and its members are dedicated to providing safe, reliable drinking water to the American people.

AWWA utility members are regulated under the Safe Drinking Water Act (SDWA) and other statutes. AWWA believes few environmental activities are more important to the health of this country than assuring the protection of water supply sources, and the treatment, distribution and consumption of a safe, healthful and adequate supply of drinking water.

AWWA is also a member of the Water Infrastructure Network (WIN)—a broad-based coalition of drinking water, wastewater, municipal and state government, engineering and environmental groups, dedicated to preserving and protecting the hard-won public health, environmental and economic gains that America's water

and wastewater infrastructure provides. AWWA and its members thank you for holding this hearing concerning the infrastructure needs of the Nation's drinking water utilities. AWWA looks forward to working with the subcommittee in its efforts to address the growing infrastructure costs facing drinking water utilities and consumers.

The Drinking Water Infrastructure Need

Last fall WIN released *Clean & Safe Water for the 21st Century*, which summarized infrastructure needs and the funding shortfall facing drinking water and wastewater systems. That report estimates that the total drinking water and waste water infrastructure needs over a twenty-year period approaches one trillion dollars. According to report estimates, drinking water utilities across the nation collectively need to spend about $24 billion per year for the next 20 years, for a total of $480 billion. The report identified an $11 billion annual gap between current spending and overall need.

A separate needs estimate was released in February by the U.S. Environmental Protection Agency (EPA), based on a survey of water systems. The survey results suggest water systems will need $150 billion during the next twenty years. However, the EPA estimate is limited to identifying eligible Safe Drinking Water Act compliance needs for the Drinking Water State Revolving Fund (DWSRF) and does not include many needs, such as the replacement of treatment facilities and distribution systems due to age. These needs are not eligible for funding from the DWSRF yet they are the largest infrastructure expense facing the nation's water suppliers. EPA also relied on five-year capital improvement plans (CIPs) by utilities and included them in the 20-year period, leaving the remaining out-years compliance needs undocumented.

None-the-less, both estimates suggest an emerging large cost for drinking water infrastructure.

Why is the need emerging now?

Water is by far the most capital intensive of all utility services, mostly due to the cost of pipes—water infrastructure that is buried out of sight. Most of drinking water pipes were originally installed and paid-for by previous generations. They were laid down during the economic booms that characterized the last century's periods of growth and expansion. Pipes last a long time (some more than a century) before they cost very much in maintenance expense near the end of their useful life, or ultimately need replacement. For the most part, then, the huge capital expense of pipes is a cost that today's customers have never had to bear. However, replacement of pipes installed from the late 1800s to the 1950s is now hard upon us at the beginning of the 21st Century and replacement of pipes installed in the latter half of the 20th Century will dominate the remainder of the 21st Century. This is a significant change that ushers in a completely new era in water utility financing.

Recognizing that we are at the doorstep of a new era in the economics of water supply, the replacement era, the American Water Works Association (AWWA) has undertaken an analysis of 20 utilities throughout the nation to understand the nature and scope of the emerging infrastructure challenge. The project involved correlating the estimated life of pipes with actual operations experience in the sample of 20 utilities. Projecting future investment needs for pipe replacement in those utilities yields a forecast of the annual replacement needs for a particular utility, based on the age of the pipes and how long they are expected to last in that utility. By modeling the demographic pattern of installation and knowing the life expectancy of the pipes, we can estimate the timing and magnitude of that obligation. This analysis graphically portrays the nature of the challenge ahead of us. We will summarize the highlights of the analysis in this statement and AWWA will provide the subcommittee with a copy of the report when it is completed shortly.

Pipe Replacement Value

The original pattern of water main installation from 1870 to 2000 in 20 utilities throughout the nation analyzed by AWWA is a reflection of the overall pattern of population growth in large cities across the country. There was an 1890s boom, a World War I boom, a roaring '20s boom, and the massive post-World War II baby boom.

The oldest cast iron pipes—dating to the late1800s—have an average useful life of about 120 years. This means that as a group these pipes will last anywhere from 90 to 150 years before they need to be replaced, but on average they need to be replaced after they have been in the ground about 120 years. Because manufacturing techniques and materials changed, the roaring '20s vintage of cast iron pipes has an average life of about 100 years. And because techniques and materials continued to evolve, pipes laid down in the post World War II boom have an average life of

75 years, more or less. Using these average life estimates and counting the years since the original installations, it's clear that water utilities will face significant needs for pipe replacement in the next couple of decades.

The cumulative replacement cost value (the cost of replacement in constant year 2000 dollars) of water main assets has increased steadily over the last century in our sample of 20 utilities. In aggregate across our sample of utilities, the replacement value of water mains in today's dollars is about $2,400 per person. This is more than three times what it was in 1930 in constant year 2000 dollar terms. The difference is not due to inflation; rather, there is simply more than three times as much of this infrastructure today as there was in 1930, in order to support improved service standards and the changing nature of urban development. In older cities the per capita replacement cost value of mains today is as high as nine times the 1930 level (in constant year 2000 dollars) due to loss of center city population.

Reflecting the pattern of population growth in large cities over the last 120 years, the AWWA analysis forecasts investment needs that will rise steadily like a ramp, extending throughout the 21st Century. By 2030, the average utility in our sample of 20 will have to spend about three and half times as much on pipe replacement as it spends today.

Many water systems all across America have seen this day coming and have already begun to ramp-up their expenditures on pipe rehabilitation and replacement. But it is clear that for most utilities this problem is just emerging and is enormous in scope.

Pipe Repair Costs

As pipe assets age, they tend to break more frequently. But it is not cost-effective to replace most pipes before, or even after, the first break. Like the old family car, it is cost efficient for utilities to endure some number of breaks before funding complete replacement of their pipes.

Considering the huge wave of aging pipe infrastructure created in the last century, we can expect to see significant increases in break rates and therefore repair costs over the coming decades. This will occur even when utilities are making efficient levels of investment in replacement that may be several times today's levels. In the utilities studied by AWWA, there will be a three-fold increase in repair costs by the year 2030 despite a concurrent increase of three and one-half times in annual investments to replace pipes.

Water Treatment Plant Costs.

Replacement of water treatment assets presents a different picture from that of the pipes, but greatly complicates infrastructure funding for utilities. Major investments in water and wastewater treatment plants were made in several waves following the growing understanding of public health and sanitary engineering that evolved during the 20th Century. Of course, the installation pattern of treatment assets also reflects major population growth trends. But whereas pipes can be expanded incrementally to serve growth, treatment must be built in larger blocks. Investments in treatment thus present a more concentrated financing demand than investments in pipes.

Treatment assets are also much more short-lived than pipes. Concrete structures within a treatment plant may be the longest lasting elements in the plant, and may be good for 50 to 70 years. However, most of the treatment components themselves typically need to be replaced after 25 to 40 years or less. Replacement of treatment assets is therefore within the historical experience of today's utility managers. Even so, many treatment plants built or overhauled to meet EPA standards over the last 25 years are too young to have been through a replacement cycle. Many are about due for their first replacement in the next decade or so.

The concurrent need to finance replacement of pipes and of treatment plants greatly increases the challenge facing utilities. While spending for the replacement of pipes rises like a ramp over the first part of the 21st Century, spending for treatment plant replacement will occur at intervals causing "humps" in capital needs on top of the infrastructure replacement capital needs. This is graphically illustrated in the attached "Relative Asset Replacement Projections" graph of the BHC Company water utility in Bridgeport, Connecticut, from the forthcoming AWWA report. This pattern has been found to be common in many water utilities and has been nicknamed "The Nessie Curve" because of its resemblance to depictions of the Loch Ness Monster.

Demographic Changes.

Water utilities are the last natural monopolies. The large investment required in pipe networks makes it impossible to have more than a single provider of water service within a given area. These large investments are also a major source of fi-

nancial vulnerability for water utilities due to the very fixed nature of the assets and the very mobile nature of the customers. When populations grow, the infrastructure is expanded, but when people move away, the pipe assets and the liability for repair and replacement remain behind, creating a financial burden on the remaining customers. This problem, known as "stranded capacity" (essentially, capital facilities that are not matched by rate revenue from current customers), is typical of the demographics of older cities and adds considerably to the challenge of funding replacement in these cities.

In Philadelphia, over the one hundred years from 1850 to 1950, the population grew from 100,000 to 2 million people. But from 1950 to the end of the century, Philadelphia lost 25 percent of its population, dropping to 1,500,000. This situated was replicated again and again throughout the older cities of the Northeast and Midwest. The effect is to increase the burden of replacement funding on the remaining residents of the city.

As previously mentioned, the average per capita value of water main assets in place today across our sample of 20 utilities is estimated to be three times the amount that was present in 1930. In Philadelphia, however, that ratio is almost eight times the average per capita value of water main assets in 1930 due to population declines since about 1950.

Demographic change, then, places financial strain on all public water systems and has a direct impact on affordability of the investment required.

Affordability of Rates

A central question for policy makers and utilities, then, is whether the increased rate of infrastructure spending that utilities now face over the next 30 years can be financed by the utilities themselves at rates customers can afford.

WIN estimates that total water and wastewater infrastructure bills will have to double or triple in most communities to meet these needs, if consumers are forced to bear the entire infrastructure cost. The cost of compliance with storm water regulations alone may dwarf domestic drinking water and wastewater expenditures. Therefore, the impact on household affordability and rates of projected drinking water infrastructure expenditures must be viewed in the context of the total water and wastewater utility infrastructure bill to be paid by the consumer.

In the sample of 20 utilities studied by AWWA, the analysis showed an aggregate increase in needed utility expenditures above current spending levels of $3 billion by 2020 and $6 billion by 2030. This implies the need for collection of an additional $1,575 per household for infrastructure repair and replacement over 30 years. The estimated $1,575 per household is an average of the individual results. The individual utilities in the survey present wide-ranging needs for increased expenditure (from $550 per household over 30 years to $2,290 per household over 30 years) and "lumpy" patterns of increased expenditure needs that are unique to each set of circumstances.

The sample of 20 utilities represents relatively large utilities that are on the "cutting-edge" of utility management. The household expenditure increase will be much higher in small systems that do not have a large rate-base over which to spread the costs. Extrapolating from EPA's estimated 20-year capital need for small systems, the AWWA analysis projects the total 30-year expenditure for infrastructure repair and replacement in small systems might be in a range of $1,490 per household to $6,200 per household.

Moreover, there is no guarantee that the projected expenditures per household can be spread evenly or taken on gradually over the 30-year period. There are "humps" for treatment plant replacement throughout the period. Additionally, expenditure "humps" for compliance with a dozen or more new regulations is not included in this analysis.Conclusion

How we address our emerging drinking water infrastructure needs is a critical question facing the Nation and this Congress. To help reduce the burden on consumers, many water utilities have made great strides in efficiencies, with some utilities achieving a 20 percent savings in operations and maintenance. Water utilities will continue to reduce costs, seek cost-effective financing and employ innovative management strategies. Regardless, there will be significantly increased costs for needed infrastructure investment.

AWWA does not expect that federal funds will be available for 100 percent of the increase in infrastructure needs facing the nation's water utilities. However, AWWA does believe that due to concurrent needs for investment in water and wastewater infrastructure, replacement of treatment plants, new drinking water standards, and demographics, many utilities will be very hard pressed to meet their capital needs without some form of federal assistance. Over the next twenty years, it is clear that Safe Drinking Water Act (SDWA) and Clean Water Act (CWA) compliance require-

ments and infrastructure needs will compete for limited capital resources. Customers are likely to be very hard pressed in many areas of the country. Compliance and infrastructure needs under the SDWA and CWA can no longer be approached as separate issues. Solutions need to be developed in the context of the total drinking water and wastewater compliance and infrastructure needs.

AWWA pledges to work with Congress to develop a responsible and fair solution to the Nation's growing drinking water infrastructure challenge. As a start, AWWA will provide a copy of the forthcoming AWWA report to members of the subcommittee to assist the subcommittee deliberations on this issue. We thank you for your consideration of our views.

This concludes the AWWA statement on drinking water needs and infrastructure. I would be pleased to answer any questions or provide additional material for the committee.

Mr. GILLMOR. Thank you very much, and we will go to Ms. Beverly Ingram, from Detroit, the Association of Metropolitan Water Agencies.

STATEMENT OF BEVERLY INGRAM, ASSISTANT DIRECTOR, DETROIT WATER AND SEWER DEPARTMENT, ON BEHALF OF THE ASSOCIATION OF METROPOLITAN WATER AGENCIES

Ms. INGRAM. Thank you. Good afternoon, Chairman Gillmor and Congressman Pallone, and members of the subcommittee. My name is Beverly Ingram, and I am an Assistant Director with the Detroit Water and Sewerage Department. I am here today to discuss water infrastructure needs on behalf of the Association of Metropolitan Water Agencies.

I would like to thank you for holding this hearing to learn more about the infrastructure needs of local water utilities. I would like to begin my statement by giving you a snapshot of the Detroit system.

Detroit is recognizably one of the largest water and sewerage treatment facilities in North America. The Detroit system, built 160 years ago, serves drinking water to 4.2 million people in southeastern Michigan.

We pump approximately 239 billion gallons of water a day. We are also responsible for treating 634 million gallons a day of waste water. Our waste water system covers 857 square miles, and our water system over a thousand miles.

Last fall, the water infrastructure network released clean and safe water for the 21st century, which summarized infrastructure needs in the funding shortfall, replacing drinking water and waste water systems.

AWWA is a member of WIN. The report estimates that drinking water utilities across the Nation collectively need to spent about $24 billion per year for the next 20 years, for a total of $480 billion.

WIN's analysis also concluded that water systems currently spend $13 billion per year on drinking water infrastructure, leaving an $11 billion annual gap between current spending and overall need.

A separate needs estimate was released in February by EPA. The survey results suggest water systems will need $150 billion during the next 20 years. Mr. Chairman, since my written statement clearly spells out the reasons for the disparity in these numbers, I will not go into them here.

Like the Nation's other 55,000 water utilities, the Detroit Water and Sewer Department is responsible for providing safe, clean

drinking water to protect public health and complying with drinking water regulations.

In addition, our customers, both families and businesses, expect reliable service. To meet our responsibilities, major metropolitan areas are currently funding repairs on old pipes and outdated treatment facilities at an astounding rate.

To better understand the types of investments that public water systems are doing to meet these infrastructure needs, here are some local examples. In Kansas City, Missouri, they raised rates by 100 percent over the last 10 years; and the utility plans water rate increases of 4 percent each year, and sewer rate increases of 6 percent each year.

The Water Department anticipates spending $85 million per year for the next 6 years just to resolve its infrastructure backlog. With these rate increases and new efficiencies will net the utility only $55 million a year, leaving an annual shortfall of $30 million.

And Cleveland, Ohio, has been investing an average of $60 million per year over the last 10 years for drinking water infrastructure. Over the next 8 years, Cleveland must invest $500 million to rehabilitate and modernize 3 of its 4 water plants. To finance this, Cleveland has adopted an 18 percent annual rate increase over the next 5 years.

This is after 10 consecutive years of increases totaling 80 percent. Yet, this does not even address Cleveland's distribution system needs in any substantial way. In Portland, Oregon, $1 billion mandated combined sewer overflow program will result in double-digit rate increases for about 15 years.

At the same time the need for infrastructure funding for drinking water is $400 to $800 million in the next 10 years. The likelihood that water rates can be raised to cover those costs is doubtful.

Given that the increase in sewer bills has virtually used up the elasticity that existed to raise rates, the Knoxville Utility Board has spent $40 million in capital improvements over the last 5 years for the drinking water system, and the utility is anticipating another $64 million in water systems improvement during the next 5 years.

The Knoxville Utility Board is also a waste water utility, which has its own infrastructure needs, including $63 million in sewer system improvements over the next 5 years, In addition to $80 million, which they have spent over the previous 14 years.

How we close this $11 billion drinking water infrastructure gap between historical spending and overall need is the next question. To help reduce this gap, water utilities, especially large metropolitan systems, have raised rates and have made great strides in efficiencies, with some utilities achieving 20 percent savings in operations and maintenance.

Utilities will continue to reduce costs, seek cost effective financing, and employee innovative management strategies. There will remain a gap between the available funds and the significant level of investment required.

AWWA does not expect the Federal Government to completely fill the gap, but some help is needed. AWWA pledges to work with Congress to develop a fair solution to this problem. Thank you again for holding this important hearing.

[The prepared statement of Beverly Ingram follows:]

PREPARED STATEMENT OF BEVERLY INGRAM, ASSISTANT DIRECTOR, DETROIT WATER AND SEWER DEPARTMENT, ON BEHALF OF THE ASSOCIATION OF METROPOLITAN WATER AGENCIES

Good afternoon, Chairman Gillmor, Congressman Pallone, members of the subcommittee. My name is Beverly Ingram, and I am the Assistant Director for Administration of the Detroit Water and Sewer Department.

This testimony was prepared on behalf of the Association of Metropolitan Water Agencies, which is comprised of the nation's largest drinking water agencies. All AMWA member-agencies are publicly owned. Represented by city water commissioners and utility chief executives, AMWA's member-agencies collectively serve more than 110 million Americans with clean, safe drinking water.

