

United States
Environmental Protection
Agency

EPA

Report of Audit

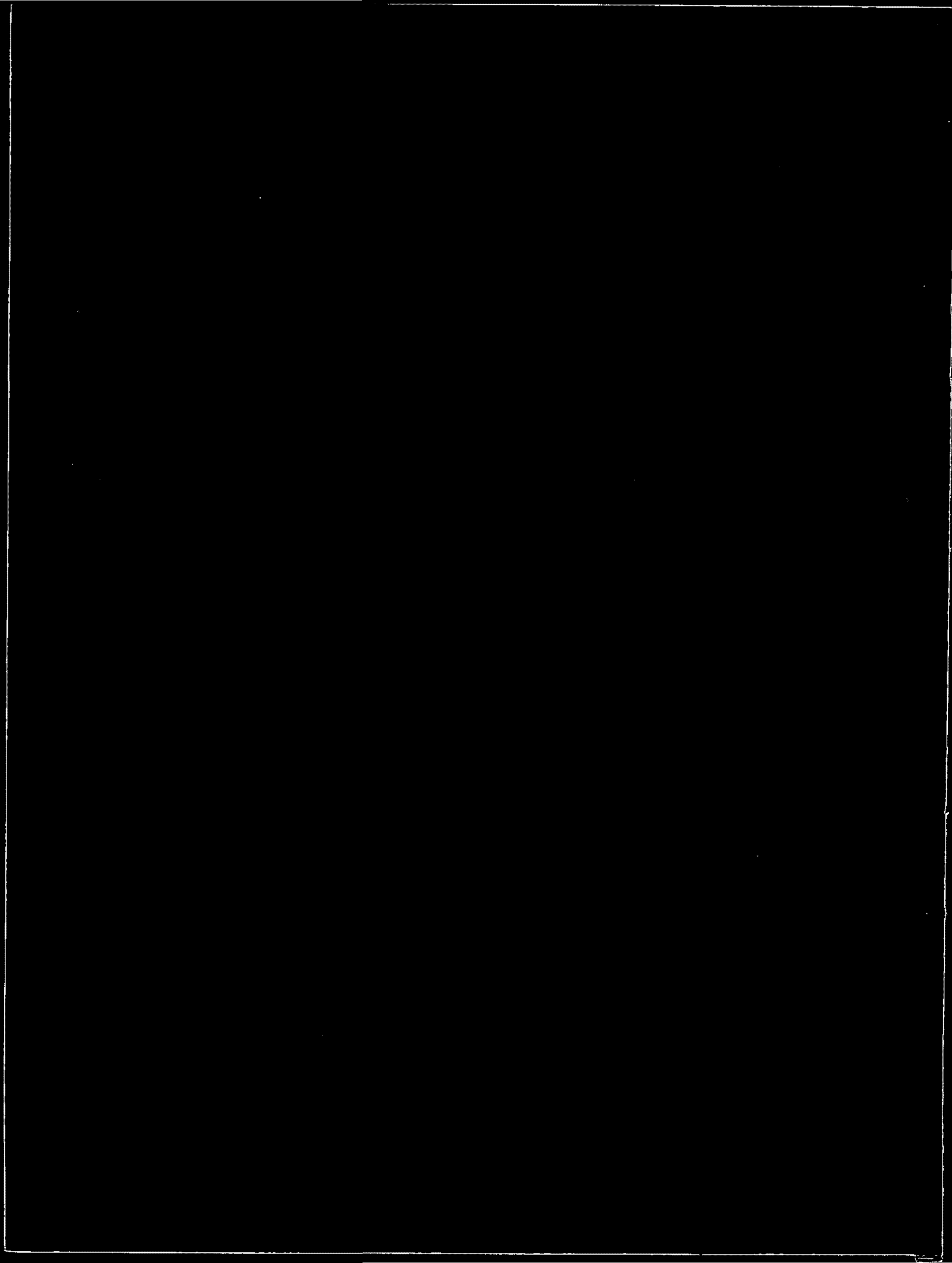
REPORT OF AUDIT ON THE LEAD IN DRINKING WATER PROGRAM

AUDIT REPORT NUMBER E1HWF9-03-0316-0100508

SEPTEMBER 28, 1990



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

OFFICE OF
THE INSPECTOR GENERAL

SEP 28 1990

MEMORANDUM

SUBJECT: Audit Report Number E1HWF9-03-0316-0100508
Report of Audit on the Lead In Drinking
Water Program

FROM: Kenneth A. Konz *Kenneth A. Konz*
Assistant Inspector General for Audit

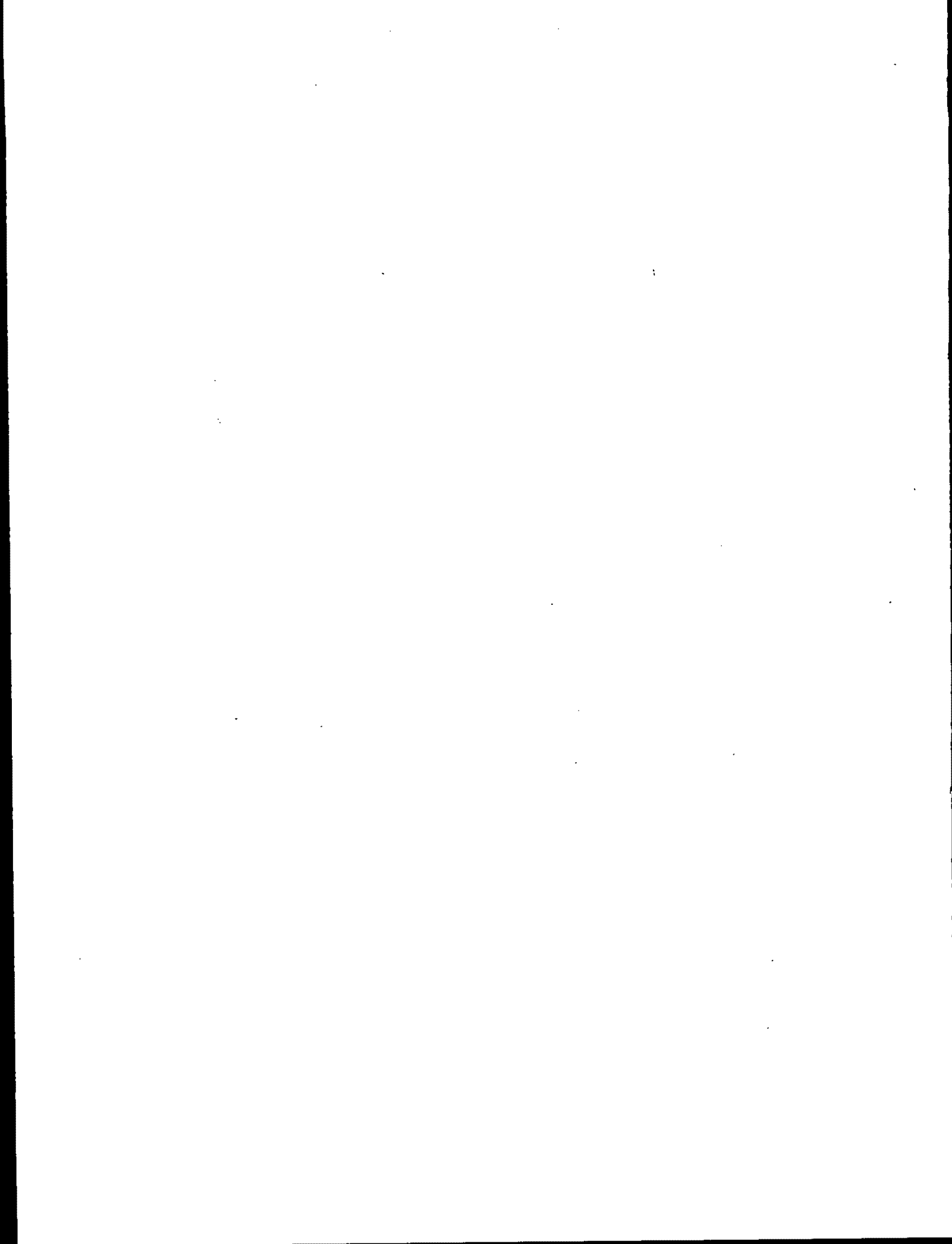
TO: LaJuana S. Wilcher
Assistant Administrator for Water

Attached is a copy of our report entitled "Report of Audit on the Lead In Drinking Water Program, E1HWF9-03-0100508." This report provides important findings and recommendations regarding the Agency's Lead In Drinking Water Program.