Thank you for holding this hearing to learn more about the infrastructure needs of local water utilities. Our goal is to provide you with information to help you understand the enormous challenges we are facing over the next 20 years.

Overall Need and the Gap

Last fall, the Water Infrastructure Network (WIN) released *Clean & Safe Water for the 21st Century,* which summarized infrastructure needs and the funding shortfall facing drinking water and wastewater systems. AMWA is a member of WIN. The report estimates that drinking water utilities across the nation collectively need to spend about $24 billion per year for the next 20 years, for a total of $480 billion. WIN's analysis also concluded that water systems currently spend $13 billion per year on drinking water infrastructure, leaving an $11 billion annual gap between current spending and overall need.

A separate needs estimate was released in February by the U.S. Environmental Protection Agency (EPA), based on a survey of public water systems. The survey results suggest water systems will need $150 billion during the next twenty years. But according to EPA, their survey underestimates the true need. The survey is intended to be used as the basis for the Drinking Water SRF distribution formula. Because the Drinking Water SRF is primarily concerned with projects that will help systems comply with drinking water quality regulations, so is the survey. Therefore, EPA's estimate excludes many needs, such as the replacement of treatment facilities and distribution systems due to age. This is the largest infrastructure expense facing the nation's water suppliers. The survey also excludes capital projects related to raw water storage, and EPA's estimate for medium and large systems is substantially under-evaluated because the agency relied on five-year capital improvement plans (CIPs) and included them in the 20-year picture. Utilities may estimate their needs for many years into the future, but most CIPs cover five-year periods, leaving the remaining out-years undocumented, and thus excluded by the survey.

In contrast, WIN's $24 billion per year estimate is more comprehensive. It relies on historical system construction data, population figures from the Census Bureau, actual cost data from the drinking water community, data on infrastructure spending from the Department of Commerce, as well as needs estimates by EPA and AWWA.

Like the nation's other 55,000 water utilities, the Detroit Water and Sewer Department is responsible for providing safe, clean drinking water to protect public heath and comply with drinking water regulations. In addition, our customers—both families and businesses—expect reliable service. Detroit's 4.2 million customers expect and deserve safe water to come out of their taps each morning.

To meet our responsibilities, old pipes and out-of-date treatment facilities must be replaced, repaired and refurbished. Distribution pipes in some of our cities were laid in the late 1800s, when municipal water systems were first built. These cast iron pipes are said to last as long as 120 years. Pipes laid in the 1920s, during a second wave of water system construction, are made of different materials that are said to last as many as 100 years. And experts say that pipes laid during a boom in construction after World War II could last 75 years.

Similarly, treatment plants built in the 1950s have outlived their maximum life spans. Even treatment facilities built soon after passage of the Safe Drinking Water Act, in 1970s, are 25 to 30 years old, and must be replaced with advanced treatment technology.

Considering the average life span of this infrastructure, it becomes clear that the time for refurbishment and replacement is upon us.

Operations and maintenance costs must be taken into account, as well. AWWA estimates that water utilities will spend an additional $27 billion per year to operate and maintain their facilities. We note this because electricity costs comprise be-

tween 20 to 80 percent of a water utility's total operating budget. The inevitable rise in energy costs will increase the O&M expenses of utilities, leaving fewer dollars for drinking water infrastructure.

Similarly, the cost to finance infrastructure can affect the availability of funds and whether a community can afford to build a needed water project. AWWA and EPA estimate drinking water and wastewater systems will each spend $5 billion per year to finance their projects.

WIN estimates that household water bills must double or triple in most communities, on average, if utilities are forced to absorb the entire infrastructure bill. This scenario is complicated by rate inelasticity. A household's water bill often covers drinking water supply, sewer and storm-water control. Raising rates to cover one, diminishes the ability to pay for the other two. Unfortunately, all three sectors are facing massive infrastructure challenges.

Further compounding this issue is demographics and its impact on large urban centers, such as Detroit. When people move to the suburbs, the pipe and the liability for repair and replacement remain behind, creating a financial burden on the remaining, often less affluent, customers. Nevertheless, these cities cannot forgo infrastructure improvements.

To better understand these infrastructure needs, here are some local examples.

Kansas City, Missouri. Kansas City raised rates by 100 percent over the last 10 years, and the utility plans water rate increases of four percent each year and sewer rate increases of six percent each year. The water department anticipates spending $85 million per year for the next six years just to resolve its infrastructure backlog, but these rate increases and new efficiencies will net the utility only $55 million per year, leaving an annual shortfall of $30 million.

Cleveland, Ohio. Cleveland has been investing an average of $60 million per year over the last 10 years for drinking water infrastructure. Over the next eight years, Cleveland must invest $500 million to rehabilitate and modernize three of its four water plants. To finance this, Cleveland has adopted an 18 percent annual rate increases over the next five years. This is after 10 consecutive years of increases totaling 80 percent. Yet this does not even address Cleveland's distribution system needs in any substantial way.

Portland, Oregon. In Portland, a $1 billion mandated combined sewer overflow program will result in double digit rate increases for about 15 years. At the same time, the need for infrastructure funding for drinking water is $400-800 million in the next 10 years. The likelihood that water rates can be raised to cover these costs is doubtful, given that the increase in sewer bills has virtually used up the elasticity that existed to raise rates.

Knoxville, Tennessee. The Knoxville Utility Board (KUB) has spent $40 million in capital improvements over the last five years for the drinking water system, and the utility is anticipating another $64 million in water system improvements during the next five years. KUB is also a wastewater utility which has its own infrastructure needs, including $63 million in sewer system improvements over the next five years in addition to the $80 million KUB spent over the previous 14 years.

Conclusion

How we close the $11 billion drinking water infrastructure gap between historical spending and overall need is the next question. To help reduce this gap, water utilities, especially large metropolitan systems, are raising rates and have made great strides in efficiencies, with some utilities achieving a 20 percent savings in operations and maintenance. Utilities will continue to reduce costs, seek cost-effective financing and employ innovative management strategies. Regardless, there will remain a gap between the available funds and the significant level of investment required. AMWA does not expect the federal government to completely fill the gap, but some help is needed.

AMWA pledges to work with Congress to develop a fair solution to this problem. Thank you, again, for holding this important hearing.

Mr. GILLMOR. Thank you, and we will proceed with Dr. Janice Beecher, representing the National Association of Water Companies.

STATEMENT OF JANICE A. BEECHER, BEECHER POLICY RESEARCH, INC., ON BEHALF OF THE NATIONAL ASSOCIATION OF WATER COMPANIES

Ms. BEECHER. Thank you, Mr. Chairman, and Congressman Pallone. I am pleased to be here to discuss this very important issue. My name is Jan Beecher, and I am an independent policy research consultant. I specialize in the structure and regulation of the water industry.

This testimony is based on my independent analysis of this subject that I prepared for a recent water infrastructure conference. Let me begin by emphasizing that my purpose here is not to dispute the fact that the water and waste water industries face substantial and accelerating infrastructure needs associated with a variety of cost drivers, not all of which are compliance driven.

My purpose is to promote an informed dialog about some of the assumptions behind this infrastructure funding gap and some of the presumptions about how to best address it.

The $1 trillion 20 year needs estimate for water and waste water systems has become a focal point for discussion, but the trillion dollar estimate is imprecise and may be inflated as I think was also suggested by the CBO analysis.

Frankly, O&M costs I do not believe should be included. I also believe the costs of growth should not be included. Growth should pay for growth. I think that is a good principle.

Plus, and as equally important, estimates of the needs seem to give little weight to the potential for lowering total costs through industry restructuring, innovation, operational efficiency, markets, and integrated resource management.

The gap is essentially a construct, but not an inevitability. The projected cumulative shortfall will result if, and only if, the need estimate is accurate and funding and expenditure levels are not increased. A number of interrelated myths have emerged in the context of this infrastructure funding debate.

First, that a national crisis is looming. Second, that the cost of water services cannot be supported through rates. Third, that a funding gap is inevitable, and fourth, that Federal funding solutions provide the centerpiece in terms of attending to the issue.

Some of the assumptions behind these beliefs can be challenged. To this end, I will highlight a few basic reality checks. First, aggregate municipal finance data indicate that many water and waste water utilities are not collecting sufficient revenues relative to their expenditures.xxx

Some communities have deferred investments, as well as deliberately maintained unrealistically low water and waste water rates. This persistent underpricing of water services contributes to the anticipated funding gap, and sends inappropriate signals to customers about the value of water services, which will lead to inefficient consumption and inefficient supply decisions to meet that inflated level of demand.

Second, water services today are a relative bargain for many households. Water and other public services actually account in the aggregate for a relatively small share of the average household utility budget. Less than $400 per year, or .08 percent of the total household expenditures.

And while I realize that there are variations from these averages, I think it is important to note these data. Consumers spend more than twice as much on electricity and telecommunications services.

On average, a four person household spends about the same amount each year on cable TV and tobacco products as on water services. In addition, U.S. consumers pay much less for water services than consumers in many other developed countries.

Third, Americans are very concerned about the quality of their drinking water and protection of water resources. The consumers are also more willing to pay for bottled water than tap water, at least it seems in many cases.

Conservatively, the average price of one gallon of community supplied water conveniently delivered to the tap is less than one-third of one penny. Every other water alternative is no more safe, much less convenient, and astronomically more expensive.

At a $1.15 per gallon, what I call designer water, costs 347 times the price of tap water. We obviously need to do a lot in terms of public education in this area. Fourth, it is important for the water industries to have realistic expectations about future Federal funding for water programs in order to plan sufficiently to meet their infrastructure and service obligations.

Federal health and environmental standards are not necessarily the primary cost driver, nor a rationale for general revenue funding. Massive Federal grant subsidies that go beyond affordability issues seem neither likely nor beneficial from a societal standpoint.

Subsidies can perpetuate dependence, inefficiency, and technological stagnation on the part of recipients. The argument for public subsidies should also be examined in the context of local funding priorities. As an example, I will suggest that the price tags for municipal stadiums often are comparable to estimated water infrastructure needs.

Finally, many systems can and do manage their assets effectively and support the cost of services through rates. The transition to cost base rates for water services can trigger rate shock and raise very legitimate affordability concerns for disadvantaged communities and low income households.

And I think there has been some very pertinent discussion of that here today, but financing, rate design, and assistance methods can be used to mitigate these effects. The regulatory capacity development and funding principles embodied in the current Safe Drinking Water Act and SRF programs place appropriate priority on public health and affordability, and I think they can guide us in this area.

In sum, the concept of a funding gap merits further analysis, consideration, and debate. The need to invest in the Nation's water and waste water infrastructure is real, but the funding gap is essentially a construct.

The water industries should take responsibility, provide leadership, and effectively manage their current and future assets on the public's behalf. Aggressive action can close the projected gap from the top, in terms of reducing total and operating costs, and funding for research and development can play a role here.

The essential tool for closing the gap from the bottom is cost based rates for water services. Subsidies should be used minimally, judiciously, and on a needs basis to address genuine affordability concerns. But the goals should be sustainable systems, and not sustainable subsidies. Thank you very much.

[The prepared statement of Janice A. Beecher follows:]

PREPARED STATEMENT OF JANICE A. BEECHER,[1] BEECHER POLICY RESEARCH, INC., ON BEHALF OF THE H_2O COALITION[2]

Purpose

Water and wastewater services are vital to the quality of life for citizens across this country. Although estimates of the industries' total infrastructure needs lack precision, there is actually a considerable amount of consensus that the water sector faces its most formidable challenge in terms of replacing and upgrading the aged delivery infrastructure.

The purpose of this testimony is to provide some general "reality checks" in relation to the current national debate over infrastructure funding. The purpose of the analysis is not to critique any particular perspective, but rather to help inform the dialog on these most important issues.

The Infrastructure Funding Issue

Why is water infrastructure funding on the Policy agenda? The infrastructure needs of the water and wastewater industries have recently taken a prominent place on the policy agenda, even though this issue is not entirely new. The industries are experiencing extraordinary increases in costs and investment needs that are closely related to "people and pipe" demographics—that is, historical patterns of urban development and the age and condition of the physical plant in place. Today, new data, models, and other tools have improved our understanding of this issue. The various stakeholders that recognize these needs have reached a critical mass.

Estimating Needs

General agreement exists on the physical condition of the nation's many local water and wastewater systems. A recent report card issued by the American Society of Civil Engineers (ASCE) assigned low grades to most of the nation's various infrastructure sectors, including "Ds" for water and wastewater.

In 1995, studies by the U.S. EPA estimated that water industry assets totaled about $144 billion (Community Water System Survey, inflation-adjusted to 1999), while the estimated 20-year infrastructure need totaled about $151 billion (Needs Survey, inflation-adjusted to 1999). USEPA has recently issued an updated 20-year needs estimate that also is in the range of $151 billion. EPA's estimates focus on needs directly and indirectly associated with Safe Drinking Water Act (SDWA) compliance.

USEPA found that more than half of the total infrastructure need is for transmission and distribution system needs. About 25 percent of the total need is for water treatment facilities. USEPA has also estimated the impact of infrastructure costs on households served by systems of different sizes. These findings demonstrate how scale economies are a key determinant of cost impacts. Smaller water systems

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This testimony is based on an annotated graphic presentation, which is available to interested parties. This presentation was originally presented at the Infrastructure Conference of the American Water Works Association (Orlando, March 2001). The presentation has been expanded, revised, and annotated for distribution.

This testimony is based on Dr. Beecher's independent analysis of the issues. Her participation in this hearing is sponsored by the H_2O coalition. The opinions expressed in this presentation are those of the author and do not necessarily represent the views of research clients and sponsors.

[2] The H_2O Coalition is made up of the National Association of Water Companies, the National Council for Public-Private Partnerships, and the Water and Wastewater Equipment Manufacturers Association.

are disadvantaged in this regard, although the service populations of small systems vary in their ability to support the cost of service.

In 1998, the American Water Works Association (AWWA) escalated total 20-year water needs to $366, billion (inflation-adjusted to 1999), focusing in particular on distribution system needs. Today, various groups have coalesced around a total 20-year needs estimate in the realm of $1 trillion for the water and wastewater industries.

The $1 trillion 20-year needs estimate for water and wastewater systems has become a focal point for discussion. The $1 trillion estimate is imprecise. Comprehensive, valid, and reliable technical and financial data on the nation's water and wastewater systems is not readily available. A precise needs estimate is not as important as recognizing the general need. Indeed, devoting scarce analytical resources to estimating the need may not be beneficial. The gap is the projected cumulative shortfall that will result if—and only if—(1) the infrastructure need estimate is accurate and (2) expenditures on infrastructure are not increased. In other words, the gap will materialize only if no action is taken to close it.

Understanding the Infrastructure Monster

Understanding the "infrastructure monster" is a challenge. It is instructive to look back to earlier research on water utility costs. Evidence from earlier studies suggests an awareness of rising costs and the role of infrastructure replacement in the cost profile:

- The Nation's Public Works: Report on Water Supply (Wade Miller Associates, 1987) forecast annual needs for the water industry in the range of $4.8 to 7.1 billion as follows: 37-49% for deferred infrastructure maintenance/replacement; 39-55% for meeting demand growth; and 8-13% for Safe Drinking Water Act (SDWA) regulatory compliance
- Meeting Water Utility Revenue Requirements (NRRI, 1993) found that "In reality, SDWA compliance costs may pale in comparison to costs associated with infrastructure and demand growth needs."

Some of the larger utility systems also have been aware of the need to step-up the pace of infrastructure replacement. Some of the investor-owned (private) water utilities have been particularly active in this area. As an example, St. Louis County Water prepared detailed assessment of its distribution system in 1994. According to the company:

- "An accelerated replacement program is needed now if we are to avoid excessive customer reaction and a 'crisis' response plan . . .
- The Company's infrastructure replacement program is unique because it does not involve the construction of one extraordinary asset over a long construction cycle (e.g., a nuclear plant), but a multitude of short-cycle construction projects which, taken as a whole, are extraordinary in nature . . .
- The Company believes it is critical and in the public interest . . . [to] synchronize rate recovery with plant completion." (St Louis County Water Company, 1994).

Capital Intensity, Age, and Deferral

The water industry is very capital intensive, that is, physical plant or infrastructure is a substantial core cost. Water investments also have very long service lives that benefit generations of customers. Measured as a ratio of utility plant to revenues generated, water utilities are more capital intensive than the natural gas, electric, and telecommunications industries. Water utilities must invest more than $3.50 for every dollar of annual revenues received from customers. Trend data (and projected investments) indicate that the water industry is becoming even more capital intensive.

Industry experts have estimated that pipes were installed in the early part of the century at a cost of about $5 per foot (or less). It is not unusual for replacement costs to total $100 per foot—which is more than double the overall rate of inflation for the same period. The rate of replacement reflects the anticipated life expectancy for a physical investment. A replacement rate of 1 percent implies a life expectancy of 100 years. Lower rates imply a much longer—and unrealistic—life expectancy. Today's pipe materials today are expected to last about 75 years, serving generations of customers.

The rate of pipe breakage increases as infrastructure ages. Breakages lose water, disrupt service, and pose public health risks. Emergency repairs typically are much more costly than planned repairs. The rate of breakage varies with pipe material, which also correlates with the period of installation. Also, as facilities age, the overall percentage of "accounted-for" water declines; that is, more water is lost. The value of water losses has increased with the increased cost of water supplies, treatment, and pumping.