As the action official, you are required by EPA Directive 2750 to provide this office with a written response to the audit report within 90 days of the audit report date. In addition, the Director, Resource Management Division in EPA Headquarters, also requests that you forward a copy of your response to the Agency Internal Control Official (PM-225): c/o - Resource Management Division.

Should you or your staff have any questions or need additional information, please contact Dennis Deely at FTS 597-9976.

Attachment





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SUBJECT: Audit Report Number E1HWF9-03-0316-0100508
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FROM: Kenneth A. Konz *Kenneth A. Konz*
Assistant Inspector General for Audit

TO: LaJuana S. Wilcher
Assistant Administrator For Water

OBJECTIVES, SCOPE AND METHODOLOGY

We performed an audit of the Lead in Drinking Water Program administered by the Office of Drinking Water in EPA Headquarters and Region III. During our review of the requirements of the Safe Drinking Water Act (SDWA) Amendments of 1986, we noted that several regulations governing lead would go into effect between June 1986 and November 1988. Additionally, Congress enacted the Lead Contamination Control Act (LCCA) in November 1988 which further amended the SDWA. Our audit work focused on three major initiatives EPA and the States were using, in accordance with both the SDWA and LCCA, to reduce health hazards associated with lead levels in drinking water. These initiatives included:

- 1) implementation and enforcement of the lead ban and public notification requirements of the SDWA, 2) assistance provided to schools in accordance with the Lead Contamination Control Act (LCCA) and 3) lowering the acceptable limit of lead found in drinking water supplies.

Specifically, the objectives of the audit were to evaluate EPA and the States' roles in performing:

- o The requirements of the LCCA, which include:

- 1) whether States in Region III have implemented an adequate program by August 1989, to assist schools and day care facilities in testing for and remedying lead contamination in their drinking water; and

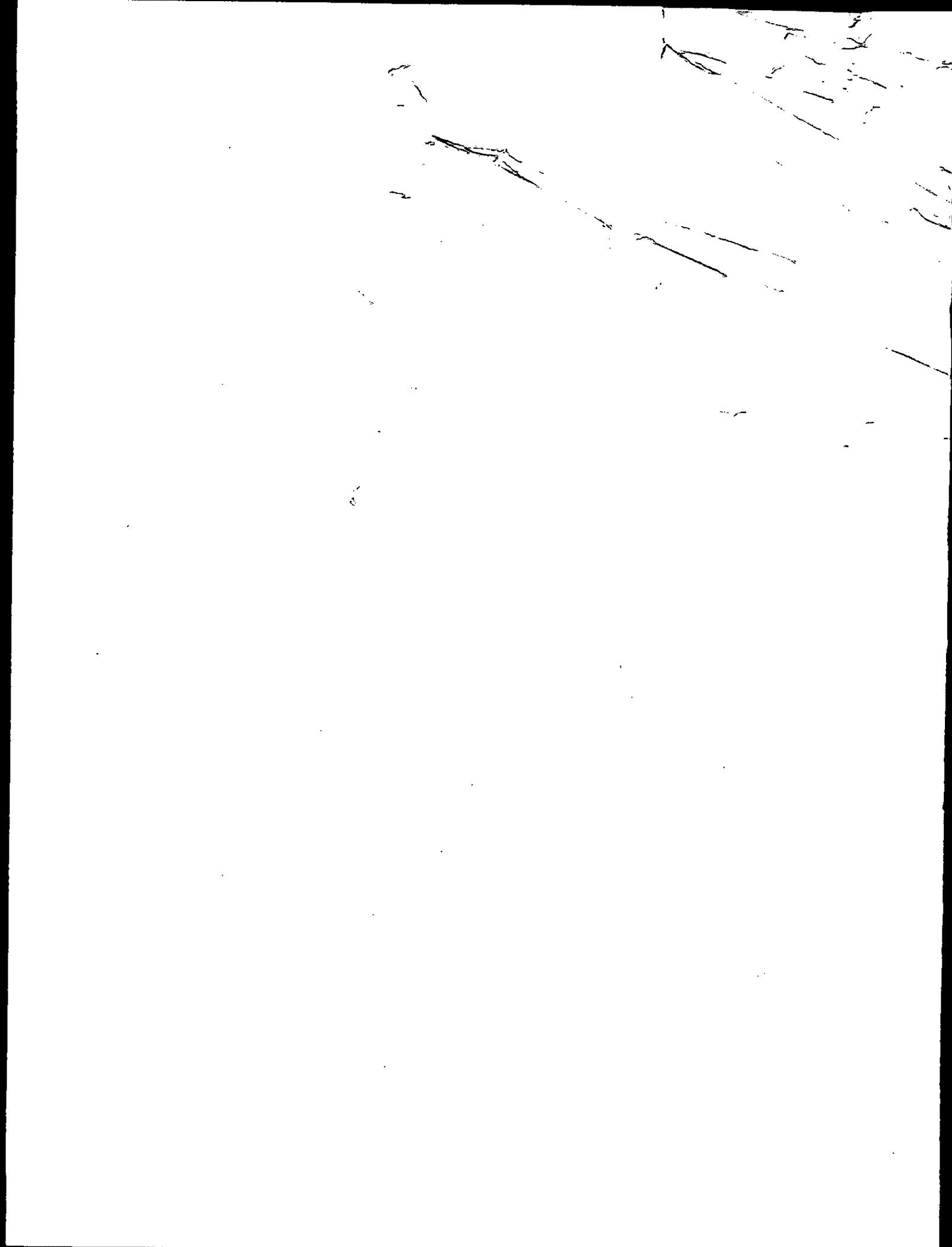
- 2) whether EPA has provided, by February 1989, a timely, current, and accurate list of lead-contaminated water coolers.
- o The requirements of the SDWA Amendments of 1986, which include:
- 1) whether States in Region III have adopted the lead ban and public notification requirements and if these requirements are being enforced at the State and local level;
 - 2) whether EPA is adequately monitoring the States' compliance with the lead ban and public notification requirements; and
 - 3) the effect of EPA's delay in issuing a revised lead MCL, required as of June 1988.

The audit fieldwork began on August 22, 1989, and was completed on April 1, 1990. We performed our review at EPA Headquarters, Region III, and all States in Region III (Pennsylvania, Maryland, Delaware, Virginia, West Virginia and Washington D.C.). Our review of the State LCCA and Lead Ban Programs included visits with State officials from both Environmental and Educational agencies. We also visited plumbing inspectors in Maryland, Virginia and West Virginia as well as school district officials in Washington D.C., Pennsylvania, Maryland, Virginia and West Virginia. Our review also included a visit to the Consumer Product Safety Commission (CPSC) which was required by the LCCA to issue an order to manufacturers that have been identified by EPA as producing lead-lined coolers. The order would require manufacturers of such coolers to repair, replace, or recall the coolers and provide a refund. In addition, we conducted telephone interviews with the following: school district officials, plumbing inspectors, State personnel, staff from EPA's laboratory in Cincinnati and EPA Headquarters personnel.

To evaluate whether the States were adequately fulfilling their responsibilities under the LCCA, we contacted (either in person or by telephone) 13 school districts throughout Region III. Initially, we sampled seven of the largest school districts in the Region. We found three of the seven did not test their water. To adequately examine testing procedures, we had to augment our original sample to include schools that tested. Accordingly, we added three of the largest remaining school districts which did test their drinking water. The remainder of our sample included three smaller school districts that tested their drinking water. Also, we reviewed data at EPA Headquarters from 42 school districts throughout the country. The data consisted of test results, and in some instances, cooler inventories.