Following its assessment, St. Louis County proposed to pick up the pace of replacement from 5 (.13%) to 30 (.8%) miles of pipe per year (total pipe miles equal 3,882). But even the accelerated pace of replacement now used by some systems is probably inadequate based on current knowledge about the life expectancy of materials. But making the case for replacement needs to rate regulators and other oversight bodies (mayors and city councils) has been a significant challenge. Recently, some private utilities have won approval for surcharge mechanisms to help fund a continuous program of replacement, while also mitigating rate shock (the leading example is the Distribution System Improvement Charge, implemented in Pennsylvania).

Although much of the infrastructure challenge is simply age-related, at least part of the current need can be attributed to capital deferrals, or the postponement of infrastructure investments. Because their profit is based on the value of their rate base, investor-owned utilities have less incentive to defer capital investments. Deferrals exacerbate the "gap" problem by increasing the level of need and thereby widening the gap between future expenditure levels and current revenue levels.

A model developed by Australian researchers suggests that the compound effect of infrastructure replacement needs over several decades suggests a "Nessie curve," named after the mythical Loch Ness monster. These cost curves can provide a useful model to help utilities and other stakeholders understand needs at the system level.

In reality, the challenges of prudent capital replacement and "lumpy capacity" are not new to utility economics. Other utility sectors have faced—and are facing—infrastructure needs. However, today's water and wastewater infrastructures were cheap to begin with, were well-subsidized (particularly for wastewater), and have long been depreciated. These factors combine to create an extraordinary pressure on costs. Emerging information systems, planning and management tools, and alternative technologies can help manage the monster—and close the funding gap.

The real risk today may be in the potential for a "responsiveness gap," that is, the gap between awareness and knowledge about an issue or problem and taking the actions necessary to address the problem and avoid or mitigate deleterious effects. However, debate is open as to how to respond to the challenges now faced by the water industry, particularly with respect to private versus public responsibilities.

The Emerging Myths

The infrastructure funding debate is contributing to a number of emerging myths that may or may not be grounded in reality. The myths suggest:

- That a national crisis is looming.
- That the cost of water services cannot be supported through rates.
- That a funding gap is inevitable.
- That public (that is, federal) funding solutions are essential.

Some reality checks may help inform the infrastructure funding debate by challenging some of the emerging myths. These reality checks are offered not as criticism of any given perspective, but rather to bring an empirical perspective to the dialog about these important issues.

Reality Check: Municipal Finances

The water and wastewater industries are dominated by municipal ownership. Care should be taken to not over-generalize about municipal finances. However, some of the available data (from the U.S. Census of Governments and elsewhere) may be relevant to the funding debate.

The data indicate that in general, when municipalities provide electricity and natural gas services, revenues from user charges exceed expenditures. For water and sewer services (as well as solid waste and transit services), expenditures *exceed* revenues from user charges. The findings generally suggest that municipal water customers do not cover expenditures through rates. The implications of this "gap" are worse if the expenditures understate the cost of water service (as is the case with deferrals). Of course, individual water and wastewater systems may have very different financial profiles.

The deficit between expenditures and user charge revenues is detectable for different types of publicly owned water systems: municipalities, special districts, counties, and townships. Trend data indicate that the expenditure-revenue gap has been persistent over time, although it has closed somewhat. The difference between expenditures and revenues must be made up through tax revenues and subsidies (grants). The trend data are comparable when displayed on a per-capita basis. Data for individual cities show that aggregate expenditures on water, energy, and transit utilities exceed user-fee revenues in some cases, but not in others. Similar results can be seen for municipal wastewater systems.

For investor-owned water utilities, operating revenues are provided primarily through cost-based rates charged to customers, and revenues exceed expenditures. An investor-owned water utility must support the full cost of service through rates in order to survive.

The difference between revenues and expenditures is used to pay for taxes, depreciation, and the cost of capital. Rates charged by private water utilities are strictly regulated by state public utility commissions, which adhere to accepted systems of accounts and cost-of-service standards of ratemaking. USEPA data (Community Water Systems Survey, 1995) also revealed that privately owned water systems collect more revenues per gallon than publicly owned systems.

Municipal debt can be used for long-term capital investments, such as water treatment facilities. Debt instruments that can be used by the water sector include traditional issuances, as well as private-activity bonds. Debt instruments should not be used for routine maintenance (considered an annual expense). However, debt (short-term and long-term) can be used for major capital replacements to amortize costs over time. Ideally, costs are recovered over the useful life of the capital investment (although in practice shorter time periods are used).

Several interrelated financing issues have contributed to or complicated the infrastructure funding problem. These factors include: unrealistic service-life expectations, extraordinary cost inflation, inadequate accounting and accounting standards, investment deferrals, inadequate user charges, profits and reserves for a few systems, and concerns about rates and equity. Accounting standards are the domain of the Governmental Accounting Standards Board (GASB) for governmental utilities and the state public utility commissions for investor-owned utilities.

Reality Check: Household Expenditures

Household expenditures for utility services and other goods and services provide another relevant perspective. Consumer expenditure data are available from the Consumer Expenditure Survey (Bureau of Labor Statistics). Although the data have limitations, they are useful for general purposes.

Water and public services (sewer and solid waste) account for a relatively small share of the average household utility budget (less than .8% of total expenditures), particularly in comparison to electricity (2.4%) and telecommunications (2.1%). In many respects, water services are a "bargain" to average households. Of course, averages mask relevant variations and actual expenditures are affected by many factors. Over time, average household expenditures for utilities have climbed, but expenditures for water and other public services have retained their relative position. The *percentage* of household income and expenditures devoted to utilities has declined with time, although the share for water and other public services has remained relatively constant.

On average, a four-person household spends about the same amount each year on cable television and tobacco products as on water services. Americans have shown a tremendous willingness to pay for advanced communications and entertainment technologies, including cellular phones ($41.24 per month), cable television ($28.92 per month), and internet services ($21.95 per month). For many U.S. households, the expenditures for these more discretionary services are greater than for water services. It is noteworthy that the nation's $80 billion cellular telephony infrastructure has been entirely supported by private providers who collect fees from users.

Reality Check: Global Comparison

Another reality check can be made using comparative international data. Americans use more water per capita overall than most nations of the world. Yet water prices in the United States are comparatively lower than prices charged by water service providers in many other developed countries. These findings also are supported by a study conducted by researchers in the Great Britain who controlled for international difference in the gross domestic product.

Reality Check: Rate Shock

Large rate increases have the potential to cause rate shock among customers. Technically, rate shock applies when a rate increase is associated with a significant drop in usage, which reflects the willingness (and ability) to pay for service. For essential services (with relatively price-inelastic demand), these drops may be transitory. The term "rate shock" is also used to describe the pubic outcry associated with rate increases—which may have no basis in affordability. However, the extent of rate shock and affordability concerns depends in part on the level of the current water bill and the magnitude of the rate increase. Techniques are available to mitigate rate shock and address genuine affordability problems.

Consumer Price Index data (BLS) reveal that real (inflation-adjusted) water rates are rising faster than the overall rate of inflation—along with prices for garbage col-

lection, cable television, and local telephone service. Data for individual communities suggest that real (inflation-adjusted) rates have risen for some but declined for others.

Any given rate increase may or may not trigger rate shock or cause hardship. A higher percentage increase on a low base may not be problematic for most households. The magnitude of the increase relative to household income levels should be considered. Public involvement and communications (including informative bills) can help customers understand the reasons for the rate increase.

As suggested in the review of municipal finances, underpricing of water services may be an important factor in the projected funding gap. Underpricing sends inappropriate signals to customers about the value of water, leading to inefficient useage. According to basic economic theory, underpricing also leads to over-consumption and inefficient supply decisions to meet inflated demand. Privately owned utilities are more likely to adhere to cost-based ratemaking that recovers total revenue requirements (capital and operating costs).

Some communities deliberately maintain "low" prices for water and wastewater services for reasons that include community values, economic development, and political expedience. In some cases, rate increases have been avoided for very long time periods. Taking inflation into effect, a "stable" rate is actually a rate that has decreased over time. The "loss" of revenue presents an opportunity cost to the community in terms of its ability to make appropriate infrastructure investments.

Rate shock in the water sector is possible because rising costs must be recovered over flat per-capita demand. Affordability concerns are real but manageable. Financing, ratemaking, and conservation strategies can mitigate rate shock to a degree. Surcharge adjustments can be used to achieve gradualism in rate increases. Larger systems can use consolidated rates, progressive rate structures, and conservation targeted to low-income households. *Needs-based* subsidies can be used to help eligible customers by providing direct payment assistance or funding a lifeline rate.

From a theoretical standpoint, willingness to pay is represented by the demand curve, which incorporates the consumer's ability to pay. From a practical standpoint, ability to pay is a function of price and income and can be addressed through rate design and subsidies (respectively). For many publicly owned systems, the real problem is not the willingness nor the ability to pay—but the "willingness to charge" customers at rates closer to the true value of water service.

Reality Check: Consumer Preferences

Another "gap" seems to persist between customer preferences and their willingness to pay for safe and reliable water service. According to opinion polls (Gallup) Americans consistently express a high degree of concern about drinking water and related issues. Paradoxically, consumers do not necessarily appreciate the value of water services. Consumers often appear unwilling to support rate increases necessary to ensure drinking water quality and reliability. Indeed, low prices reinforce the view that water services are an entitlement. Public education is needed to close the gap between opinion and willingness to pay the cost for arguably the most essential utility services.

Water itself has no substitutes, but alternative methods of delivery are available. For many U.S. households, the price of one gallon of centrally-supplied water—conveniently delivered to the tap—is less than one-third of one penny (see Raftelis Environmental Consulting Rate Survey). In general, every other water alternative is no more safe, much less convenient, and astronomically more expensive. At $1.15 per gallon, the price of "designer water" is 347 times the price of tap water.

Despite the high costs, Americans continue to buy bottled water in increasing amounts.

In 1999, bottled water sales had increased by 12 percent. In 1999, the nation's water utilities collected revenues totaling about $29.4 billion. Wastewater treatment works collected revenues totaling about $26.3 billion. The bottled water industry collected revenues totaling $5.2 billion.

Rough estimates can be used to compare the profit margin for bottled water versus tap water. For larger bottlers, total production costs (including source costs) amount to about 10 cents for each bottle that can be sold for 70 cents or more (a 600% markup). The "markup" for tap water, even for private companies, is closer to 10 percent.

Reality Check: Federal Funding

The reality of the broader context of federal funding also is relevant to any particular constituency, including the water and wastewater industries. It is important for the water industries to have realistic expectations about future federal funding for water programs in order to plan sufficiently to meet infrastructure needs.

Water services have always been and always will be subsidized to a degree. Some subsidies are in the public interest because of equity considerations, as well as health, safety, and environmental protection concerns. All subsidies have distributional consequences (that is, they result in both winners and losers). Subsidies can also perpetuate dependence, inefficiency, and stagnation on the part of recipients. Whether a water system or a customer, subsidies can mute incentives for cost control. Subsidies require tax revenues and taxpayers are also ratepayers (the same households pay one way or another). The social benefits of subsidies should outweigh the total costs.

Programs have been established to assist low-income customers in other utility sectors.

The LIHEAP programs provide payment assistance for energy services. Under the 1996 Telecommunications Act, the Lifeline and Linkup programs provide assistance to telephone customers.

In reality, water and wastewater infrastructure funding already exceeds federal funding provided to the LIHEAP and Lifeline/Linkup programs. Levels of funding under the WIN (Water Infrastructure NOW) proposal would vastly exceed current levels for water infrastructure, as well as other utility programs. The WIN proposal expands grant subsidies, which effectively can both reward and perpetuate inefficiency. If a subsidy rewards past inefficiency, continued inefficiency on the part of the system is assured because underpricing will persist.

Infrastructure funding for water is provided through the Clean Water and Safe Drinking Water State Revolving Funds (SRF). The principles underlying the DWSRF are sound: demonstration of capacity by systems; priority on pubic health and affordability; emphasis on loans (v. grants); and ineligibility of maintenance and growth-related costs. The SRF should not reward cost avoidance and inefficiency. The SRF should not advantage publicly owned systems (and their customers) over privately owned systems (and their customers) and further widen the gap in rates.

Some programmatic reforms could enhance the existing Clean Water and Drinking Water funding programs. Potential measures include: improving efficiency and lowering administrative costs to states and systems; addressing barriers to access and funding equity for different types of systems (large and small systems; publicly and privately owned systems); establishing fair criteria for funding infrastructure costs; and promoting sound cost accounting and rate design.

The long-term federal funding environment for all utility services is not without uncertainty. Concerns have emerged about maintaining funding for telecommunications assistance programs under the Bush administration. Base-level funding for LIHEAP (excluding supplemental appropriations) has declined over the life of the program. The budget of the USEPA also has been targeted for budget cuts under the Bush administration.

Reality Check: State and Local Priorities

At the local level, water and wastewater services—although vital to communities—are not always assigned high priority. In many larger cities, funding needs for the water sector are comparable to funding provided for professional sports stadiums.

Given their primacy for water and wastewater policies, the state also must play a role in addressing the infrastructure issues. Several states have taken steps in this area, including: Pennsylvania (cost recovery), Kentucky (regional consolidation), Rhode Island (capital planning), Oregon (program integration), and Texas (regulatory reform).

Reality Check: The Gap

The concept of a funding gap merits further consideration and debate. The need to invest in the nation's water and wastewater infrastructure is real, but the "funding gap" is essentially a construct. The magnitude of the gap is uncertain and may be inflated. The potential to lower costs through restructuring, innovation, operational efficiency, and integrated resource management (including conservation achieved by water-efficient fixtures and practices) may not be fully considered. The need is largely attributable to system demographics (age and condition), although some deferrals have probably exacerbated the problem. Many water utilities (and most other utilities) can and do support the cost of service through rates. A funding gap will materialize if deferrals and underpricing persist; that is, if the responsiveness gap widens. The water industries must provide leadership and effectively manage their current and future assets on the public's behalf.

Aggressive action is needed to close the projected gap from the top (infrastructure needs) and from the bottom (expenditure levels). Cost-reduction strategies for closing the gap from the top include: efficiency and optimization (least-cost) approaches

directed at both water production and usage; leadership and continued technological innovation; and industry restructuring to achieve scale economies and improve operational performance. Some gap estimates have attempted to incorporate efficiency improvements—but a gap is still anticipated. Technical and managerial innovation can substantially reduce operating costs; capital costs can be reduced, but probably to a lesser degree given the basic capital intensity of water services. Industry restructuring includes consolidation and fundamental changes in system ownership and management (including privatization).

The gap can be closed from the bottom by increasing revenues to support infrastructure expenditures. Revenue-enhancement strategies include: cost-based (marginal-cost) rates to send better price signals to customers, along with other rate-making strategies (such as surcharges); private-sector investment; and public-sector funding (local, state, and federal). With the magnitude of the infrastructure need and the complexity of the water sector, multiple revenue-enhancement solutions are necessary and appropriate. However, cost-based rates should be emphasized and public subsidies should be used judiciously.

The public sector will continue to play a central role in addressing water and wastewater infrastructure needs. The public sector can: leverage other public and private funding sources; provide incentives for optimal investment, operational efficiency, and cost-effective restructuring; support research and development, data collection and information dissemination; address at-risk systems and households based on demonstrable needs; and promote sustainable water systems, not sustainable subsidies.

The private sector can play an expanded role in addressing water and wastewater infrastructure needs. The private sector can: provide leadership, technical innovation, and research; promote efficiency and sustainability through market-based solutions as appropriate; develop a range of asset ownership and management options to address capital and operating needs; secure and utilize available public funding; and maintain accountability through regulation.

The Real Challenges

Moving forward, the real challenges to all stakeholders in the water and wastewater sectors may be to:

- Establish a new science of prudent asset management for the water sector.
- Engage the public on water issues through open and participatory processes.
- Demonstrate a willingness to charge for the true cost of water service.
- Use public funding strategically to make lasting improvements to operations.
- Do not postpone the inevitable and perpetuate the responsiveness gap.
- Promote equity and sustainability over a long-term planning horizon.
- Be receptive to technical and institutional innovation.

Although formidable, these challenges can be met.

I look forward to working with this Committee, the H_2O Coalition, and all other stake holders on this issue. Thank you for your attention.

Mr. GILLMOR. Thank you. Barker Hamill of New Jersey, the Association of State Drinking Water Administrators.

STATEMENT OF BARKER HAMILL, ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS, CHIEF, BUREAU FOR SAFE DRINKING WATER, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION

Mr. HAMILL. Thank you. My name is Barker Hamill, and I am the Chief of the Bureau of Safe Drinking Water in the New Jersey Department of Environmental Protection. I am here representing the Association of State Drinking Water Administrators, and I thank you for the opportunity to offer comments on this subject.

We certainly agree that there is a large infrastructure need and that there is a large portion of that need that is subject for underground piping needs. There is also evidence that the financing for the needs for the water infrastructure and developing viable solutions to meet these needs will be challenging.

The Association is prepared to work with Congress, EPA, and the water utilities, and other stakeholders, to help define those activi-

ties. ASDW members are highly involved in providing the raw data used in EPA's drinking water need surveys.

This activity competes with other new activities established by the 1996 Safe Drinking Water Act Amendments. State programs infrastructure is also experiencing a funding problem. Basic public water supply supervision program funding is unchanged since a much needed increase in fiscal year 1997. That recognized some of the increased demands of the 1996 Safe Drinking Water Act Amendments. While significant portions of the SRF funding theoretically can be used to support programs, the practical reality is that States have only been able to use about one-half of the available resources.

A shortfall of funding from current funding sources will grow from about $110 million in fiscal year 1902 to $207 million in fiscal year 1905. The 1996 Safe Drinking Water Act Amendments require that the EPA develop programs and regulations to address microbial contamination, disinfectant by-products, radon, radionuclides, arsenic, ground water protection, filter backwash, among other rules.

The EPA must also evaluate potential contaminants for regulation well into the future, as well as look back and do a 6 year review of existing rules. It is one of these 6 year review existing rules, the total coliform rule, that is likely to address major issues with distribution systems and distribution system water quality, which is where a lot of this activity is.

As a result, infrastructure funding needs will continue to escalate as more regulations are promulgated that address new contaminants in drinking water, and its current regulatory level to lower or meet improved analytical methods to bring standards closer to the maximum contaminant level goal.

In addition, new treatment technologies such as membrane, ozone, and UV eradication will become more commonplace in water treatment. Some of these technologies are capital intensive to install and operate, while others will require significant retrofitting of current treatment plants and upgrades to distribution systems.

Funding of water system infrastructure needs involves the partnership at the Federal, State, and local level. At the Federal level, funding is available through the Drinking Water State Revolving Loan Fund that was established under the 1996 Safe Drinking Water Act Amendments.

In the 1996 Safe Drinking Water Act Amendments, Congress authorized $9.6 billion between fiscal year 1994 and fiscal year 2003 for States to provide loans and grant equivalents to water systems in need.

An important note is that although $7.6 billion was authorized through fiscal year 2001, only $4.42 billion has been appropriated, leaving a funding gap of $3.18 billion that the States and water systems were expecting to be available to meet infrastructure needs and compliance requirements of the Safe Drinking Water Act.

Many States have had a long involvement in providing financial assistance for drinking water projects. In New Jersey, we have had a loan program that has made over 180 loans for $145 million that started in 1984. We have integrated that program with the current

SRF program and anticipate an additional 50 loans for about $300 million by the end of 2001.

It is important to note that by the end of this year requests for SRF funds are greater than available SRF funds in New Jersey, and we will be using additional State funding to meet those needs, and we expect the demand to increase as time goes on.

Finally, I would like to stress that Federal guidelines, given the amount of detail that they provide, should be as flexible as possible for States to deal with competing priorities, and to deal with State planning issues and how these funds are spent. The Association thanks you for this opportunity to come and comment.

[The prepared statement of Barker Hamill follows:]

PREPARED STATEMENT OF BARKER HAMILL, CHIEF, BUREAU OF SAFE DRINKING WATER, NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION, ON BEHALF OF THE ASSOCIATION OF STATE DRINKING WATER ADMINISTRATORS

INTRODUCTION

The Association of State Drinking Water Administrators (ASDWA) is pleased to provide testimony before the House Committee on Energy and Commerce Subcommittee on Environment and Hazardous Materials regarding water infrastructure needs and state drinking water program needs. ASDWA represents the drinking water programs in each of the fifty states, territories, and the District of Columbia in their efforts to ensure the provision of safe, potable drinking water to over 250 million consumers nationwide. ASDWA's primary mission is the protection of public health through the effective management of state drinking water programs that implement the Safe Drinking Water Act (SDWA).

WATER INFRASTRUCTURE

Water Infrastructure Needs

Providing a supply of safe, potable drinking water is critical to protecting public health and ensuring current as well as the long-term economic growth of this Nation. In February 2001 the United States Environmental Protection Agency (EPA) released a report entitled *1999 Drinking Water Infrastructure Needs Survey* that indicates that drinking water systems infrastructure needs total $150.9 billion over the next 20 years and that $102.5 billion is needed *today* to ensure the provision of safe drinking water. The bulk of this need, $83.2 billion, is for transmission and distribution projects followed by treatment ($38.0 billion), storage ($18.4 billion), source ($9.6 billion), and other needs ($1.9 billion). These needs are documented for the 54,000 community water systems and 21,400 not-for-profit noncommunity water systems nationwide.

Large systems (serving more than 50,000 people) account for 41 percent of this need while medium sized systems account for $43.3 billion and small systems account for $31.2 billion. Not-for-profit noncommunity water systems account for $3.1 billion of need. Although the total small system need appears modest compared to needs of larger systems, the costs on a per household basis are almost four times higher than for larger systems because small systems lack the economies of scale to spread the costs of capital improvement among many consumers.

Why is there an Infrastucture Need?

Water utilities must continue to upgrade and improve their infrastructure to meet new SDWA regulatory mandates and to replace aging and failing distribution system pipes and appurtenances. While water systems have typically had to keep pace with new requirements of the SDWA with regard to treatment, specific upgrades and replacement of pipes and transmission lines have been addressed, from a regulatory perspective, only in a minor way through mandatory replacement of lead pipes under the Lead and Copper Rule. Much has been learned over the last decade or so; however, about specific health problems associated with distribution system problems such as leaking pipes, cross connections, and backflow. Many of these concerns are likely to be addressed specifically in the future as EPA proposes developing a distribution system rule.

The 1996 Amendments to the SDWA require that EPA develop regulations to address microbial contamination, disinfection by-products, radon, radionuclides, arsenic, ground water protection, and filter backwash. EPA must also continue to

evaluate potential contaminants for regulation well into the future. As a result, infrastructure funding needs will continue to escalate as more contaminants are promulgated that address new contaminants in drinking water, and as current regulatory levels are driven lower to meet improved analytical methods to bring standards closer to the maximum contaminant level goal. In addition, new treatment technologies such as membranes, ozone, and UV irradiation will become more commonplace in water treatment. Some of these technologies are capital intensive to install and operate, while others will require significant retrofitting of current treatment plants and upgrades to distribution systems.

In addition to meeting infrastructure needs associated with compliance with the SDWA, water systems also face the challenge of replacing miles of distribution pipes as materials age and begin to fail. The demographics of distribution pipe installation indicate that over the course of the next 20 years, many of the miles of pipes that have been put in the ground over the last 100 years will reach the end of their useful life and need replacement.

Current Funding Availability

Funding of water system infrastructure needs involves a partnership at the Federal, state, and local level. At the Federal level, funding is available through the Drinking Water State Revolving Loan Fund (DWSRF) that was established under the 1996 SDWA Amendments. In the SDWA, Congress authorized $9.6 billion between FY-94 and FY-03 for states to provide loans and "grant equivalents" to water systems in need. An important note is that although $7.6 billion was authorized through FY-01, only $4.42 billion has been appropriated leaving a funding gap of $3.18 billion that the states and water systems were expecting to be available to meet infrastructure needs and compliance requirements of the SDWA.

States also must match the DWSRF with 20 percent state funding as a way to further capitalize this program. Through June 30, 2000 states had contributed over $548 million additional funds for the program. To the extent that the full Federal amount has not been appropriated; however, revenue is also lost due to the loss of state matching funds. A number of states also leverage the funds to create additional dollars for infrastructure improvements. Through June 30, 2000, states had leveraged over $1 billion in bonds to provide additional project funding. A number of states have also established their own grant and loan programs that are used to supplement DWSRF funding.

Additional Federal funding also comes through the Rural Utility Service Water and Waste Loan and Grant Program under the U.S. Department of Agriculture's Rural Development office. These funds assist eligible applicants in rural areas and cities and towns serving up to 10,000 people. The Federal Housing and Urban Development (HUD) Agency also provides block grants to states under its Community Development Block Grant (CDBG) program to provide assistance to small local governments that generally serve less than 50,000 people and counties with a population of less than 200,000 people. Water and wastewater projects are eligible activities under the CDBG program. Many states use these funds along with USDA and DWSRF funding to package the appropriate mix of grants and/or loans to meet a community's specific financing needs.

At the local level, a primary source of funding for infrastructure improvements comes through rates charged by utilities to consumers for water use. In many cases, however, rates have been kept artificially low and long-term maintenance costs deferred. This has the potential to contribute to "rate shock" should customers have to bear the full cost of projected infrastructure replacement needs. Municipalities can also borrow money from the private sector such as banks or go to the bond market although many smaller water systems and non-municipal systems find it more difficult to access these types of funding. According to the Water Infrastructure Network's report *Clean and Safe Water for the 21st Century,* water systems are currently investing around $13 billion per year for infrastructure needs.

Is There a Funding Gap?

While it may be possible through instruments such as EPA's drinking water needs survey to project drinking water infrastructure needs over the next 20 years, it is much more problematic to define how large an infrastructure funding gap exits. To calculate this accurately, one needs to have a solid understanding of the current and long term funding needs and then have a fairly accurate assessment of the total sources of revenue at the Federal, state, and local level that can be brought together to meet these infrastructure funding needs. The delta (or gap) between these two numbers represents the funding gap or need but only at the gross national level. The "gap" can vary significantly on a water system-by-water system basis depending

on system size, contaminants of concern, the system's current rate structure, access to available capital, and the age of the system, among many factors.

Conclusion

Drinking water system infrastructure needs will continue to increase due to new SDWA regulatory requirements as well as the need to replace aging and failing pipes in distribution systems. A continued partnership among Federal, state, and local funding sources will be essential to ensure the long-term provision of safe, potable drinking water to consumers nationwide. Numerous needs surveys, including EPA's recent analysis, have concluded that nationally, water systems face a daunting task in continuing to ensure safe drinking water. While ASDWA is not able to calculate the actual definitive dollar figure between the need and available funding, others have indicated that a gap exists and may be quite large. ASDWA is prepared to work with Congress, EPA, the water utility industry, and other interested stakeholders to better refine the scope of the problem and the gap, and determine how best to meet these needs today and into the future.

STATE INFRASTRUCTURE

State Implementation Responsibilities

State drinking water programs also need adequate funding to ensure the effectiveness of their own "infrastructure" to carry out the myriad responsibilities of the SDWA. Since the SDWA Amendments of 1996, state program responsibilities have dramatically expanded to move beyond compliance at the tap to delineating and assessing the sources of all waters used for public water supplies, ensuring qualified operators at all water systems, defining and implementing water system capacity programs, creating a new DWSRF funding mechanism, and providing significantly more information and outreach to the public. These efforts are in addition to implementing Federal as well as state-specific drinking water regulations addressing specific contaminants.

Forty-nine of the 50 states currently have "primacy" or enforcement authority for the Federal SDWA. To achieve and maintain primacy, states must adopt rules that are no less stringent than the Federal requirements and have the ability to enforce these regulations. Although some states have requirements that are more stringent; for the most part, state drinking water programs are implementing and enforcing Federal requirements.

Collectively, state programs provide oversight, implementation assistance, and enforcement for approximately 169,000 public water systems nationwide. These systems range from large metropolitan municipalities to mobile home parks and schools. The vast majority (over 95 percent) of these systems are small, serving less than 3,300 people. Many of these systems require extensive technical assistance, training, and oversight.

Today, the regulatory landscape is significantly more complex than ever before. Since FY-97, state Public Water Supply Supervision (PWSS) dollars have had to stretch to cover development, implementation, and enforcement of numerous new regulations and programs such as those to address radionuclides, the microbial/disinfection byproducts rule cluster, unregulated contaminant monitoring, consumer confidence reports, capacity development, expanded operator certification requirements, source water assessment and delineation, and the DWSRF. States anticipate new regulations to be put in place this year to address radon, arsenic, and groundwater. Additionally, states are expected to implement revisions to the surface water treatment and lead and copper rules, public notification, and variance and exemption requirements. These requirements are in addition to the state program responsibilities for core activities such as compliance monitoring, data management, training, and enforcement for 88 currently regulated contaminants. States also are responsible for ensuring that public health is protected through preventive measures such as disease surveillance, risk communication, sanitary surveys, laboratory certification, permitting, and emergency response. States expect that their responsibilities will continue to expand as EPA promulgates additional regulations and reviews current regulations for modification (see attachment 1).

State Funding

The SDWA authorizes EPA to fund up to 75 percent of the costs to states to implement the drinking water program. Historically, however, states have contributed 65 percent of the funding while EPA has only contributed 35 percent. While the actual contributions for individual states vary, with some substantially over matching the Federal contribution, the bottom line is that adequate Federal funding for states to implement this Federal law has not historically been provided.

The current Federal PWSS grant provides $87.3 million for states to implement their programs (the remainder of the $93 million currently appropriated by Congress is directed to Indian Tribes). This level has not increased for states over the last five years (since FY-97), even though many of the new initiatives under the 1996 Amendments became effective almost immediately. The level funding of $87.3 million actually means that states have lost funding due to inflation and rising personnel costs, not to mention a FY-01 rescission that actually reduced state PWSS and DWSRF grants.

The 1996 Amendments also allowed states to take up to 31 percent set-asides from the DWSRF for program implementation. EPA, however, has never requested the full $1 billion per year authorization. DWSRF funds are also used to provide resources for new programs at the national level such as operator certification training reimbursement and unregulated contaminant monitoring which further reduces the corpus of the funds available for state use. In addition, many states have encountered significant barriers to fully accessing these funds including:

- the inability to obtain the needed one-to-one state match with new state revenue (for program implementation activities)
- the inability to shift resources directed to water system infrastructure improvements to state program implementation
- the unstable nature of the annual SRF funding allocation which is based on water system needs and is affected by the states' annual intended use plan for projects and set-asides
- the threat of up to 40 percent withholding for failure to implement certain program requirements such as capacity development and operator certification
- the unwillingness of state legislatures to approve new hires using "temporary" funding (the drinking water SRF is only authorized until 2003)

To supplement insufficient Federal funding, many states have turned to state general revenues and fees to maintain an adequate core program. These additional funds; however, have not be adequate to fully meet state program implementation costs.

ASDWA and EPA conducted a national resource gap analysis in early 1999 to estimate state resources needed to implement the drinking water program between 1999 and 2005. The analysis showed that in FY-99, the funding gap for states to implement the SDWA equaled $83 million and staffing needs fell short by 1,627 full time equivalents (FTEs). In FY-02, the gap will widen to $110 million and 1,906 FTEs; and by FY-05, the states' ability to implement the SDWA is expected to fall short by $207 million and 2,670 FTEs (see charts, page 7). The situation was exacerbated this year when the state PWSS and DWSRF dollars were subjected to the Agency's FY-01 rescission cuts, thus further reducing Federal funds to the states.

Even the U.S. General Accounting Office (GAO) has raised state funding concerns. In August 2000, GAO released a report to Congress entitled, *Drinking Water: Spending Constraints Could Affect States' Ability to Implement Increasing Program Requirements.* An extrapolation of their findings indicate that even if all states had been able to access the maximum 31 percent of DWSRF set-asides for program implementation and related activities, there would still be a funding gap beginning in FY-02. Since few states are able to access the full set-aside amounts, the funding gap is much greater than GAO's "optimum" estimate, and in fact, a gap already exists. The Report further notes that even those states that felt they were managing to keep up with the pace of implementing and enforcing the new statutory program requirements, at least for the short term, were only able to do so by "*. . . scaling back their drinking water programs, doing the minimum necessary to meet requirements, and setting formal or informal priorities among their responsibilities.*" This is a blueprint for a public health crisis.