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Our review at the school districts included examining; test results, number of outlets, type of outlets, type and model number of coolers, testing procedures, corrective actions and notifications of the availability of test results to parents, teachers and employee organizations.

To examine the States' program for implementing and enforcing the lead ban, we visited county plumbing inspectors in Maryland, Virginia, and West Virginia. During our visits, we reviewed information such as: number of inspectors, number of inspections, procedures for detecting lead solder, pipe and flux, as well as violations and enforcement actions.

We performed the audit in accordance with the Government Auditing Standards issued by the Comptroller General of the United States as they apply to economy and efficiency and program results audits. This review included tests of the records and other auditing procedures we considered necessary at EPA Headquarters, Region III, the State designees for the Lead Ban and LCCA Programs, and selected local designees for the Lead Ban Program and school districts for the LCCA Program.

Our review evaluated the economy, efficiency and program results expected only in relation to the procedures used by the States in complying with the SDWA (regarding the Lead Ban) and LCCA requirements for the Lead in Drinking Water Program. We also evaluated EPA's compliance and oversight of both the SDWA and the LCCA requirements. This review disclosed several areas needing improvement which are discussed in this report. Because of the limited scope of our audit, we did not perform a study and evaluation of internal controls and accordingly did not include a report on them. During this review we used information maintained by EPA on its computer. We did not review the general and application controls of the data processing system because the main purpose of our review was to evaluate the overall management of the Lead in Drinking Water Program, and not to express an opinion on the accuracy of the data processing system. No other issues came to our attention which we believed were significant enough to warrant expanding the scope of this audit.

We reviewed the Office of Water's as well as Region III's compliance with the Federal Managers' Financial Integrity Act (FMFIA). We found no mention of any LCCA requirements in our FMFIA review; however, Region III did mention in their internal control documentation that the lead ban/public notification requirements would be examined during the mid year reviews. None of the other weaknesses cited in this report were disclosed in their vulnerability assessment or any internal control reviews.

SUMMARY OF FINDINGS

The detailed findings, along with related recommendations for corrective action, are provided in the "Findings and Recommendations" section of this report. During our review we found that:

- o Many schools testing for lead discovered dangerous levels of lead in their drinking water. Many schools did not test their water, and if they did test, they did not always test adequately.
- o Some school administrators did not take appropriate corrective action because of confusing Federal requirements.
- o EPA did not publish the list of imminently hazardous water coolers timely, did not aggressively locate and identify additional coolers to place on the list, and did not fully utilize data gathered on the test results of coolers.

EPA estimates that every year over 250,000 children are exposed to lead in drinking water at levels high enough to impair their intellectual and physical development. Our findings confirm that harmful amounts of lead exist in the drinking water provided by schools. We believe that both EPA and the States must be more aggressive in eliminating the health hazards imposed by lead in drinking water. The findings included in this report are summarized below.

1. THE STATES WERE NOT ADEQUATELY ENSURING THAT SCHOOL WATER SOURCES WERE TESTED TO PROTECT CHILDREN FROM LEAD CONTAMINATION

States have not developed adequate programs to assist schools and day care centers in dealing with lead contamination in their drinking water. The LCCA requires States to develop programs to assist schools and day care centers in testing for, and remedying, lead contamination in drinking water. The State programs were required to ensure all water coolers were tested, and if found hazardous, were remedied by February 1, 1990. We found that States were not complying with these requirements. We also found that some schools testing for lead discovered dangerous levels of lead in their drinking water. Schools have identified this lead contamination to such sources as coolers, fountains and plumbing. The contamination may be even worse than reported, because some of the schools did limited or improper testing. More importantly, our review disclosed that some schools were not testing and consequently are unaware of imminent health hazards potentially present in their schools.

EPA stated that the law provides no effective authority to the Agency for requiring States to comply with LCCA requirements. The LCCA authorized Federal funding, but it has never been appropriated, and States cite this lack of resources as a cause for inefficient and inadequate State programs. While these may be true statements, EPA should, as the Agency responsible for ensuring the safety of the nation's drinking water, make sure that this important health issue gets the attention it deserves. EPA should do all that it can to encourage and assist States in complying with the law. EPA should perform additional outreach to the States and prepare model plans to assist States in formulating their LCCA programs.

2. EPA SHOULD IMPROVE PROCEDURES FOR IDENTIFYING WATER COOLERS THAT ARE NOT LEAD FREE

EPA was approximately one year late in providing a current and accurate list of imminently hazardous water coolers to States as required by the LCCA. We found that EPA did not: (1) publish the list within the time frames required by the LCCA; (2) locate and identify additional coolers to place on the list; and (3) fully utilize data gathered on the test results of coolers. Our review of lead testing in the schools revealed that some schools with limited resources were only testing water coolers on EPA's list of hazardous coolers. By limiting their testing, these schools may not have tested all dangerous coolers, exposing their students to unnecessary health risks. EPA's delay in publishing the list of dangerous coolers may have also delayed the Consumer Product Safety Commission (CPSC) in issuing an order to the manufacturers of these coolers. The order, according to the LCCA, would have required manufacturers to repair, replace, or recall and provide a refund for such coolers by November 1, 1989. Consequently, many school districts with hazardous coolers were awaiting action by both CPSC and the manufacturers. EPA officials attribute deficiencies in publishing the list to: insufficient resources; enormous number and type of water coolers; and the inability to obtain water coolers for testing. We also believe uncertainties in the division of responsibilities between EPA and CPSC may have resulted in inefficient and ineffective procedures for identifying water coolers to be tested.

We recommend that the data gathered on test results of coolers be used to prioritize the remaining workload of water cooler testing and to determine if water cooler manufacturers are not obeying the lead ban. We also recommend that EPA execute an interagency agreement (IA) with CPSC delineating each Agency's responsibility in testing water coolers.

3. EPA AND THE STATES HAVE NOT ADEQUATELY ENSURED THAT THE PUBLIC HAS BEEN INFORMED ABOUT LEAD IN DRINKING WATER AND THE LEAD BAN

EPA did not aggressively pursue the States' lack of enforcement concerning public notification and lead ban requirements of the Safe Drinking Water Act (SDWA). States did not ensure public water systems notified their customers of the dangers of lead in their drinking water. Also, States did not adequately enforce the prohibition on use of lead pipes, solder and flux in plumbing providing water for human consumption. States were required to enforce both of the above requirements by June 19, 1988. We found that less than 50 percent of the public water systems in Region III complied with the public notification requirements and the States are uncertain if contractors are still using illegal lead pipe, solder and flux. As a result, the public was not adequately informed of the dangers and potential presence of lead in their water and may still be having lead plumbing supplies installed in their homes. States cite a lack of resources as well as a lack of direct authority to enforce the lead ban requirement. The ban of lead pipes and solder is generally included in the State building codes and accordingly is enforced by the local building inspectors, not environmental agencies. We recommend that EPA take stronger measures to encourage States to comply with the lead requirements of the SDWA.

4. EPA NEEDS TO ELIMINATE CONFUSION OVER LEAD MCL

The Agency has not complied with the Safe Drinking Water Act (SDWA) requirement for revising the maximum contaminant level (MCL) for lead in drinking water. The SDWA required EPA to revise the existing MCL for lead by June 1988. More than two years elapsed since this deadline, and the Agency still has not revised the MCL for lead in drinking water. Furthermore, we found that confusion exists among schools and laboratories over EPA's acceptable limits of lead in drinking water from school coolers and fountains. The current maximum contaminant level for lead is 50 parts per billion (ppb). When Public Water Systems providing drinking water to the public exceed this limit, they are in violation of the SDWA. EPA, in its guidance document for lead in schools, recommends that any water source for human consumption exceeding 20 ppb be taken out of service immediately. Laboratories regularly testing water for public water systems also may perform testing for school districts. Some of these laboratories have been notifying all schools with test results of less than 50 ppb that they are within the limits established by the SDWA. These labs did this without making reference to EPA's 20 ppb guidance for schools. Accordingly, we found school districts leaving in service water coolers and fountains having test results between 20 ppb and 50 ppb. We believe EPA needs to clarify any confusion which may exist between guidance for the schools and regulations used by the various laboratories.

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Prior to issuing the draft report, we provided copies of the preliminary findings to officials of the Office of Drinking Water (ODW) and Region III. These officials responded with written comments to the findings, however, our evaluation of their comments did not cause us to significantly alter the content of the findings. We subsequently issued a draft report to the Assistant Administrator for Water on July 12, 1990. We received a response to the draft report on August 16, 1990, which was essentially the same as the response to the preliminary findings that we previously received. In the Findings and Recommendations section of this report, we have paraphrased the Assistant Administrator's response and provided additional comments of our own. The response contained several attachments, which were too voluminous to include in the report. Accordingly, only the narrative portion of the response is attached in Appendix A of this report. The attachments are on file in our office for review.

On August 27, 1990 and September 12, 1990, we held exit conferences with Region III and Office of Drinking Water officials, respectively. Based on these discussions and written comments submitted by the Agency, EPA informed us that they have begun to take the following corrective actions:

- 1) developing improved guidance and model programs for States on implementing the LCCA and lead ban; and
- 2) disseminating a nationwide alert to laboratory directors and schools to avoid confusion over the amount of lead in drinking water for which EPA recommends remediation.

We believe these actions will help strengthen the Lead in Drinking Water Program, however; additional actions are still warranted.

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ACTION REQUIRED

In accordance with EPA Order 2750, the action official is required to provide this office with a written response to the audit report within 90 days of the report date. Since this report deals primarily with Headquarters' management of the Lead in Drinking Water program, the Assistant Administrator for Water was designated the primary action official. As such, she should take the lead in coordinating both Headquarter's and Region III's response to the audit report.

BACKGROUND

Medical research shows lead to be a toxic metal which can be harmful to human health even at low exposure levels. Too much lead in the human body can cause serious damage to the brain, kidneys, nervous system, and red blood cells. The groups that have the greatest risk, even with short-term exposure, are young children and pregnant women. Lead poisoning among young children and related risk groups remains a major public health issue in the United States, even though it has long been recognized as a fully preventable disease. The American Academy of Pediatrics, in its 1987 statement on the topic, defined lead exposure and toxicity as one of the major health hazards--and in all likelihood the top environmental hazard--confronting young children in America.

Children are particularly sensitive to lead contamination. Their bodies are developing and, as a result, they absorb and retain more lead than adults. A dose of lead that would have little effect on an adult can have a big effect on a child. Even at very low levels of lead exposure, children can experience reduced I.Q. levels, impaired learning and language skills, loss of hearing, impaired formation and function of blood cells, and reduced attention spans and poor classroom performance. At higher levels, lead can damage their brains and central and peripheral nervous systems, interfering with both learning and physical growth. Many children with lead poisoning have no symptoms; others have only non-specific symptoms such as headache, stomach-ache, or irritability. At its worst, lead poisoning can result in stupor, coma, kidney damage, or severe brain damage.

Women are also at risk. In women, lead can cause fertility problems and miscarriages. In pregnant women, lead can cause impaired development of the fetus, premature births, and reduced birth weights. Men are at risk of increased blood pressure from exposure to lead.

Lead is present in many places--in old paint, air, food, dust, dirt, and drinking water. Harmful levels of lead can enter the body from any of these sources. Exposure from lead in old paint, dust and soil is widespread and abatement of such sources is costly

and difficult. Other sources such as lead in gasoline, food and drinking water can be more easily controlled. A large effort is already underway to reduce the amount of lead exposure from such controllable sources.

The Safe Drinking Water Act (SDWA) of 1974 requires the U.S. Environmental Protection Agency (EPA) to set drinking water standards to protect the public health. Major amendments to this law, passed in 1986, banned the use of lead materials in new plumbing and in plumbing repairs, and required water suppliers to notify the public about lead in drinking water. The Amendments require the use of lead free pipe, solder and flux in the installation or repair of any plumbing providing water for human consumption. Solder and flux are considered "lead free" when they contain not more than 0.2 percent lead. (In the past, solder normally contained about 50 percent lead). Pipes and fittings are considered "lead free" when they contain not more than 8.0 percent lead. The Amendments also established special public notification requirements pertaining to lead. In general, each public water system must identify and provide notice to persons that may be affected by lead contamination of their drinking water.

According to the law, notice shall provide a clear and readily understandable explanation of:

- 1) the potential sources of lead in the drinking water;
- 2) potential adverse health effects (EPA mandatory health effects language must be used verbatim);
- 3) reasonably available methods of mitigating known or potential lead content in drinking water;
- 4) any steps the system is taking to mitigate lead content in drinking water; and
- 5) the necessity for seeking alternative water supplies, if any.

The SDWA Lead Ban and Public Notification requirements were to have been enforced in all States effective June 19, 1988. States were to enforce the requirements through State or local plumbing codes, or such other means of enforcement the State determined to be appropriate. EPA Regional Offices have responsibility for ensuring States comply with the Lead Ban/Public Notification requirements. If the Region determines that a State is not enforcing the above requirements, the Region may withhold up to five percent of Federal funds available to that State for Public Water System Supervision (PWSS) grants.

On November 1, 1988, a major new Amendment to the SDWA, known as the Lead Contamination Control Act (LCCA) was enacted. This legislation provided for programs to help reduce exposure to lead-contaminated drinking water, especially for children. Its major provisions included: mandate for the Consumer Product Safety Commission (CPSC) to order the repair, replacement, or recall and

refund of drinking water coolers that EPA has identified as containing lead-lined water tanks; a ban on the manufacture or sale in interstate commerce of drinking water coolers that are not lead free; Federal and State programs to help schools evaluate and respond to lead contamination in drinking water, including State and Federal technical and financial assistance; and (if appropriations are available) the expansion of lead screening programs for children to be administered by the Centers for Disease Control.

The LCCA also provided that EPA, after notice and opportunity for public comment, publish a list of drinking water coolers, by brand and model, which are not lead free. The list must separately identify each brand and model of drinking water cooler which has a lead-lined water tank. In carrying out this provision, EPA is to use the best information available to the Agency. EPA is to revise and republish this list from time to time, as may be appropriate, as new information or analysis becomes available regarding lead contamination in drinking water coolers.

All drinking water coolers identified by EPA on the list as having a lead-lined tank shall be considered to be "imminently hazardous consumer products." The CPSC, after notice and opportunity for comment, including a public hearing, is required to issue an order requiring the manufacturers and importers of such coolers to repair, replace, or recall and provide a refund for such coolers within one year after the enactment of the LCCA.

The LCCA also placed several requirements on the States. By August 1, 1989, each State was required to establish a program to assist local educational agencies (LEAs) in testing for and remedying lead contamination in drinking water. This program should have included measures for the reduction or elimination of lead contamination from those water coolers which are not lead free and are located in schools. Such measures should have been adequate to ensure that by February 1, 1990, all such water coolers were repaired, replaced, permanently removed, or rendered inoperable unless the cooler was tested and found (within the limits of testing accuracy) not to contribute lead to drinking water.

The LCCA authorized Federal assistance for State programs to assist LEAs in testing for, and remedying, lead contamination in drinking water. Approximately \$30 million a year was authorized for fiscal years 1989, 1990 and 1991. In addition to providing assistance to the States, such funds, according to the LCCA, may be used by States to reimburse LEAs for expenses of testing and remedial action. Additionally, the Public Health Service Act was amended by the LCCA to authorize Federal assistance for community programs designed to: screen infants and children for elevated blood levels; assure referral of treatment for infants and children with such blood levels; and provide education about childhood lead

poisoning. Approximately \$20 million, \$22 million and \$24 million was authorized respectively for fiscal years 1989, 1990 and 1991. However, as of April 1, 1990 no funds had been appropriated for any of these three years.

The Office of Drinking Water in EPA Headquarters has retained responsibility for Agency activities concerning the LCCA. Unlike the delegation of Lead Ban and Public Notification requirements to Regional Offices, the Headquarters Office of Drinking Water has not relinquished LCCA responsibilities. Issuance of EPA protocol documents, training programs, and testing of water coolers have been conducted by Headquarters personnel.