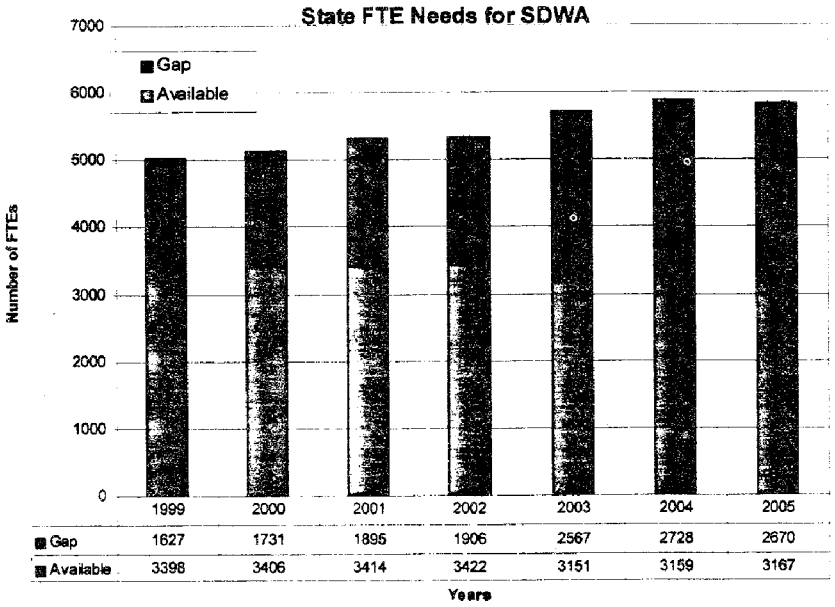
Conclusion

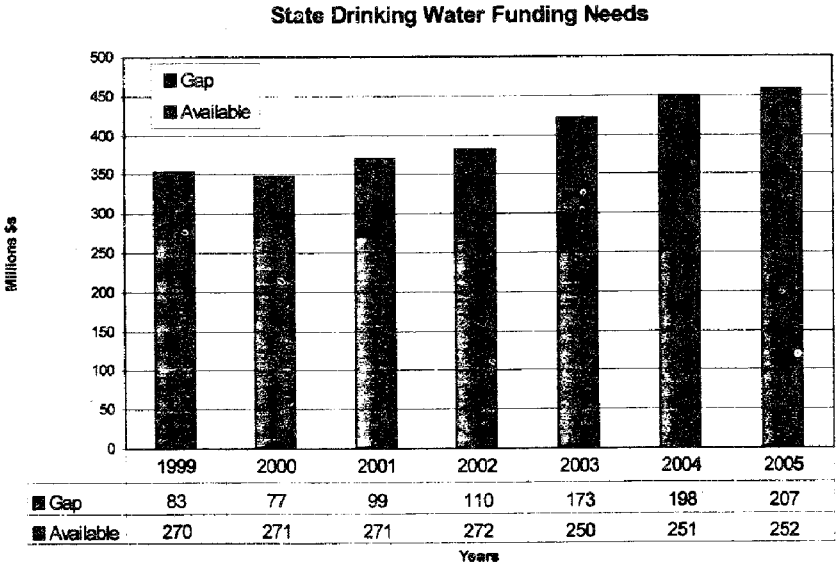
Adequate infrastructure funding needs for state SDWA program implementation is just as critical as adequate funding for water system infrastructure improvements. States are responsible for ensuring water system compliance and providing "infrastructure" for source water assessments; certified and trained water system operators; water system financial, technical, and managerial competency; public outreach and communication; and working directly with water systems to obtain and maintain compliance. As Congress moves forward to evaluate and find solutions for the water infrastructure funding gap attention must also be directed to the state program funding gap.

The goal of both of these efforts is protecting public health. It is about knowing that whenever you brush your teeth, bathe your child, or prepare your food, the water has been monitored and tested for contaminants; that the responsible operator has been trained and certified; and that the drinking water system has dem-

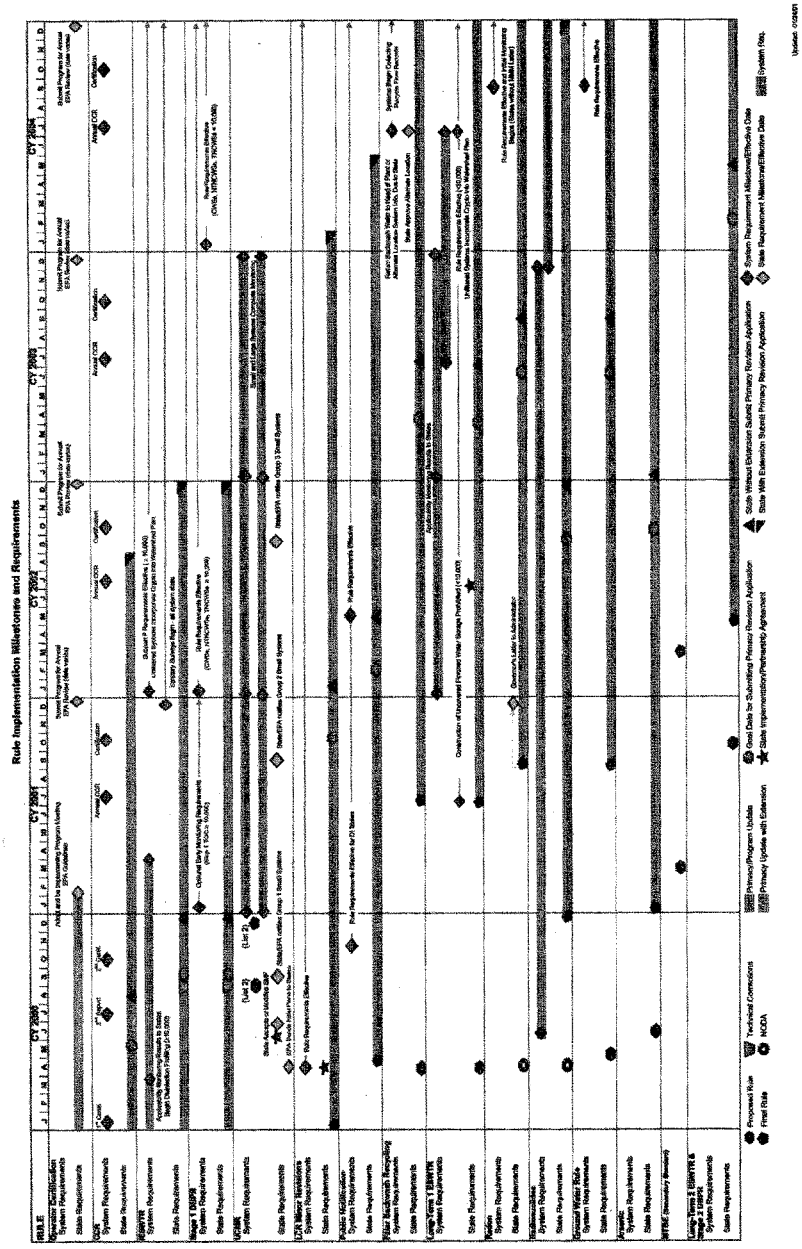
onstrated that it is technically, financially, and managerially capable of providing safe drinking water. In order to meet Congressional expectations and Federal regulations to successfully implement the SDWA, both states and water systems need increased funding to ensure a safe and dependable supply of drinking water today and for future generations.

1999 State/EPA Drinking Water Program Gap Analysis





Attachment 1



Mr. GILLMOR. Thank you, Mr. Hamill, and we will go to Mr. Erik Olson, from the Natural Resources Defense Council.

STATEMENT OF ERIK D. OLSON, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL

Mr. OLSON. Thank you, Mr. Chairman, and Mr. Pallone, and other colleagues in the room. I am with the Natural Resources Defense Council, and I also chair a coalition of about 300 public interest groups, including health, medical, and environmental and consumer groups called the Campaign for Safe and Affordable Drinking Water.

I wanted to specifically talk about the aging infrastructure of the United States. The water that I just poured for myself here came out of pipes, some of which date to the Lincoln Administration here in DC. We have an aging infrastructure across the United States—it is not just Washington—that has some serious problems.

We, the NRDC, issued a report a few years ago called, "Victorian Water Treatment Enters the 21st Century." What we found is that 90 percent of the utilities in the United States, the big utilities, continue to use World War I era drinking water treatment technology.

There may have been some upgrades, but the basic technology has not changed since World War I for the vast majority of big utilities. There clearly is a need for upgrading the infrastructure in the United States for drinking water, and obviously the need is going to cost a lot of money.

EPA's estimates are the $100 to $150 billion number that you have heard. There are estimates that the Water Infrastructure Network was made that may or may not be inflated suggest between half-a-trillion and a trillion dollars will need to be spent on this.

And we have heard a lot about arsenic, but let's put this in perspective. If we take the industry's own estimates of the total infrastructure needs, it is around $500 billion to $1 trillion. The arsenic rule itself would be less than 1 percent of that total need.

We think that it is a good investment. I don't want to spend a lot of time talking about arsenic issues, but I think it is important to respond to a couple of points that were made. One suggestion was that this was rushed through at the last minute. EPA actually took more than 20 years to put this rule together.

It took three statutory deadlines, court orders, and a series of extensions over a period from 1975 through 1991 for this to happen. It was not rushed through. EPA had over 30 meetings with the public to discuss this. There were over 1,000 comments submitted to the Agency.

This was not rushed through. The other significant point is that the costs for over 90 percent of the population that is affected by this is $3 a month or less. Let me repeat that. For over 90 percent of the people affected by this arsenic rule, the cost is going to be $3 a month or less.

Clearly for small systems, the costs may be higher. We think that the subject of the hearing today is fair in raising the issue of whether there is a need to have more Federal investment in infrastructure. We think the way to deal with the difficulties of a rel-

atively small population that is going to have significant affordability problems as a result of arsenic or any other rule is to have a meaningful Federal assistance for small systems.

Senator Reid and Senator Ensign have proposed a bill recently, S. 503, that would address targeted funding to small water systems. We think that is the answer, and not rolling back Federal standards. I think I will set a precedent by finishing a minute early.

[The prepared statement of Erik D. Olson follows:]

PREPARED STATEMENT OF ERIK D. OLSON, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL

INTRODUCTION

Good morning, I am Erik D. Olson, a Senior Attorney at the Natural Resources Defense Council (NRDC), a national non-profit public interest organization dedicated to protecting public health and the environment. We have over 450,000 members nationwide. We appreciate the opportunity to testify today on the need for improved drinking water infrastructure.

Drinking water treatment improvements begun at the turn of the 20th Century have advanced public health protection enormously, but much of the nation's drinking water infrastructure now is aging and outdated. We must modernize our water systems and safeguard the nation's water supplies from new and emerging contaminants. While EPA has estimated based on state figures that the costs of modernization will exceed $138 billion dollars, many in state and local government, in the water industry, and public health and environmental communities believe the true costs of this needed massive upgrade will be many times higher.

For example, a report published in March 2000 by a coalition of state and local governments, the water industry, and water professional trade associations called the Water Infrastructure Network (WIN) estimated that building these costs would be far greater than previous estimates. The WIN report found that building new and replacing old drinking water facilities will cost $480 billion dollars (including finance costs) over the next 20 years, and that about $1 *trillion* dollars is needed for drinking water capital, financing, and operation and maintenance over that period. The WIN investigators concluded that there is a funding gap of about $15 billion per year for drinking water infrastructure, operation, and maintenance.[1]

Most of these expenses are expected to be necessary irrespective of Safe Drinking Water Act regulatory requirements. Aging pipes in distribution systems, antiquated water treatment plants, water professionals' recognition of the need for infrastructure improvements, public demands for improved water quality, taste, odor, and reliability, growth, and other factors, all will drive this investment. While most of these costs will be incurred with or without new EPA regulations, it is clear that many improvements will be necessary in water treatment and distribution systems in order to meet modern demands for safer tap water. Major new public investments will be needed to fund this important national priority, and to significant research initiatives are necessary to support and guide this modernization.

It recently has been recognized that the United States and other developed nations' drinking water suppliers have begun a "Third Revolution" in drinking water provision. It is this revolution that the WIN report has recognized will require greater financing. These revolutions can be summarized as follows:

- **The "First Revolution,"** occurred when water was captured, stored, and channeled or piped for household drinking and other uses. This important advance began in pre-biblical times in the Middle East and was expanded and refined by the Roman Empire.
- **The "Second Revolution,"** took place when coagulation, sedimentation, filtration, and ultimately chlorination were installed by many major water suppliers, beginning in the 19th Century and with widespread adoption by the first World War. This Second Revolution was triggered by the steady march forward of medical science, the acceptance of the "germ theory" of disease, and the leadership of public health proponents such as John Snow who in 1849 linked the London cholera outbreaks to water supplies. This resulted in enormous public health benefits, and has hailed by the Centers for Disease Control and Preven-

[1] Water Infrastructure Network, *Clean and Safe Water for the 21st Century: A Renewed National Commitment to Water and Wastewater Infrastructure* (2000).

tion (CDC) as one of the ten greatest triumphs of public health protection of the 20th Century.

- **The "Third Revolution"** in drinking water provision now has been launched by utilities in the U.S. and Europe. This revolution is the culmination and synthesis of the "multiple barriers" approach to preventing disease from drinking water that had long been advocated by Abel Wolman and other 20th Century water industry leaders. In essence, the Third Revolution consists of a four-pronged approach to modern drinking water protection:
  (1) vigorous measures to *prevent* contamination of drinking water, through source water protection;
  (2) adoption of modern, highly effective, and broad-spectrum water treatment technologies that can remove a wide array of emerging contaminants simultaneously, such as membranes, ultraviolet radiation disinfection, and granular activated carbon with ozone disinfection;
  (3) the modernization of aging, sometimes century- or more-old water distribution systems that often contain lead, are a frequent cause of main breaks, can harbor microbial growth, and, according to CDC, are a significant cause of waterborne disease outbreaks; and,
  (4) The establishment and use of an efficient and open information infrastructure and public involvement approach in which utilities and their government regulators use advanced methods to monitor, assess, communicate, and engage in a dialogue with consumers regarding drinking water source water threats, and tap water conditions, contaminants, and quality.

Many of America's drinking water utilities are endangering public health by providing Victorian-era service to the most technologically advanced nation on earth. In 1994, NRDC issued a report entitled *Victorian Water Treatment Enters the 21st Century* that provides an analysis of the protection and treatment techniques used by the nation's largest drinking water systems—those serving over 25,000 people. We found that millions of Americans are needlessly exposed to hazardous chemicals and microorganisms because drinking water source protection and treatment systems are inadequate. Adding to the problem is that some drinking water utilities are using valuable resources and energy attempting to weaken health standards instead of improving badly outdated treatment and distribution systems. Despite decades of technological advancement, as most Americans are now on the Information Superhighway, too many American water utilities are traveling on the technological dirt road. We found that:

1. **The vast majority of large water suppliers do little or nothing to prevent contamination of the watershed or groundwater that they rely upon for source water.** Most large surface water systems have failed to adopt watershed protections such as watershed land ownership, and stream or reservoir buffers to prevent runoff or discharges of chemically or microbiologically polluted water into their source water. Many groundwater-supplied systems also have failed to adopt wellhead protection programs to prevent contamination of their wells.
2. **Despite widespread chemical contamination of drinking water, over 90% of large water utilities have failed to install modern water treatment technologies developed after World War I to remove chemical contaminants.** Less than 10% of large Community Water Systems are using modern treatment technologies like Granular Activated Carbon or ozone to reduce the risks of chemical contamination and disinfection byproducts.
3. **Aged, crumbling distribution systems are neglected, and are often the cause of waterborne disease outbreaks.** In many cases, the pipes that bring us our water are 100 or more years old and are cracking or crumbling. These aged pipes often harbor microbial growth, and are subject to catastrophic breakage. Broken or "cross connected" pipes that allow contaminated water to seep into the water system have often been linked by the Centers for Disease Control to waterborne disease outbreaks, yet the average water pipe will be over a century old before it is replaced by a large water system. Many of these old pipes also contain lead, and leach this dangerous toxin into drinking water.
4. **Effective source water protection and water treatment are both technically and financially feasible.** Safe Drinking Water Act standards can be met and exceeded using techniques that, for the most part, were invented before 1930. These techniques have been proven effective, and are widely used in other industrialized countries. The few American cities that have installed modern treatment systems have shown that safe drinking water can be provided for a reasonable price.

5. **The Safe Drinking Water Act and Clean Water Act must be made stronger to protect our Drinking Water Supplies.** The Safe Drinking Water Act (SDWA)—which sets standards for the quality of water coming from your tap—and Clean Water Act (CWA)—which sets standards for discharges and runoff into surface waters—need to be better integrated. Congress should enact provisions designed to ensure coordinated public health and environmental protection. Necessary legislative changes should include not only increased funding to help systems pay for improvements, but also strengthened provisions for watershed and groundwater protection, tougher drinking water standards, and beefed-up enforcement authority for EPA to ensure that standards are met.

It's time to modernize systems and make the changes necessary to provide safe drinking water. Among the larger challenges now facing the water industry include:

1. Arsenic.

The National Academy of Sciences, in a report issued in 1999, recognized that arsenic in tap water poses a significant public health risk in the United States, and that EPA's outdated arsenic in tap water standard set in 1942 "does not achieve EPA's goal for public health protection and, therefore, requires downward revision as promptly as possible."[2] The Academy concluded that drinking water containing arsenic at the 50 parts per billion (ppb) level allowed by the outdated current standard "could easily" pose a total cancer risk of 1 in 100—about 100 times higher than EPA would ever allow for tap water under other rules. For the sake of comparison, the cancer risk allowed by this arsenic standard is about 10,000 times higher than EPA may permit in food under the Food Quality Protection Act of 1996, which Congress passed unanimously. It also is a cancer risk 100 times greater than EPA policy has allowed for drinking water contaminants for over two decades. The Academy also found that there was insufficient basis to find a threshold for arsenic carcinogenesis, and that there was no credible evidence that arsenic was a necessary nutrient for humans

Moreover, the Academy discussed a litany of other adverse non-cancer health effects from arsenic in tap water, including cardiovascular effects, nervous system problems, skin lesions, and possible reproductive and other effects. Several peer-reviewed, published studies completed in the year since the Academy's report have reinforced the conclusion that a much lower standard is needed for arsenic in tap water.