FINDINGS AND RECOMMENDATIONS

1. THE STATES WERE NOT ADEQUATELY ENSURING THAT SCHOOL WATER SOURCES WERE TESTED TO PROTECT CHILDREN FROM LEAD CONTAMINATION

States have not developed adequate programs to assist schools and day care centers in dealing with lead contamination in their drinking water. The LCCA requires States to develop programs to assist schools and day care centers in testing for, and remedying, lead contamination in drinking water. The State programs were required to ensure all water coolers were tested, and if found hazardous, were remedied by February 1, 1990. We found that States were not complying with these requirements. We also found that some schools testing for lead discovered dangerous levels of lead in their drinking water. Schools have identified this lead contamination to such sources as coolers, fountains and plumbing. The contamination may be even worse than reported, because some of the schools did limited or improper testing. More importantly, our review disclosed that some schools were not testing and consequently are unaware of imminent health hazards potentially present in their schools.

EPA stated that the law provides no effective authority to the Agency for requiring States to comply with LCCA requirements. The LCCA authorized Federal funding, but it has never been appropriated, and States cite this lack of resources as a cause for inefficient and inadequate State programs. While these may be true statements, we believe that EPA should, as the Agency responsible for ensuring the safety of the nation's drinking water, make sure that this important health issue gets the attention it deserves. EPA should do all that it can to encourage and assist States in complying with the law. EPA should perform additional outreach to the States and prepare model plans to assist States in formulating their LCCA programs.

In accordance with the LCCA, States shall disseminate the EPA guidance document and testing protocol to local educational agencies (LEAs), private non-profit elementary or secondary schools and to day care centers. Further, by September 1989, States were required to establish a program to assist LEAs in testing for, and remedying, lead contamination in drinking water sources. Such program should include measures for the reduction or elimination of lead contamination from those water coolers which are not lead free and which are located in schools. Such measures shall be adequate to ensure that by February 1, 1990, water coolers in schools are repaired, replaced, permanently removed or rendered inoperable unless the cooler is tested and found not to contribute lead to drinking water. Despite not requiring the schools to test for lead in their drinking water, the LCCA provides that if a school district or day care center does test, they must notify the

parents, teachers and employee organizations of the availability of such testing results.

EPA's responsibilities under the LCCA include publishing both a guidance document to test for lead and a list of non-lead free water coolers to assist in prioritizing sampling locations. In January 1989, EPA published a guidance document that contains sampling procedures to determine the location and source of lead in the drinking water. In this document, EPA recommends that sample sites be prioritized on the basis of likelihood of contamination. Sample sites which are most likely to have lead contamination include water coolers identified by EPA as having lead-lined storage tanks or lead parts. On April 10, 1989, EPA published a proposed list of water coolers having lead-lined storage tanks or other parts containing lead.

The LCCA, unlike other programs authorized under the Safe Drinking Water Act, does not require EPA to ensure States fulfill their LCCA responsibilities. Accordingly, EPA has not enforced States' implementation of the law. Furthermore, the LCCA authorized \$30 million a year in fiscal years 1989, 1990 and 1991 for States to assist their schools and day care centers in testing for, and remedying lead contamination. However, these funds have never been made available to the States. The lack of authority combined with the lack of Federal funds has limited EPA's ability in aggressively pursuing compliance with the law.

Despite not having authority to enforce LCCA provisions, EPA has devoted considerable effort to providing assistance to States, schools and local educational agencies to implement the LCCA. During the summer of 1989, EPA conducted a series of "train the trainer" seminars in five EPA regions and in Washington D.C. The purpose of these seminars was to instruct key officials on providing training on the local level to test for and remedy lead contamination in school drinking water. Also, during the latter part of 1989, EPA, with eleven national educational organizations, sponsored six seminars to alert the education community and parents about lead in drinking water. Further, EPA is developing a training video on testing for lead in school drinking water, a guidance document for day care centers, nursery schools and non-residential, non-school buildings, and a "Hazards in Schools" booklet.

Our review revealed that none of the States in Region III had complied with all of their requirements under the LCCA. We found that Virginia, Delaware, Maryland, West Virginia and the District of Columbia distributed the EPA guidance document or made it available to the schools and day care centers. The only State not fulfilling this requirement was Pennsylvania. Personnel from the Department of Environmental Resources in Pennsylvania claim they are waiting for additional resources from the State to hold training sessions prior to the release of the EPA guidance.

Although the majority of the States mailed the guidance document, none of the States had developed adequate programs to assist their LEAs in testing for, and remedying lead contamination in their drinking water. Specifically, the State programs did not ensure that all water coolers were tested for lead. Additionally, the State programs did not ensure that all coolers found to contribute lead to drinking water were either repaired, replaced, permanently removed or rendered inoperable by February 1, 1990, as required by the LCCA.

Most States have limited resources to test water coolers. Accordingly, the only way the States could ensure that coolers were tested was to require schools and day care centers to test their own coolers. Our review of a nationwide summary prepared by EPA personnel revealed that only Minnesota and the Virgin Islands required LEAs and day care centers to test their drinking water. Other States and territories only recommended that the schools test their water in accordance with EPA protocol. Since the LCCA and most States have not required that drinking water be tested for lead contamination, many schools and day care centers have not performed testing.

Our review of States in Region III revealed that none of the States had adequate records to make sure that hazardous coolers were remedied by the February 1, 1990 deadline. The chart below indicates the responses to a questionnaire distributed by the region to its States in October 1989. The Region asked the States in this questionnaire to estimate the number of schools and day care centers testing for lead in their drinking water. The results are listed below:

| <u>States</u> | <u>Schools</u> | <u>Day Care Centers</u> |
|---------------|-----------------|-------------------------|
| Delaware | unknown | unknown |
| Virginia | unknown | unknown |
| West Virginia | 100* | 20* |
| Maryland | 1,000 - 2,000** | unknown |
| Pennsylvania | unknown | unknown |

* This represents 8% of the total schools and 11% of the total day care centers statewide.

** This represents between 50% and 90% of the total schools statewide.

As shown above, the States were not aware of how many schools and day care centers tested their water. Consequently, the States were not prepared to comply with the February 1, 1990, deadline for ensuring the correction of lead contamination in the coolers.

State Agencies appear frustrated with EPA over the lack of Federal funding and the lack of EPA's expectations concerning the States' implementation of the LCCA. In response to a questionnaire on the LCCA by EPA, one State official stated the following:

"Quite frankly, I'm disappointed at EPA's inconsistency and lack of leadership or direction with regard to this Act. On June 15, 1989, I received from EPA a letter which states 'EPA has no official expectations of States in implementing the LCCA.' If the Agency has 'no expectations' then what is the purpose of the questionnaire? ... Why must the State be placed in a position of defending our lack of attention to a non-funded Federal program with no official expectations?"

The above statement illustrates the State's frustration with the law. Accordingly, we believe that EPA needs to provide more assistance to the States regarding compliance with the law. EPA should prepare model plans to assist States in formulating their LCCA programs. Also, EPA should perform additional outreach to the States, assisting them in formulating and managing their LCCA programs.

During our review, we contacted 13 school districts, including ten of the largest school districts in Region III. Of the 13, ten tested their drinking water, while three did not perform any testing. Eight of the ten school districts that tested their water found lead contamination in their drinking water. The sources of the contamination were identified as the coolers, fountains and plumbing. Furthermore, the extent of the contamination may be understated because all ten school districts performing lead testing, including the two finding no lead, did not follow EPA's testing methods or did a limited amount of testing. When schools discovered dangerous levels of lead in their water, they generally disconnected the source of the contaminated drinking water. However, not all school districts notified parents, teachers and employee organizations of the availability of such testing results, as required by the LCCA.

The amount of testing used by the 13 schools in our sample varied. Two school districts tested only water coolers identified by EPA as having lead-lined storage tanks or other parts containing lead. Two school districts tested all water coolers, while six school districts tested outlets including coolers, fountains and faucets. The remaining three school districts did not test their drinking water.

The results of our review are summarized under the following headings: "Schools Finding Lead In Their Drinking Water" and "Schools Not Testing For Lead Or Testing Improperly."

Schools Finding Lead In Their Drinking Water

Our review of eight of the ten school districts discovering lead contamination revealed the following:

- o Coolers identified by EPA as imminently hazardous or containing lead parts were present in seven of ten schools and were found to contain dangerous levels of lead contamination.
- o In four of ten school districts, coolers not previously identified by EPA on its list of hazardous coolers were contaminating the drinking water.
- o In addition to coolers, six of ten school districts have discovered lead contamination from fountains and plumbing.

Five of the ten school districts had results indicating lead levels in excess of 100 ppb. EPA recommends that any drinking water fountain or tap with lead levels over 20 ppb be taken out of service immediately. The schools generally complied by disconnecting the source of the contamination. However, not all the schools notified parents, teachers and employee organizations of the availability of such testing results as required by the law.

Of the ten school districts which tested their water, only seven identified their coolers by manufacturer and model number. All seven of these school districts found in their schools coolers that were lead-lined or had lead components. One school district in Pennsylvania had a total of 1,195 water coolers and found that 65 of these coolers were included on EPA's list as "lead-lined." The school district tested the 65 coolers and found that 47 of the coolers had test results in excess of 20 parts per billion (the lead level for which EPA recommends taking the cooler out of service immediately). These test results ranged from 20 to 182 parts per billion (ppb). At one school, 15 coolers were tested and all 15 exceeded 20 ppb. After learning of this problem, School officials informed us that all problem coolers have been disconnected.

We also inquired whether the school district notified parents, teachers and employee organizations of the availability of the test results. School personnel informed us that all the appropriate parties had not been notified of the availability of the test results. The School Board was still deciding on how to handle this situation, six months after the test results. We believe that the State needs to follow up with the above school district to protect the health of the students.

Not only are lead-lined water coolers present in the schools, but also four schools found lead contamination from additional water coolers not on EPA's list of hazardous coolers. For example,

one school district in Maryland tested all 1,113 of their coolers, and found that 358 of the coolers (32%) had test results of 20 ppb or higher. Approximately 256 of the 358 problem water coolers (72%) were not previously identified by EPA as having lead-lined storage tanks or other parts containing lead. The 256 coolers represented 54 different model numbers. Additionally, 76 of the 256 coolers had lead levels of 100 ppb or higher. School officials stated that all 358 coolers were disconnected immediately.

In addition to discovering lead contamination from their coolers, six of ten school districts found contamination from fountains and plumbing. A school district in Pennsylvania tested 190 of an approximate 500 outlets in accordance with the protocol. The 190 outlets included 117 water coolers and 73 bubblers (fountains with no refrigeration units). This represented all of the school district's coolers and a sample of bubblers. Fifty, or 26 percent of the 190 outlets exceeded EPA's recommended level of 20 ppb and further, nine outlets (five bubblers and four coolers) had lead concentrations of over 100 ppb. Contrary to the expectations of the school official, only 19 of the 50 contaminated outlets were water coolers, the remaining 31 were bubblers. School officials stated that signs were posted on all 50 problem outlets and additional testing was being performed to determine the cause for the elevated lead levels. In the interim, the school officials have provided bottled water as a temporary replacement. They further anticipate that all 50 outlets will be permanently disconnected and expect to replace some of the outlets with new coolers.

Schools Not Testing Or Testing Improperly

Of the 13 school districts we reviewed, some schools did not test, while others tested inadequately. Our review revealed the following:

- o Three school districts did no testing.
- o Nine school districts did limited testing; seven of which found high lead levels.
- o Three school districts did not test in accordance with EPA protocol.

As mentioned earlier, schools were discovering lead contamination in their drinking water and children were being exposed to unnecessary health risks. Consequently, it is important for schools and day care centers to test for lead in drinking water. Furthermore, EPA recommends that testing be performed in accordance with EPA protocol so that all lead contamination is discovered. Additional testing is warranted when lead contamination is found, as suggested in the EPA protocol.

We found three major school districts, each in a different State in Region III, that were not testing their drinking water at all. All three cited the lack of outside funding combined with limited resources of their own as the cause for not testing. However, discussions with school officials from these three districts indicated that no type of comprehensive testing program was planned for the near future. In addition, one school official claimed that they do not plan to do any testing until either EPA makes it a requirement or EPA provides funding for the program.

Our review revealed that seven school districts did limited testing despite finding lead contamination. Two school districts only tested water coolers identified by EPA as having lead-lined storage tanks or lead parts. EPA's Proposed Listing dated April 10, 1989, states in part that given the limited information available to EPA on lead-containing drinking water coolers, owners are urged not to rely exclusively upon the EPA lists. EPA recommends that the drinking water from individual coolers (as well as other outlets) be tested to determine if lead is present in a particular cooler and, if so, at what level. If lead is found to be present, additional analysis should be performed to determine whether the source of lead is from the water cooler, the plumbing or both.

As discussed earlier, one school district in Pennsylvania only tested 65 of 1,195 or 5 percent of their water coolers. These were the water coolers that EPA listed as "lead-lined" in their proposed regulation dated April 10, 1989. School officials found that 47 of the 65 coolers had test results exceeding EPA acceptable limits (20 ppb). Our other finding entitled "EPA SHOULD IMPROVE PROCEDURES FOR IDENTIFYING WATER COOLERS THAT ARE NOT LEAD FREE" shows that there are numerous models unidentified by EPA with potential lead problems. For this reason, the school district should test all their water coolers.

Additionally, the school district in testing the "lead-lined" coolers took two samples: first draw; and after flushing for five minutes. Our review revealed that in 32 of 65 coolers the second test exceeded 20 ppb. When the results are high after flushing, the source of lead contamination may be coming from the plumbing. Consequently, other outlets in the schools may also have high readings as a result of contamination from the plumbing. To adequately ensure the safety of the students, the school needs to test all their outlets.

Another area of concern is where schools have tested, but have not followed the EPA protocol for sampling. Of the 13 school districts we contacted during the audit, we found that three school districts were not following an important part of EPA's protocol, requiring a first draw sample. "First draw" sample means collecting a sample before the school opens and before any water is used. Ideally, the water should sit in the pipes unused for at

least eight hours but not more than 18 hours before the sample is taken. This sample is necessary to help determine the source of the contamination. If the sample has been taken after the fountain has been used, the lead may have already been flushed out. Therefore, the test results may indicate that there was no lead contamination when there actually was lead present. Also, if the source of the contamination is the plumbing, then replacing the cooler would not remedy the problem. Without taking a first draw sample, the test results are not a valid indication of the level of lead in the drinking water from the cooler, or the source of any lead contamination that is found.

A school district in Maryland, assisted by the City Health Department, tested all water coolers in the school district. Not all test results were available at the time of our review. We examined available test results and noted that only 19 of 38 tests specified the time of the sample. Our review revealed that the 19 tests were performed from 8:30 am to 11:00 am. Consequently, it appears that the coolers may have already been used, and the sample did not represent a first draw. Since the tests may not have been performed properly, we believe the school district and Health Department have not adequately protected the health of the students. Furthermore, we found no evidence that school officials notified parents, teachers and employee organizations of the availability of test results.

CONCLUSION

Our review showed that many schools were either not testing their water or, if they were testing, may have been testing improperly. Schools testing in accordance with EPA protocol have found significant levels of lead in their drinking water, some of the results far in excess of EPA standards. Further, not all schools have notified parents, teachers and employee organizations of the availability of test results as required by the law. The health effects associated with lead digested into the body are not always immediately evident. Recent studies have shown that the consumption of small amounts of lead can have detrimental health effects. We believe that States should fulfill their responsibilities under the LCCA. States should ensure that schools test their water and correct any lead problems.