EPA in January 2001 published a rule to reduce allowable arsenic levels from 50 ppb down to 10 ppb—a level that still presents a cancer risk significantly higher than the 1 in 10,000 cancer risk that EPA traditionally allows in tap water. NRDC and many public health professionals and organizations believe that EPA should set the standard at 3 ppb, the level that EPA says is as close to the health goal (Maximum Contaminant Level Goal) as is feasible, considering costs, and is affordable.[3] We are profoundly disappointed in the recent EPA announcement that the Agency intends to yet again reopen this decades-long debate, and to withdraw the new arsenic standard. This action is scientifically unjustified, unlawful, and bad public health policy. We believe that to the extent that action is needed on arsenic, the need is to assure that small, needy systems will have the resources to clean arsenic out of their water supplies. We therefore are generally supportive of the Reid-Ensign small system infrastructure assistance legislation (S. 503), which with certain modest modifications would be an effective tool to help needy small systems to pay for arsenic cleanup and other needed upgrades.

2. Radon

Radon in tap water poses significant cancer risks to over 40 million Americans. Another National Academy of Sciences report, issued last year, found that radon is known to cause cancer, and concluded that a multimedia mitigation strategy made

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[2] National Research Council, *Arsenic in Drinking Water,* p. 9 (1999)

[3] The underlying science supports an arsenic standard lower than 3ppb. EPA must consider that many Americans also have unavoidable exposure to arsenic in their food, so relatively low levels of arsenic in tap water can cause safety levels to be exceeded. A health-protective tap water arsenic standard should allow a maximum lifetime cancer risk no greater than that EPA has traditionally accepted (a level presenting a lifetime cancer risk from 1 in 1,000,000 to at most 1 in 10,000 for vulnerable or highly exposed individuals). This would require EPA to set a drinking water standard well below the current 50 ppb standard—in the range of 1 ppb. Limitations in the analytical techniques widely used for measuring arsenic in water, however, would likely necessitate a standard of 3 ppb, rather than a standard of 1 ppb, because reliably quantifying arsenic at levels below this would be difficult using current standard lab equipment and practices. Based on an extrapolation of NAS's risk estimates, even a relatively strict arsenic standard of 3 ppb could pose a fatal cancer risk several times higher risk than EPA has traditionally accepted in drinking water.

the most sense in dealing with the radon problem. The Academy found that while radon can be present in tap water at levels posing substantial risks, *on average nationally* the vast majority of radon risk comes from radon seepage into homes from soils.

Congress enacted a provision in the 1996 Safe Drinking Water Act Amendments that provides that states or water systems may adopt Multimedia Mitigation (MMM) programs for radon that focus on the highest indoor radon risks. States and public water systems with approved MMM programs need not assure compliance with the Maximum Contaminant Level for radon in tap water, and can instead meet a less stringent "Alternative Maximum Contaminant Level" (AMCL). The theory is that states will provide greater public health benefits by reducing overall indoor radon levels through a MMM program than would be achievable using only the MCL for tap water. EPA's proposed rule for implementing this provision, while in NRDC's view suffering from certain problems of lack of clarity to assure that the MMM programs actually will achieve the public health benefits billed, if improved could prove an important step toward protecting public health from radon. This rule was supposed to be finalized last year, and is now legally overdue.

3. Cryptosporidium, Other Microbial Risks, and Disinfection Byproducts

EPA has engaged in a lengthy, multi-stage process of negotiations over the past eight years with the water industry, states, local government, water treatment trade associations, public health groups, and environmental organizations in an effort to tackle the complex issue of microbial contaminants and disinfection byproducts. These negotiations have wrestled with how to control the parasite *Cryptosporidium* (which sickened over 400,000 people and killed over 100 in Milwaukee in 1993, and has lead to many smaller outbreaks since then). In addition, the issue of how to deal with risks introduced or exacerbated in the water distribution system was debated.

These negotiations have sought to produce an agreement that would improve protection from the class of contaminants known as disinfection byproducts, which are created when chemicals such as chlorine are used to disinfect water, but create unwanted byproducts as a result of chemical reactions between the disinfectant and organic matter in the water, creating a potentially toxic soup of chemicals that have been linked in both animal studies and epidemiological studies of people to certain forms of cancer and to reproductive problems such as miscarriages and certain birth defects.

After years of serious negotiations over the "Stage 2" disinfection byproduct rules, and the "Long Term 2" rule for surface water treatment, in late 2000 we finally achieved a breakthrough in the negotiations, and an agreement was reached. We hope that EPA will promptly follow through by issuing these rules in a timely manner. In addition, EPA is now legally overdue in issuing the Long Term 2 Enhanced Surface Water Treatment Rule and the Filter Backwash Rule.

4. Groundwater Rule.

EPA also was charged by Congress in the 1996 amendments with issuing a rule requiring that groundwater supplied public water systems disinfect their drinking water, unless such disinfection were to be found unnecessary. EPA recently proposed a groundwater rule, upon which the public comment period recently closed. NRDC believes that the proposal includes several important measures that may improve public health protection, but also has several fundamental flaws that will need to be fixed if the rule is not to become bogged down at the state level.[4]

The 1996 SDWA Amendments should help to encourage better health protection, and EPA should be commended for the generally open public process used to date in implementing most of this law. There are several other important challenges:

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[4] Among the major flaws of the proposed rule are: (1) Disinfection has become the last alternative. EPA has chosen to move from a position of requiring disinfection of ground water systems, with exceptions (where it can be shown that it is not necessary), to a position of not disinfecting a ground water system until almost all other options have been exhaused. (2) States do not have to set time limits for ground water systems to fix problems. (3) Ground water systems will not have to test for both pathogens and viruses. (4) EPA does not require sanitary surveys to be done frequently enough to find problems in time to correct them. (5) States may design Sanitary Surveys that vary widely in quality and oversight. (6) States are not required to have a cross connection control Program. (7) EPA does not establish a baseline list of significant deficiencies which states may exceed. (8) EPA should require public participation and Right To Know throughout the Ground Water Rule (9) The SWAP Should Be More Tied Into the Ground Water Rule. Though EPA advises States to take the SWAP process into account, we feel that EPA could do much more to formally tie source water assessments and the sanitary surveys together.

- **The Need for a National Dialogue on How to Fund the Massive Funding Gap for Drinking Water Infrastructure Improvement and Modernization.** The massive shortfall in resources available for water systems to upgrade, replace, and expand their infrastructure is a problem that must be addressed. NRDC believes there is a need for a serious national dialogue on how this funding gap will be addressed. While certainly federal funding will not itself plug this massive hole, the time has come for a serious discussion of what the respective federal, state, and local governmental roles are, and what role private industry might play in this overhaul. We believe that there is a need for federal leadership on this issue, and for significantly increased federal resources to be dedicated to this crucially important national need.
- **An Assured Funding Mechanism, Such as a Modest, Dedicated Water Fee, Allocated to a Trust Fund Without Further Appropriation, is Needed to Support Long-Term Drinking Water Research and to Address High Priority Health Risks for Small Systems.** As part of a series of discussions with the water industry and others, NRDC and many in the public interest community (and frankly, some in the industry) have come to the conclusion that Congress should enact a modest water fee that would support a long-term guarantee of adequate research funding for drinking water. The funds raised should be set aside in a trust fund that is available without need for further appropriations, so that the research agenda is not buffeted by the ever-changing winds of the annual appropriations process. In addition, we believe that those funds should be made available for direct funding of the most substantial public health threats posed by drinking water systems, such as grants for emergency repairs, treatment, or consolidation of small systems with serious health standard violations.
- **A "Polluter Pays" Mechanism is Needed** to assure that consumers do not end up footing the bill for expensive monitoring and treatment when polluters contaminate source water. We recommend that the SDWA be amended (or that separate legislation be enacted) to enable public water systems or consumers to recover the full costs that source water pollution imposes on them in the form of increased monitoring, treatment, and other costs.
- **Appropriations Acts and a Court Decision Have Effectively Eliminated the Drinking Water State Revolving Fund (DWSRF) Set-Aside for Health Effects Research, Undercutting Funding Assurances.** This Committee and the 1996 SDWA Amendments adopted a provision in the DWSRF assuring a $10 million set-aside for health effects research, SDWA § 1453(n). The appropriations committees, however, have included provisions purporting to negate this set-aside in the last several appropriations acts. Unfortunately, a court decision—reached with the support of EPA—effectively found that the appropriations language overrode the set-aside in the Act. Thus, this Committee's effort to assure long-term funding of this research has been nullified by subsequent Congressional action. This Committee should fight for the full set-aside for this research.
- **A Forum for Open Public Research Planning and Priority Setting is Necessary.** EPA should formalize an open public process for developing its drinking water research plans, similar to the highly successful Microbial and Disinfection Byproducts Council, but with additional public comment and openness assured. This is a far more effective approach than the largely closed-door process EPA used in planning its arsenic research, for example.
- **Assuring More Effective Public Right-to-Know, Better Source Protection, More Affordable Advanced Treatment Technologies, Better Analytical Methods.** EPA needs to conduct further research and funding, and to take regulatory and other steps to build better public understanding of tap water challenges. The EPA right-to-know report rules issued in 1998 that required the annual reports to be issued beginning in 1999, are a major step forward. It is critical, however, that methods be developed to improve public understanding of these complex issues. Other important areas of research include: investigations into ways in which source water protection can be made a more effective tool for drinking water protection; research on how modern treatment methods can be improved and costs decreased; development of better, cheaper, and easier analytical methods; and improved approaches to assuring small system compliance through restructuring or treatment upgrades.
- **Research to Support Treatment, Occurrence, and Related Issues for Microbes, Disinfection Byproducts, Groundwater, and Distribution System Risks.** New standards will be issued over the next several years for many contaminants, yet EPA resources for research on the availability of treatment and on occurrence are inadequate. These rules will be determinative as to

whether the "Third Revolution" in drinking water protection—involving true multiple barriers to contamination in the form of source water protection, advanced "leap frog" treatment technologies, and modern distribution system management—will occur in the early 21st Century, or whether the nation's aging and often outdated water supplies will continue to inadequately address these emerging problems and to deteriorate. A stronger research commitment is needed.

- **Compliance Problems that Continue to Plague the Drinking Water Program.** Widespread violations of the SDWA, and inadequate state and EPA enforcement against even the most recalcitrant violators continue to be a major problem. Improved data collection and management, and a stronger commitment to enforcement, are crucial to assist EPA, states, and the public to address these issues. Compliance problems and data collection and management failures have been catalogued in a *USA Today* series published in October, 1998, in an EPA audit discussed in a front page *USA Today* article in late 1999, and in EPA's own 1998 and 1999 Annual Compliance Reports. The EPA drinking water program and states need to upgrade their management systems and programs. Routine audits of federally-funded state programs are a crucial part of this effort. The new SDWA small system viability provisions could begin to reduce these problems, but substantial additional resources and research are needed to assure that these programs bear fruit. Additionally, small system technical assistance should be granted on a competitive basis, based upon the best available research, so that these assistance providers demonstrate that they can deliver accurate technical assistance to small systems in a cost-efficient manner. We oppose "earmarked" assistance funding that is non-competitive, as it often fails to allocate resources so as to maximize health benefits.
- **Improved Data Management, Reporting, and A Comprehensive National Contaminant Occurrence Database.** EPA must work with states and the public to develop a fully integrated and fully automated joint data management system for the drinking water program. Included in this system should be accurate, reliable and real-time compliance, water quality, enforcement, and other key information. In addition, an effective National Contaminant Occurrence Database (NCOD) is needed that will require compatible data systems across states, electronic data reporting to EPA by states and testing labs, and sufficient will to ensure that national contaminant reporting is complete and timely. A well-organized NCOD will provide an essential national right-to-know counterpart to the consumer confidence or "right to know" reports that water utilities provide directly to their customers.
- **Better Integration of Clean Water Act and SDWA Programs.** While modest progress and much discussion have occurred in the effort to better integrate the Clean Water Act and SDWA programs, in fact we have a long way to go at the state and federal levels. It is an unfortunate historical and jurisdictional byproduct that hampers full integration of these programs and impedes progress. For example, EPA's source water assessments and protection programs, filtration avoidance programs, the groundwater rule, wellhead protection programs, sole source aquifer programs, and UIC programs under the SDWA, need to be better integrated with the CWA §§ 319, 305(b), and Total Maximum Daily Load programs have developed largely independent of each other. The Unified Watershed Assessment effort is beginning to make some headway in integrating these diverse programs, but a more aggressive effort would be helpful.
- **Meaningful Source Water Protection Authority.** Public water systems, states, EPA, and the public need to have the ability to protect, through regulatory mechanisms or other mechanisms as necessary, source waters. The 1996 SDWA Amendments largely punted on this issue, but creeping development and pollution are contaminating many source waters; strong legal authorities to prevent such contamination are needed.
- **Better Leveraging of Other Federal Agency Resources.** The federal government has a wealth of expertise and resources directly relevant to EPA's drinking water program that should be better integrated into EPA's efforts. For example, the Centers for Disease Control, Agency for Toxic Substances Disease Registry, and many of the institutes at the National Institutes of Health, including the National Cancer Institute, the National Institute of Environmental Health Sciences, the National Institute of Allergy and Infectious Disease, National Institute of Child Health and Human Development, National Heart, Lung, and Blood Institute, National Institute of Neurological Disorders and Stroke, and many other institutes and agencies conduct research of which EPA often is unaware. A better program is urgently needed to assure more information sharing and collaboration among the federal agencies. Some successful ex-

amples of such collaboration can be noted—such as the waterborne disease estimation research being jointly spearheaded by EPA and CDC, and the joint work on disinfection byproducts by EPA, ATSDR, and NTP. Perhaps more often, however, there is little or no collaboration among many of the agencies in priority setting and in conducting research. The lack of coordination can result in serious lost opportunities, and potentially in duplication of effort.

- **Programs to Protect Consumers of Small Systems and Private Wells.** The United States may be moving towards a two-tiered water supply: higher quality water for consumers in larger cities, and lower quality water in small town and rural America. America's small water systems are often having significant difficulty complying with EPA's basic health standards, and as additional rules (such as arsenic and the groundwater rules) are issued, these difficulties will only increase. There is a need to develop a stronger program to assist and fund the restructuring, technical assistance, regionalization, consolidation, package treatment technology, and other approaches that will have to be adopted to assure that small water system customers receive safe and affordable drinking water. There also are 30 to 40 million Americans who get their water primarily from private wells not covered by the SDWA at all. Monitoring and protection of the quality of water in these wells is often spotty to nonexistent. A national dialogue is needed to discuss how these tens of millions of Americans' health can be better protected from contamination of these often highly vulnerable supplies.

CONCLUSION

In conclusion, NRDC strongly believes that there is an urgent need for additional federal funding for drinking water infrastructure to assure water system upgrades needed to protect public health. This process will not be simple, nor will it be cheap. But this effort is necessary to protect the health and well being of all Americans for generations to come, and to achieve public demands for a reliable supply of safe, good-tasting tap water. Only a long-term stable source of adequate funding will assure that this is achieved.

Mr. GILLMOR. Let me say that the subcommittee commends you. Let me ask Mr. Neukrug a couple of questions. Mr. Neukrug, can you tell us the impact on public health of deteriorating, and breaking pipes, and the type of contamination that can occur?

Mr. NEUKRUG. Well, everything that we are talking about here in terms of the infrastructure issue deals with public health, and whether the source water protection, or the treatment process, or the distribution process itself will involve public health.

Mr. GILLMOR. We are once again facing a vote. So let me defer any questions and I will go to Mr. Pallone, but I might ask that we may want to submit some questions to the members of the panel in writing, and hopefully if you could respond to some of those we would appreciate it. Mr. Pallone.

Mr. PALLONE. Thank you, Mr. Chairman. I know that we are running out of time. I wanted to ask each of the panel the same questions and I guess we could try to run through it faster, and if not, you can do a written response. And that is with respect to drinking water only, and not waste water.

If each of you would indicate first the total current funding needs for drinking water infrastructure; and, second, the total drinking water infrastructure needs over the next 20 years; and third, the total annualized funding need for drinking water infrastructure. If you can do that quickly, fine, and if not, you can submit it to me in writing with the permission of the Chair.

But the other thing overlying that is that I obviously feel very strongly that we have a great need, and I know that some have suggested that maybe the need isn't as great as we think, but that there is a great need for increased Federal funding here.

And obviously based on what Governor Whitman said, the budget that the President is going to submit is I guess level funding. That is what she clearly indicated, and I kind of wanted to find out what is going to happen.

In other words, if there isn't a major increase in Federal funding, what is that going to mean. Is it going to mean that these projects don't get done? Does it mean that they will be done, but that the ratepayer is going to pay for it? Do the best that you can, and we will go through the panel here.

And if you can't answer now quickly, then you can also send me something in writing.

Mr. BEIDER. My quick answer to the question of how big the needs are is that it is very uncertain, and I will elaborate on that in writing.

[The following was received for the record:]

CBO does not have an estimate of total national needs for investment in drinking water infrastructure over the next 20 years. Indeed, as indicated in my statement, CBO does not believe that the information currently available allows a reliable point estimate of those needs. In light of current uncertainties about the necessary rates for replacing pipes and equipment, possible efficiency gains in construction and rehabilitation methods, future standards for the quality of drinking water, and other important factors, 20-year needs would be more appropriately estimated by a wide interval. The difference between the low end and high end of such an interval could be $10 billion or more per year.