We agree that EPA's ability to ensure States comply with the LCCA is hampered by the lack of enforcement authority granted the Agency in the law. We also agree that the Agency will have a difficult time coercing States to comply with the law, especially considering that the Federal funds to assist the States have not been appropriated. However, a fundamental element of EPA's drinking water program is to ensure that water delivered to the public is safe for consumption. As the Agency responsible for safe drinking water, EPA should use its' leadership position on drinking

water to encourage and assist States in complying with the LCCA. To help achieve this goal, EPA should provide model plans of an adequate LCCA program to the States. The Agency should also perform additional outreach to the States to assist them in complying with their LCCA plans.

Agency Response and Actions Taken

Of the 13 school districts evaluated involving thousands of individual schools, 10 of the 13 districts had performed testing. This is a very high rate of initial compliance for a program with absolutely no funding support from EPA.

The conclusion implies that EPA has taken a passive role in ensuring State implementation of the LCCA. EPA has performed an extensive outreach program by conducting training and seminars, developing and distributing guidance and booklets over and above those required by the law, and by providing extensive technical assistance to States, schools, and local education institutions.

These activities are continuing. We have, in fact, initiated and continue to follow through on the two recommendations in this section (prepare model plans to assist States in formulating their LCCA programs, and perform outreach to the States on LCCA programs). In addition, we have initiated investigation for possible enforcement action of a manufacturer of water cooler valves that were improperly soldered with lead. The LCCA is only part of our overall program to provide drinking water free of adverse health risks. Unfortunately, there are not enough resources at either the Federal or State level to do any element completely.

In order to assess LCCA activities, EPA has conducted a survey of lead in drinking water programs in nine States. The results of this survey indicate that fewer than half of the school districts had tested their buildings for lead in drinking water at the time of the survey. However, approximately two-thirds that had not yet tested reported that they were planning to do so within the next 12 months. The report concludes that the level of State effort is the key factor affecting the ways in which school districts respond to their LCCA programs. The survey found that school districts are more responsive if they are in States that have disseminated the EPA manual, participated in EPA training seminars, and actively assisted schools compared with States that have not put forth the same efforts.

Auditor's Comments

We believe that a significant number of schools were not testing their water. We recognize that 10 out of 13 school districts performed testing; however, as explained on page two of the report the schools included in our sample were selected because they did test their water. This was necessary to adequately review their testing procedures. The basis for our statement came from the chart on page 14 which shows only 8 percent of the total schools in West Virginia tested their water while as little as 50 percent may have tested their water in Maryland. Our belief that a significant number of schools have performed no testing is validated by the recent EPA survey reference in the ODW response to this report. This survey estimated that fewer than half of the school districts tested their water.

We recognize that EPA has provided training, guidance and technical assistance to the States. However, despite EPA assistance, States still have not fulfilled their responsibilities in accordance with the LCCA. Accordingly, EPA should do all that it can to encourage the States to provide additional assistance to the LEAs and day care centers. As mentioned in your response, an EPA survey revealed that school districts are more responsive to lead problems in the States providing more assistance.

We realize that the LCCA is only part of EPA's overall program to provide drinking water free of adverse health risks. However, lead in drinking water imposes a serious health hazard for the schools, and this hazard needs to be adequately addressed.

RECOMMENDATION

We recommend that the Assistant Administrator for Water:

- 1) make sure that the Office of Drinking Water continues in its efforts to prepare Model Plans assisting States in formulating their LCCA programs; and
- 2) perform additional outreach to the States, assisting them in complying with their LCCA programs.

2. EPA SHOULD IMPROVE PROCEDURES FOR IDENTIFYING
WATER COOLERS THAT ARE NOT LEAD FREE

EPA was approximately one year late in providing a current and accurate list of imminently hazardous water coolers to States as required by the LCCA. We found that EPA did not: publish the list within the time frames required by the LCCA; locate and identify additional coolers to place on the list; and fully utilize data gathered on the test results of coolers. Our review of lead testing in the schools showed that some schools with limited resources were only testing water coolers on EPA's list of hazardous coolers. By limiting their testing, these schools may not have tested all dangerous coolers, exposing their students to unnecessary health risks. EPA's delay in publishing the list of dangerous coolers may have also delayed the Consumer Product Safety Commission (CPSC) in issuing an order to the manufacturers of these coolers. The order, according to the LCCA, would have required manufacturers to repair, replace, or recall and provide a refund for such coolers by November 1, 1989. Consequently, many school districts with hazardous coolers were awaiting action by both CPSC and the manufacturers. EPA officials attribute deficiencies in publishing the list to: insufficient resources; enormous number and type of water coolers; and the inability to obtain water coolers for testing. We also believe uncertainties in the division of responsibilities between EPA and CPSC may have resulted in inefficient and ineffective procedures for identifying water coolers to be tested.

We recommend that the data gathered on test results of coolers be used to prioritize the remaining workload of water cooler testing and to determine if water cooler manufacturers are not obeying the lead ban. We also recommend that EPA execute an interagency agreement (IA) with CPSC delineating each Agency's responsibility in testing water coolers.

The LCCA provides that EPA should identify each brand and model of drinking water cooler which is not lead free, including each brand and model of drinking water cooler which has a lead-lined tank. After notice and opportunity for public comment, EPA will publish a list of drinking water coolers, by brand and model, which are not lead free. To accomplish this task, EPA will use the best information available to the Agency. The Agency shall publish the list by February 8, 1989. EPA should continue to gather information regarding lead in drinking water coolers and shall revise and republish the list from time to time, as may be appropriate, as new information or analysis becomes available regarding lead contamination in drinking water coolers. The LCCA further provides that all drinking water coolers identified by EPA on the list as having a lead-lined tank shall be considered to be "imminently hazardous consumer products." The CPSC, after notice and opportunity for comment, including a public hearing, is

required to issue an order requiring the manufacturers and importers of such coolers to repair, replace, or recall and provide a refund for such coolers by November 1, 1989.

EPA Did Not Publish the List of Hazardous Coolers Within the Time Frames Required by the LCCA

EPA was approximately one year late in publishing the final list of coolers even though most of the information used by EPA was readily available prior to enactment of the LCCA. Likewise, it took EPA five months after the enactment of the LCCA to publish the proposed list. EPA also allowed an additional five months for comments to the proposed list. The delay by EPA may have precluded CPSC from issuing an order requiring manufacturers to remedy the hazard which may include refunds to the schools. Additionally, this delay may have contributed to the lack of lead testing by the schools as well as the lack of involvement on the part of State agencies. We found that EPA did not issue the final list until January 18, 1990, almost one year after the February 8, 1989, deadline required in the LCCA. Various parties (EPA, CPSC, State agencies, and schools) have been mandated responsibilities under the LCCA. In order to ensure all the above parties comply with their responsibilities, EPA has to set an example by timely compliance with the LCCA.

According to the LCCA, EPA has to publish a list of water coolers which are not lead free. The term "lead free" means that each part or component of the cooler coming in contact with drinking water contains no more than eight percent lead. Further, any solder, flux or storage tank interior surface in contact with drinking water must be less than 0.2 percent lead. The list of lead free coolers must also separately identify each brand and model of drinking water cooler which has a lead-lined water tank. To adequately identify a water cooler with a lead-lined tank the cooler must be disassembled and the tank tested.

The proposed list was published on April 10, 1989, and had 108 model numbers classified as not lead free. EPA's basis for identifying the 108 non-lead free model numbers was information submitted by the manufacturers. Three manufacturers, in response to a Congressional survey in December 1987, indicated that lead had been used in at least some models of their drinking water coolers. This information provided by the manufacturers was made available to EPA by February 1988, eight months prior to the enactment of the LCCA. Consequently, EPA did not have to wait for additional information on the non-lead free models. The proposed list also had six model numbers listed as lead-lined. As a result of testing, EPA determined as early as August 1988, that four of the six models were lead-lined. Thus, EPA did not have to wait five months to publish the proposed list of lead-lined coolers.

After issuing the proposed list on April 10, 1989, EPA originally allowed 45 days, until May 25, 1989, for any written comments. Our review of these comments revealed that EPA extended the comment period until November 1989. Some of these comments were not even on the proposed list, but instead represented additional information on other water coolers. EPA personnel informed us that since this was "best available" information, and according to the Law, they had to also consider this information in publishing the final list. As a result, the final list was not issued until January 18, 1990, and included the model numbers on the proposed list, and also proposed four additional models as lead-lined.