Current needs should be more readily measurable, by the kinds of bottom-up survey methods EPA uses in its Drinking Water Infrastructure Needs Survey. The results of the second such survey, recently released, estimate current needs to be $102.5 billion (measured in January 1999 dollars). However, because CBO's study does not focus on current needs, my colleagues and I have not investigated the details of EPA's survey and cannot assess that estimate.

In the absence of a major increase in federal funding, drinking water systems would manage their investment needs using a combination of three approaches: raising funds from nonfederal sources—principally ratepayers; deferring some investments; and finding additional ways to reduce the costs of investment projects, operations, and maintenance. How much of each approach would be used is unknown at this point, but the mix would undoubtedly vary from one system to another. CBO understands that the American Water Works Association will soon issue a report that summarizes detailed analyses of the investment needs of 20 systems around the country and identifies how much rates would have to rise to meet those needs. That report could make a significant contribution to our understanding of the possible implications of level federal funding.

Mr. PALLONE. Thank you.

Mr. NEUKRUG. I will go further and say it is enormous, and I will follow that up in writing.

Ms INGRAM. We will respond in writing.

Ms. BEECHER. I think again the need is substantial, and the gap is a separate issue, but I am optimistic though, and I think actually the benefit we have had by bringing this issue to light is that I think we have got now great minds and great energy working on it.

And it will take multiple approaches to deal with it, particularly when it comes to the most disadvantaged customers and systems, and obviously there needs to be particular attention there, and that should be the priority for funding.

But there are going to be choices here, and I think communities are going to have to think about those seriously, and I think we need to devote the resources toward need though, and be careful not to subsidize activities that frankly the market will take care of,

or that we don't need to subsidize. For example, lawn watering, versus basic human needs, and I think we need to pay attention to those priorities.

Mr. PALLONE. Okay.

Mr. HAMILL. The current needs are well represented we feel by the EPA needs assessment survey, and we think that does a good job. Future needs are much harder, and I think we will respond separately to that, but I think for a number of reasons, probably as much as anything with future rules that will come out, are not as well represented by that process.

Mr. PALLONE. I think I would like for maybe one of you, and maybe Mr. Olson, just the whole question of if there isn't a significant increase in Federal funds, which I guess you are not going to get from this administration, what does that mean? Does that mean that these things don't get done?

Mr. OLSON. Well, we are certainly very concerned about the possibility that if there isn't increased Federal funding that some projects will not get done, particularly in communities that have high affordability problems. Often there are going to be small communities. So we certainly would like to see increased Federal funding, and particularly funding targeted at communities that especially need it.

And in terms of your first questions about current, and over the next 20 years in annualized funding, we would just rely on the studies that have been done by others. So we don't have an independent analysis of that.

Mr. PALLONE. Okay. I think we only have about 4 minutes before the vote.

Mr. GILLMOR. I want to thank all of you for testifying, and you have been very helpful, and we appreciate it. Thank you.

[Whereupon, at 5 p.m., the subcommittee adjourned.]

[Additional material submitted for the record follows:]

ONE HUNDRED SEVENTH CONGRESS

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DAVID V. MARVENTANO, STAFF DIRECTOR

U.S. House of Representatives
Committee on Energy and Commerce
Room 2125, Rayburn House Office Building
Washington, DC 20515–6115

March 28, 2001

The Honorable Christine Todd Whitman
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Administrator Whitman:

The final National Primary Drinking Water Regulation for arsenic was properly and lawfully published in the *Federal Register* on January 22, 2001. It was to become effective on March 23, 2001. However, on Tuesday, March 20, 2001, you announced that the Environmental Protection Agency (EPA) will propose to withdraw the new, improved arsenic standard for drinking water. Your decision leaves the current decades old standard of 50 ppb in place. This standard is five times less protective than the European Union standard and that recommended by the World Health Organization.

A March 1999 report by the National Academy of Sciences concluded that the current standard does not achieve EPA's goal of protecting public health and should be lowered as soon as possible.

The new standard has been under development for many years and Congress mandated its issuance in the Safe Drinking Water Act Amendments of 1996 as follows:

> "(v) FINAL REGULATIONS.-- Not later than January 1, 2001, after notice and opportunity for public comment, the Administrator shall promulgate a national primary drinking water regulation for arsenic."

The final conference report on the VA-HUD Appropriations bill for Fiscal Year 2001 included a six month extension of the requirement to promulgate a new arsenic drinking water standard as follows:

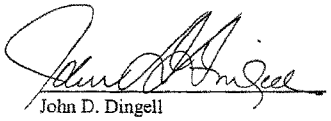
> "That notwithstanding section 1412(b)(12)(A)(v) of the Safe Drinking Water Act, as amended, the Administrator shall promulgate a national primary drinking water regulation for arsenic not later than June 22, 2001."

However, you should be aware that neither authorizing Committee in the House or Senate approved the extension. Further, neither of the individual HUD-VA Appropriations bills considered by and passed by the House and Senate, respectively, contained an extension of time for the arsenic rule.

Serious questions have been raised about the legality of your recent announcement, including its effect on the intent of Congress to have a new protective drinking water standard for arsenic. Therefore, we request answers to the attached questions no later than Tuesday, April 13, 2001, to better understand the EPA's intentions and process.

Thank you for your cooperation. If you have any questions, please contact us or have your staff contact Dick Frandsen, Minority Counsel, at 202-225-3641.

Sincerely,



John D. Dingell
Ranking Member
Committee on Energy and Commerce

Frank Pallone, Jr.
Ranking Member
Subcommittee on Environment and Hazardous Materials

cc: The Honorable W. J. "Billy" Tauzin, Chairman
Committee on Energy and Commerce

The Honorable Paul E. Gillmor, Ranking Member
Subcommittee on Environment and Hazardous Materials

QUESTIONS FOR ADMINISTRATOR WHITMAN
ENVIRONMENTAL PROTECTION AGENCY

1. On March 23, 2001, the EPA issued a final rule delaying the effective date of the arsenic rule to May 22, 2001, without any opportunity for public comment. The Agency stated that "seeking public comment is impracticable, unnecessary, and contrary to the public interest." The public interest, as specified in the Drinking Water Act Amendments of 1996, is served by having a new and improved drinking water standard for arsenic go into effect this Spring. Please explain why it is in the public's interest and good cause exists to delay the effective date of the new arsenic standard for the purpose of withdrawing the rule when the EPA is facing a Congressional deadline of June 22, 2001. Please provide any legal analysis or opinion within the possession of the EPA which discusses the legality of a 60-day delay of the effective date of the arsenic rule published on January 22, 2001.

2. The Safe Drinking Water Act requires that the Maximum Contaminant Level (MCL) be set as close as feasible to the Maximum Contaminant Level Goal (MCLG). The MCLG – which is the public health goal for arsenic – is zero. The EPA also found that it is technically feasible to set the level at 3 ppb.

   For the contaminant arsenic, EPA for the first time proposed to set the drinking water standard higher than the technically feasible level. The EPA proposed revision to the arsenic drinking water standard was 5 ppb. According to the EPA, water supplies affecting twenty-two and one-half million people are affected by arsenic levels above 5 ppb.

   Ultimately, in January of this year, after reviewing all comments, the EPA exercised its discretionary authority under Section 1412(b)(6) of the Safe Drinking Water Act to double the MCL to 10 ppb. EPA also had taken comment on a proposal to set an even less stringent level of 20 ppb but concluded it would neither be warranted or legal. In the final rule, the EPA stated as follows:

   > "EPA does not believe an MCL less stringent than 10 ppb is warranted from the standpoint of benefit-cost comparison." (p. 7022)
   >
   > "Thus, we do not believe that an MCL of 20 ppb would 'maximize health risk reduction benefits' as required for an MCL established pursuant to Section 1412(b)(6)." (p. 7022)

   Please specify and provide the precise information or analyses on which you have relied to conclude that a drinking water standard that is less stringent than 10 ppb is warranted and legal under the Safe Drinking Water Act.

3. When did the arsenic rule published on January 22, 2001, become subject to judicial review under the Safe Drinking Water Act?

4. In your capacity as Administrator, do you believe that you are under a legal obligation to promulgate a national primary drinking water regulation for arsenic no later than June 22, 2001? If not, please provide a detailed explanation of why not and all legal analyses or opinions in the possession of the Agency which discuss the issue.

5. Do you believe the Congressional mandate set forth in Section 1412(b)(12)(A)(v) of the Safe Drinking Water Act as modified by the VA-HUD 2001 Appropriations Act (P.L. 106-377) has been met? If so, please explain the basis for your conclusion. If not, please describe whether you intend to have a new arsenic standard promulgated by June 22, 2001.

6. Did any of the following major associations representing drinking water suppliers legally challenge the January 22 arsenic rule: (a) American Metropolitan Water Association; (b) American Water Works Association; (c) National Association of Water Companies; (d) National Rural Water Association; and (e) Association of California Water Agencies.

7. (a) Please identify any persons who were not full-time government employees or Members of Congress that you or others involved in the decision-making process on the arsenic rule met with subsequent to January 22, 2001, to discuss the published arsenic in drinking water rule.

   (b) Please identify any persons who worked in the Office of Management and Budget or other offices within the Executive Office of the President that you met with subsequent to January 22, 2001, to discuss the published arsenic in drinking water rule.

8. Please provide a copy of any correspondence or documents (except those submitted by Members of Congress) in the possession of the EPA that were received subsequent to January 22, 2001, that discuss in any manner the arsenic in drinking water rule.

9. In its January 22 rule, the EPA stated that it "is committed to issuing the arsenic regulation based on best available science and believes the research currently available is sufficient to do so." In your speech to the Association of Metropolitan Water Agencies you were quoted as saying "When we make a decision on arsenic, it will be based on sound science and solid analysis." This clearly implies that the conclusion's reached by the EPA's Office of Drinking Water for the January 22, 2001, rule were not based on the best available science.

   Please identify scientific studies that were available on January 22, 2001, that were not properly considered by the professional staff of the EPA. Have there been any new

scientific studies released since January 22, 2001, that fail to support or undermine the scientific conclusions reached in the arsenic rule published on January 22, 2001? If so, please provide them.

10. Are there any states which have proposed or finalized a different maximum contaminant level than 50 ppb for arsenic in drinking water? If so, please identify them and the proposed or final standard.

11. When the EPA professional staff briefed the Committee on Energy and Commerce staff on January 19, 2001, with respect to the new arsenic rule, they indicated that every comment had been read and reviewed at least three times and that the analysis behind the arsenic rule was "solid and sound." Do you have any information which indicates that these statements made by the professional staff in the Office of Drinking Water were misleading or inaccurate? If so, please provide any such information.

12. During an interview on CNN's "Inside Politics" on Wednesday, March 21, 2001, with respect to the arsenic rule, you stated that the EPA staff "haven't done the kind of economic analysis that we are also required to do by law that would look at what the impact is going to be on people." However, on February 4, 2001, the General Accounting Office notified Congress that with respect to the rule updating the national primary drinking water regulation for arsenic that the EPA had performed a "cost benefit analysis" for the final rule and had complied with the requirements of the Regulatory Flexibility Act, the Unfunded Mandates Reform Act of 1995, and the Administrative Procedures Act. Please be specific and explain the basis for your public statement criticizing the Office of Drinking Water for not doing the kind of economic analysis required by law. Further, please specify what "law" you were making reference to.

13. Do you agree that the arsenic rule published in the *Federal Register* on January 22, 2001, contains on pp. 7021 and 7022 a comparison of benefits and costs which are further described in Section III E of the preamble and in the supporting Economic Analysis? Were you aware that the rule considered and incorporated these extensive analyses of costs and benefits during your interview with CNN?

14. The January 22 rule established the compliance date for the new arsenic MCL at five years from the date of promulgation of the standard. Many water systems had begun their planning to achieve the new standard. Your announcement that EPA would propose to withdraw the rule creates confusion and uncertainty for drinking water providers who are likely to freeze any compliance activities at this time. Will you commit that the compliance date for any new arsenic standard will not extend past the Spring of 2006?

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ONE HUNDRED SEVENTH CONGRESS

U.S. House of Representatives
Committee on Energy and Commerce
Washington, DC 20515–6115

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MICHAEL F. DOYLE, PENNSYLVANIA
CHRISTOPHER JOHN, LOUISIANA
JANE HARMAN, CALIFORNIA

DAVID V. MARVENTANO, STAFF DIRECTOR

May 2, 2001

The Honorable Christine Todd Whitman
Administrator
Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Dear Administrator Whitman:

On March 28, 2001, we sent you a letter seeking information concerning your controversial decision to keep a new protective standard for arsenic in drinking water from going into effect as scheduled in the rule published on January 22, 2001. Your response is now 18 days late and more than a month has elapsed without any information or answers in response to any one of the 14 questions. Meanwhile, you have made countless appearances in the media, including sending correspondence to editors of newspapers on the subject of the arsenic rule.

It is unacceptable to stonewall legitimate requests for information from Members of the House Committee with jurisdiction and oversight responsibilities with respect to the Safe Drinking Water Act. Drinking water standards such as the arsenic standard are promulgated to protect the health of our citizens and Congress is entitled to information concerning the actions of the Environmental Protection Agency (EPA). Even during the days of deep controversy and conflict of the first administration of President Reagan, Congressional correspondence was responded to in a more timely manner.

It has now come to our attention that in December of 2000 and January and February of 2001, various industries, persons, and organizations submitted information and documents to EPA transition team members setting forth their views on executive orders, rulemakings, including final rules, and lawsuits that should be reviewed by the new Administration. Information identifying the major issues these industries or organizations thought would or should require the new Administrator's involvement was also sought by or submitted to the EPA transition team or its members.

For example, responses to questions such as the following were apparently received by one or more members of the EPA transition team or the Agency:

(a) Please identify any other major issues (including budget issues) that you think would or should require the new Administrator's involvement?

(b) Are there any significant administrative actions (organization changes, executive orders, directive, program letters, rulemakings, or lawsuits) that should be reviewed early in the new Administration?

We are also aware that two members of the core transition team for the EPA, Mr. John Howard and Mr. Marcus Peacock, now occupy senior positions at the White House and the Office of Management and Budget respectively. A third key transition team member, Mr. James Connaughton, represents in his private law practice one of the mining companies, ASARCO, Inc. that was advocating no change in the 1942 standard of 50 ppb for arsenic in drinking water.

We are concerned that the transition team provided a back door opportunity for special interests to influence public policy and rulemakings such as the new standard for arsenic. We believe that Congress and the public have the right to know what industries and other organizations were saying about pending, proposed, or final rulemakings or lawsuits during the period when the transition team was operating at the EPA. Obviously, one of those very important rulemakings was the one published in the *Federal Register* on January 22, 2001, setting new protective drinking water standard for arsenic of 10 ppb. Therefore, we would request that responses to the attached questions (including information and documents) be provided to us no later than Monday, May 21, 2001.

Thank you for your cooperation. If you have any questions, please contact us or have your staff contact Dick Frandsen, Minority Counsel, at 202-225-3641.

Sincerely,

John D. Dingell
Ranking Member
Committee on Energy and Commerce

Frank Pallone, Jr.
Ranking Member
Subcommittee on Environment and Hazardous Materials

Attachment

cc: The Honorable W. J. "Billy" Tauzin, Chairman
Committee on Energy and Commerce

The Honorable Paul E. Gillmor, Ranking Member
Subcommittee on Environment and Hazardous Materials

QUESTIONS AND REQUESTS FOR DOCUMENTS
FOR ADMINISTRATOR WHITMAN
ENVIRONMENTAL PROTECTION AGENCY

1. Please provide all documents or written materials, including electronic correspondence, submitted to the EPA transition team or individual transition team members between December 1, 2000 and March 1, 2001, which relate in any manner to the subject matter of the rulemaking and regulation establishing a new protective standard for arsenic in drinking water, including the possibility of delaying, suspending, withdrawing, rescinding, or otherwise modifying it.

2. Please specify the date and times you were briefed by or met with one or more members of the EPA transition team. Was the arsenic in drinking water rulemaking or regulation discussed or raised during any meetings or briefings with one or more individuals on the EPA transition team?

3. Please provide any portion of the transition team's briefing book or briefing materials prepared for you that reference in any manner the arsenic in drinking water rule or rulemaking.

4. Were there any verbal communications between you and any member of your staff and one or more members of the EPA transition team where the arsenic in drinking water rule or rulemaking was mentioned? If so, please indicate the date of any such communication and describe the substance of any such communication.

5. Either prior to or subsequent to January 22, 2001, have either you or any member of your staff initiated a written or oral communication to or received any written or oral communication from (a) Mr. John Howard, (2) Mr. Marcus Peacock, (3) Mr. James Connaughton with respect to the arsenic in drinking water rule or rulemaking? If so, please specify the date of any such communication and describe in detail the substance of any such communication.

6. Please provide any written materials, including electronic correspondence, that were provided to you or your staff by one or more members of the EPA transition team with respect to the arsenic in drinking water rule or rulemaking.

7. Did any member of the EPA transition team receive responses from any person, industry or organization to the following questions relating to the arsenic rule or rulemaking or the standard for a new MCL.

   (a) Please identify any other major issues (including budget issues) that you think would or should require the new Administrator's involvement?

   (b) Are there any significant administrative actions (organizational changes, executive orders, directives, program letters, rulemakings, or lawsuits) that should be reviewed early in the new Administration?

   If any such responses were received, please provide them.

8. Does the Agency maintain a public repository for e-mails and other correspondence or information it has received since the arsenic rule was published in the *Federal Register* on January 22, 2001? Please indicate the number of e-mails the Agency has received since January 22, 2001, with respect to the new drinking water standard for arsenic.

9. On Monday, April 2, 2001, in a letter to the editor of the Washington Post you stated that with regard to your decision to seek further review of new standards for arsenic in drinking water you "reached this decision after being told by numerous parties that the decision to move the rule before the end of the Clinton Administration precluded sufficient scientific and cost-benefit review." Please identify by name the "parties" to whom you were referring and the date and nature of any such communication.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 20 2001

OFFICE OF CONGRESSIONAL AND
INTERGOVERNMENTAL RELATIONS

The Honorable John D. Dingell
Ranking Member
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Congressman Dingell:

This is in response to your letter of March 28, 2001, concerning the Environmental Protection Agency's (EPA or Agency) plans to reconsider the January 22, 2001, revised arsenic in drinking water standard. In your letter, you raise a series of questions about EPA's actions to date and future plans for addressing the need to lower the arsenic standard.

First, let me say that Administrator Whitman shares your longstanding dedication to ensuring that our nation's drinking water is safe and affordable. She strongly believes safe drinking water is critical to public health and has committed to significantly reducing the amount of arsenic in our drinking water from the present level of 50 parts per billion (ppb). In response to your specific questions, I think it may be most helpful to describe the actions taken thus far and the Administrator's plans to achieve the reduction of arsenic in drinking water.

The revised arsenic standard was promulgated in January 2001, within the statutory deadline of June 22, 2001 for promulgation of a revised arsenic drinking water standard. The rule became subject to judicial review on January 22, 2001. The original effective date of the rule was March 23, 2001. On March 23, 2001, EPA published a notice (66 FR 16134) pursuant to the Administrative Procedure Act (APA) extending this effective date for 60 days, to May 22, 2001, in order to permit the Administrator to review the standard and the basis for the standard. Based on that review, the Administrator determined that significant aspects of the standard warrant additional consideration.

The Administrator believes that additional review of several aspects of the rulemaking will provide a more accurate basis for setting the standard. Given the complexity of the analyses underlying the rule, the Administrator believes that further opportunity to meet with key stakeholders, explain the Agency's final analysis and engage in face-to-face discussions will assure a common understanding of key assumptions and methodologies. Having received over tens of thousands of letters and emails on this rule, she believes that a full opportunity for a detailed and open, public discussion of scientific conclusions and key economic issues is the best way to ensure a full record upon which to base her decision. To assure the public that EPA has fully and properly evaluated the scientific and economic foundation of a new, lower arsenic

standard, Administrator Whitman has extended the effective date of the rule until February 2002 and ordered a review of the scientific, economic, and benefits analyses associated with the rule.

As part of this review, the National Academy of Sciences' (NAS) National Research Council (NRC) and the National Drinking Water Advisory Council (NDWAC), and the Science Advisory Board (SAB) will each initiate an independent review; EPA has requested that their reports be completed no later than August 2001.

The NAS has convened an expert panel to examine health effects issues. The panel is being conducted by a special subcommittee of the NRC's Committee on Toxicology which will prepare a report to update the scientific analyses, uncertainties, findings and recommendations of the 1999 NRC report, "Arsenic in Drinking Water." The subcommittee will review relevant toxicological and health-effects studies published since the 1999 NRC report, including the analyses performed by EPA in support of its regulatory decision-making for the January 2001 rule. The subcommittee held its first meeting on May 21, 2001 and plans to provide a consensus report in late summer. The final NRC report will be available for public review and comment.

The NDWAC has convened an expert panel to examine economic issues, beginning with its first meeting the week of May 14th. NDWAC is chartered under the Federal Advisory Committee Act (FACA) to advise, consult with, and make recommendations to EPA. The NDWAC has convened a panel of nationally recognized technical experts to review the cost of compliance estimates associated with the January 2001 rule. The working group charge is to review the costing methodologies, assumptions, and information underlying the costs applicable for various categories of water system sizes as well as the aggregated national estimate of system costs underlying the final arsenic rule. All NDWAC meetings are open to the public. A report and the final recommendations of the NDWAC will be made available for public review and comment.

The Science Advisory Board (SAB) will convene an expert panel to assess the value of benefits of arsenic risk reduction. Nominations to the panel are due June 18, 2001.

The Agency will invite additional public comment on the options proposed in the June 22, 2000, proposed arsenic rule (i.e., Maximum Contaminant Level options of 3, 5, 10, and 20 ppb). This proposal will allow for additional public comment on the range of arsenic levels and the associated scientific and economic issues.

Following completion of the science, economic, and benefits reviews and consideration of public comment, the Agency plans to complete its internal decision-making process and announce a final decision as early as possible in 2002. The Agency has dedicated the resources necessary to complete this review in a timely fashion.

The Administrator wishes to emphasize that this review will not in any way jeopardize the health of the American public. Administrator Whitman has committed to ensuring that the

standard's compliance date – the date by which the new, lower level of arsenic must be met – remains unchanged.

Again, we share your commitment to protecting the health of all Americans and appreciate your interest in the Agency's effort to reduce the level of arsenic in our nation's drinking water. As our review progresses, we will continue to share our progress and any new data with the public, and seek formal public comment on any new findings through Federal Register notices and public meetings.

In addition to raising questions about the arsenic rule, you also requested documents in the possession of EPA that were received by EPA between January 22, 2001 and March 28, 2001, the date of your request. Those documents are enclosed, with the following exceptions. We have received tens of thousands of form letters or e-mails to the Administrator. We are attaching a copy of some representative variations of this form correspondence. Please note that the names and personal information of individuals who wrote to EPA in their capacity as private citizens have been redacted from their letters or e-mails under Exemption 6 of the Freedom of Information Act (FOIA), because release of such information would constitute a clearly unwarranted invasion of personal privacy. We also have not enclosed one letter from the Department of Justice to EPA related to the ongoing lawsuit *American Wood Preservers Institute v. EPA* (D.C. Cir. No. 01-1097), in which petitioners are challenging the arsenic rule. This document is protected by the attorney-client and attorney-work-product privileges of Exemption 5 of the FOIA and is therefore exempt from disclosure.

Should you need additional information or have questions or concerns regarding this response, please contact me or your staff may call Steven Kinberg, Office of Congressional and Intergovernmental Relations, at (202) 564-5037.

Sincerely yours,

Ed Krenik

Edward D. Krenik
Associate Administrator

Enclosure

cc: The Honorable W. J. "Billy" Tauzin, Chairman
Committee on Energy and Commerce

The Honorable Paul E. Gillmor, Chairman
Subcommittee on Environment and Hazardous Material

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CONGRESSIONAL AND
INTERGOVERNMENTAL RELATIONS

SEP 26 2001

The Honorable John D. Dingell
Ranking Member
Committee on Energy and Commerce
U.S. House of Representatives
Washington, DC 20515

Dear Congressman Dingell:

Thank you for your letter of May 4, 2001, concerning the arsenic in drinking water standard. We appreciate your continued interest in EPA's process for updating the Safe Drinking Water Act standard for arsenic. I apologize for the delay in responding, and hope you find helpful this letter's inclusion of information on the most recent developments in the arsenic standard.

First, let me say that Administrator Whitman shares your longstanding dedication to ensuring that our nation's drinking water is safe and affordable. She strongly believes safe drinking water is critical to public health and has committed to significantly reducing the amount of arsenic in our drinking water from the present level of 50 parts per billion (ppb). I think it may be most helpful to describe the actions taken thus far and the Administrator's plans to achieve a significant reduction of arsenic in drinking water.

The revised arsenic standard was promulgated in January 2001, within the statutory deadline of June 22, 2001 for promulgation of a revised arsenic drinking water standard. The rule became subject to judicial review on January 22, 2001. The original effective date of the rule was March 23, 2001. On March 23, 2001, EPA published a notice (66 FR 16134) pursuant to the Administrative Procedure Act (APA) extending this effective date for 60 days, to May 22, 2001, in order to permit the Administrator to review the standard and the basis for the standard. Based on that review, the Administrator determined that significant aspects of the standard warrant additional consideration. It is important to clarify that the Administrator has announced that she fully intends to move forward with an updated, protective standard that would require compliance by water systems on the same schedule as contemplated in the earlier rule – by 2006.

To assure the public that EPA has fully and properly evaluated the scientific and economic foundation of a new, lower arsenic standard, the Agency published on May 22, 2001, a notice of final action (66 FR 28341) in which Administrator Whitman extended the effective date of the rule until February 2002 and ordered a review of the scientific, economic, and benefits analyses associated with the rule. This review will help assure the American people that EPA has fully and properly evaluated the scientific and economic foundation of a new, lower arsenic standard. A detailed and open discussion of scientific conclusions and key economic issues is the best way to ensure a full, credible record upon which to base a revised arsenic standard.

As part of this review, the National Academy of Sciences' (NAS) National Research Council (NRC) and the National Drinking Water Advisory Council (NDWAC), and the Science Advisory Board (SAB) were each charged to undertake an independent review. The Agency has dedicated the resources necessary to complete these reviews in a timely fashion.

The NAS convened an expert panel to examine health effects issues. The panel was conducted by a special subcommittee of the NRC's Committee on Toxicology which prepared a report to update the scientific analyses, uncertainties, findings and recommendations of the 1999 NRC report, "Arsenic in Drinking Water." The subcommittee reviewed relevant toxicological and health-effects studies published since the 1999 NRC report, including the analyses performed by EPA in support of its regulatory decision-making for the January 2001 rule. The subcommittee held public meetings on May 21, 2001 and June 20, 2001 and has completed a formal report. The final NRC report is available to the public.

The NDWAC is chartered under the Federal Advisory Committee Act (FACA) to advise, consult with, and make recommendations to EPA. The NDWAC convened a panel of nationally recognized technical experts to review the cost of compliance estimates associated with the January 2001 rule, and issued its final recommendations on August 23, 2001. The working group was charged with reviewing the costing methodologies, assumptions, and information underlying the costs applicable for various categories of water system sizes as well as the aggregated national estimate of system costs underlying the final arsenic rule. In preparing its recommendations, the workgroup held five public meetings in Washington DC, Phoenix AZ, and Denver CO in May, June, July, and early August. The final report has been made available for public review and comment.

An Arsenic Rule Benefits Review Panel of the EPA's Science Advisory Board was established to conduct a review of the benefits analysis and to evaluate the reasonableness and appropriateness of the components, methodology, criteria and estimates reflected in that analysis. This panel held a public meeting on July 19 and 20, 2001, held a tele-conference meeting on August 14, 2001, and sent the report for public review by the executive committee of the SAB in a tele-conference meeting on August 27, where it was approved. The final SAB report was produced on August 31, 2001. As with the NAS and NDWAC reports, the final SAB report is available for public review and comment.

While each of these expert panels were conducting their independent reviews, EPA also issued a proposal on July 19, 2001 (66 FR 42974), requesting additional public input and comment on whether the data and technical analyses associated with the January 2001 arsenic rule support setting the arsenic standard at 3 ppb, 5 ppb, 10 ppb, or 20 ppb. In addition, the Agency asked commenters to submit new information they may have for Agency review. The notice summarizes (1) the January 2001 arsenic regulations; (2) changes to the effective date; (3) the ongoing analyses of health data, cost of compliance estimates, and benefits; and (4) the review of small system implementation issues, including affordability, availability of financial assistance, treatment options, and extended compliance schedules.

Following completion of the science, cost, and benefits reviews and completion of the public comment period on a range of more stringent arsenic standards, the Agency plans to issue a Federal Register notice in mid-fall that will summarize key issues identified as a result of these three reviews and request further public comment on the science, costing and benefits reports. Based upon EPA's consideration of the NAS science, NDWAC costing, and SAB benefits reports and any additional public comment, the Agency plans to complete its internal decision-making process and announce a final decision as early as possible in 2002.

In your letter you also asked questions about information provided to Administrator Whitman by the transition team, or provided to the transition team by EPA. To the best of our knowledge, EPA staff met with the transition team several times during December 2000 and January 2001 where the arsenic rule could possibly have been discussed. On December 21, 2000, EPA had an introductory meeting with transition team members. During a meeting in January 2001, EPA staff provided the transition team with a briefing document which included a one-page document on drinking water research. During another meeting in January with the transition team, the arsenic rule may have been summarily discussed, and the transition team was provided a one-page document regarding the arsenic rule. In addition, three procedural lists were sent by EPA staff to members of the transition team. One was a list of EPA rules at OMB for review under Executive Order 12866, dated January 10, 2001. The other two were similar lists of regulations signed by Administrator Browner but not yet published, dated January 17, 2001 and January 22, 2001. We have not identified any documents provided to Administrator Whitman by the transition team.

Your letter also asked if the Agency maintains a public repository for documents received subsequent to January 22, 2001. EPA maintains an inventory for all proposed rulemakings or notices for which it solicits comments. With respect to the drinking water standard for arsenic, EPA established a public docket (docket number W-99-16-IV) for the April 23, 2001 proposal (66 FR 20580) to extend the effective date for the arsenic standard by nine months until February 22, 2002. The docket is available for public inspection and contains a substantial number of comments, most of which were form-letter e-mails. In addition, the Agency maintains a Safe Drinking Water hotline that responds to particular inquiries on drinking water issues. This hotline received a substantial number of form-letter e-mail comments in response to the Administrator's March 20, 2001 announcement and the

March 23, 2001 Federal Register notice that the Agency planned to extend the effective date for the arsenic standard and conduct a review of the scientific, economic, and benefits analyses supporting the revised drinking water standard for arsenic. The Agency set up a separate inventory of those comments. Outside of the aforementioned rulemaking efforts and the hotline, the Agency does not maintain a public repository for correspondence or information it receives related to the arsenic standard.

With regard to your question about making the decision to extend the revised standard's effective date and to conduct a review of its underlying analyses, the Administrator did not meet or correspond with outside interest groups. EPA career staff provided the Administrator with significant background information about the Agency's efforts to reduce arsenic in drinking water, and she was briefed extensively on the rule itself and the views submitted by commenters on the rule. During her early travels as EPA Administrator, she also heard from elected officials and other citizens, including a discussion of the subject at a meeting of the Western Governors' Association.

Again, we share your commitment to protecting the health of all Americans and appreciate your interest in the Agency's effort to reduce the level of arsenic in our nation's drinking water. Should you need additional information or have questions or concerns regarding this response, please contact me or your staff may call Steve Kinberg, Office of Congressional and Intergovernmental Relations, at (202) 564-5037.

Sincerely yours,

Ed Krenik

Edward D. Krenik
Associate Administrator

cc: The Honorable W. J. "Billy" Tauzin, Chairman
Committee on Energy and Commerce

The Honorable Paul E. Gillmor, Chairman
Subcommittee on Environment and Hazardous Material

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OCT 31 2001

THE ADMINISTRATOR

The Honorable John Dingell
Ranking Minority Member
Committee on Energy and Commerce
U.S. House of Representatives
Washington, D.C. 20515

Dear Congressman Dingell:

As you know, the U.S. Environmental Protection Agency (EPA) has been conducting a thorough review of the appropriate standard for arsenic in drinking water, based upon the best available science. Throughout this process, I have made it clear that EPA intends to strengthen the standard for arsenic by substantially lowering the maximum acceptable level from 50 parts per billion (ppb), which has been the lawful limit for nearly half a century.

I can now report that the drinking water standard for arsenic will be 10 ppb, and we will maintain the compliance date of 2006. This standard will improve the safety of drinking water for millions of Americans, and better protect against the risk of cancer, heart disease, and diabetes.

As required by the Safe Drinking Water Act, a standard of 10 ppb protects public health based on the best available science and ensures that the cost of the standard is achievable. Over the past several months, we have had the benefit of insight provided by national experts who conducted three new independent scientific studies – the National Academy of Sciences, the National Drinking Water Advisory Council, and EPA's Science Advisory Board. In addition, we have received more than 55,000 comments from the public.

Nearly 97 percent of the water systems affected by this rule are small systems that serve fewer than 10,000 people each. I recognize the challenges many small systems will face in complying with this standard, given their higher per capita costs. Therefore I am committed to working closely with states and small water systems to identify ways to reduce arsenic levels at a reasonable cost to ratepayers.

EPA plans to provide $20 million over the next two years for research and development of more cost-effective technologies to help small systems to meet the new standard. EPA will also provide technical assistance and training to operators of small systems, which will reduce

their compliance costs. EPA will work with small communities to maximize grants and loans under the existing State Revolving Fund and Rural Utilities Service programs of the Department of Agriculture. Finally, I have directed my staff to identify other ways that we may help smaller water systems reduce arsenic levels at a reasonable cost. Our goal is to provide clean, safe, and affordable drinking water to all Americans.

I look forward to working with Congress; my colleagues in the Administration; state, local and tribal governments; and other interested parties as we move forward with this protective standard. It's not enough just to set the right standard – we want to work with local communities to help them meet it. Working together, we can ensure the continuing viability of small, rural water systems, and meet our common goal of improving water quality and protecting public health.

Sincerely,

Christine Todd Whitman