EPA's delay in issuing the list of hazardous coolers may have affected the compliance of LCCA requirements by other parties such as CPSC and State agencies. CPSC in a letter dated July 24, 1989, informed the Chairman of the Congressional Committee on Energy and Commerce that the Commission's ability to meet the statutory deadline under the LCCA was tied directly to the EPA's publication of the final list of coolers with lead-lined tanks. The letter further provided that the Commission would be unable to make the deadline for several reasons, one of which was that EPA still did not publish the final list. In addition to CPSC, the delay in publishing the list also affected the States. According to the LCCA, State agencies were required by February 1, 1990, to ensure corrective action was taken on any water cooler found to contribute lead to drinking water. Since EPA's final list was not published until January 18, 1990, the States were only allowed 13 days to ensure corrective action was taken on the coolers described in the list.

We believe that EPA should have acted sooner in publishing both the proposed and final listings of water coolers so that the information could have been disseminated to the waiting school districts in a timely manner. EPA should not have delayed the final listing to include additional proposed models. It would have been more beneficial to issue two lists: a Final list for models previously proposed; and a Proposed list for any new models. Additionally, EPA needs to develop procedures for republishing and revising future listings of hazardous coolers. Time frames need to be established and complied with in issuing both proposed and final listings of non-lead free water coolers. State and school officials during the course of our review repeatedly reminded us that EPA had been delinquent in publishing the list. It is important for EPA to expeditiously comply with the LCCA because the Agency should set an example for all other parties (CPSC, States, schools) required to comply with the LCCA.

EPA Did Not Aggressively Attempt To Locate and Identify Additional Water Coolers To Place On the List

EPA has made limited attempts to locate and identify potentially hazardous water coolers. It is estimated that there may be as many as 600 different model numbers. As of August 1989, EPA had tested 33 water coolers, representing only 18 different model numbers. However, 21 of these 33 coolers representing 12 different model numbers were tested prior to enactment of the law (November 1, 1988). From September 1988 to June 1989, only three additional coolers were tested, two of which were the same model number. In the following three months (July to September 1989) another nine coolers were tested, representing only four additional models. To test only 12 water coolers over a 12 month period (September 1988 to September 1989) appears inadequate considering the vast number of different coolers. Additionally, some manufacturers contend that different materials may be used in the same model number. Therefore, EPA could potentially be responsible for testing thousands of coolers.

We found that some schools with limited resources restricted their testing to only EPA identified lead-lined tanks. These schools may not have been identifying all their hazardous coolers, thus exposing their students to unnecessary health risks. If schools with limited resources can at best only test coolers on EPA's list, it is important for EPA to include as many imminently hazardous coolers on the list as possible.

EPA attributed the lack of testing to inadequate resources for obtaining, transporting and testing the water coolers. Also, EPA personnel have stated that schools are reluctant to donate coolers to EPA because it may impact any possible corrective action offered by the manufacturers. Furthermore, we found that EPA was allowing their laboratory to assist CPSC in testing more coolers of models already identified by EPA as lead-lined.

In both fiscal years 1989 and 1990, EPA received no money in its budget for testing water coolers. Before testing a water cooler, EPA has to locate, obtain and transport the cooler to its laboratory in Cincinnati. Additionally, some schools requested refunds before they allow EPA to remove the coolers. This happened because testing of the coolers requires cutting open the tank which renders the cooler inoperable. So far the coolers tested have been donated by such parties as the U.S. Navy, Portland School District, Colby College and the Minnesota Health Department. EPA has used funds targeted for other activities to secure these coolers. However, EPA personnel explained that these funds are very limited.

The lack of identifying additional problem coolers is also caused by EPA assisting CPSC. In correspondence to EPA, CPSC stated that they will need more assistance from EPA if they are to accomplish their responsibilities and issue an order to the

manufacturers. Specifically, CPSC informed EPA that the water coolers identified by EPA as having lead-lined tanks may not be lead-lined throughout the entire model number. Consequently, CPSC will have to test more than one cooler of each model number before issuing an order to the manufacturer. CPSC is uncertain of the amount of testing needed to issue the LCCA order as well as the availability of resources necessary to accomplish the testing. Accordingly, EPA assisted CPSC by using their laboratory to test water coolers already identified as lead-lined by EPA.

By using EPA's limited testing resources to assist CPSC in testing models already identified as lead-lined, the Agency was not in a position to test and add new coolers to the list. According to the LCCA, EPA has to identify non-lead free coolers. It is CPSC's responsibility once the cooler has been identified by EPA as lead-lined to issue an order to the manufacturer for corrective action. We believe it is more important for EPA to identify additional lead-lined and lead component coolers before beginning to retest coolers already determined to be imminently hazardous (lead-lined). It is important for EPA to ensure the list contains as many non-lead free coolers as possible because schools are relying on EPA to identify coolers requiring testing. Additionally, EPA should establish an interagency agreement (IA) with CPSC delineating each of the Agencies' responsibilities under the LCCA. The IA should include procedures for gathering and using test information from the schools, as well as specify the degree of testing by both Agencies.

EPA Has No Procedures To Ensure Obtaining Best Available Information

Our review showed that the Headquarters Office of Drinking Water had not taken an active enough role in obtaining the information necessary to publish a list of hazardous water coolers. EPA had no formal procedures for gathering and utilizing test information from the schools, which could help determine which coolers had harmful amounts of lead. Schools that tested their drinking water discovered lead contamination in water coolers not previously identified on EPA's list. EPA may not be notified of these results. Consequently, EPA may not be cognizant of the additional tainted coolers, thus not ensuring the accuracy and timeliness of the list. The Agency needs to work with the States and school districts to ensure timely submittal of all test results to EPA indicating potentially hazardous water coolers.

In July 1989, CPSC started gathering test data from school districts regarding drinking water coolers. As of December 1989, CPSC estimated that it had forwarded information from approximately 300 school districts to EPA. This information included types of water coolers and results and protocol of water testing.

We reviewed test results submitted by 42 of the 300 school systems. Our review disclosed that schools found approximately 357 lead contaminated water coolers from seven different manufacturers not included on EPA's listing of non-lead free coolers. Some of the test results were available as far back as April 1988, almost 17 months before EPA received them from CPSC. One of the school systems we contacted had tested every water cooler in their district. Of the 1,113 coolers tested, 358 had results of 20 ppb or higher. Approximately 256 of the 358 problem water coolers were not previously identified by EPA as having lead-lined storage tanks or other parts containing lead. If EPA had data collection procedures in place, the Agency could have received and evaluated some of this information as early as November 1988. This may have allowed EPA to publish a more current and accurate list of problem coolers.

Even though the LCCA requires EPA to use the best information available in formulating their list of hazardous coolers, EPA personnel have informed us that test results are not conclusive evidence that the tank is lead-lined. However, EPA personnel do agree that test results are a good indicator of a water cooler with a potential lead problem. Furthermore, the timely retrieval of testing results from the schools is necessary for EPA to prioritize their limited laboratory resources. Given the large number of brand and model numbers of water coolers, and EPA's limited funding, it is impossible for EPA to test every cooler. Consequently, EPA should use this information from the schools to pinpoint the most suspicious coolers with potential lead contamination. This information is a vital source for determining the frequency for which drinking water from particular brands and models has been tested and found to contain excessive lead. Once identified, efforts should be made to obtain these coolers and have them sent to EPA's laboratory for testing.

CONCLUSION

EPA has not developed procedures that enabled it to provide a current and accurate list of hazardous water coolers. EPA took too long to publish the first proposed and final listings of hazardous water coolers. There was no need to delay the proposed listing because the information on the hazardous coolers was already available to EPA prior to the enactment of the LCCA. EPA also allowed the comment period on the proposed listing to extend five months beyond the date in the proposed regulations. This further delayed issuing the final listing, and may have delayed CPSC from initiating an order to the manufacturers for corrective action.

In addition to not publishing the list on time, EPA only tested 33 water coolers of an estimated 600 different model numbers. Accordingly, there is potentially over 500 models that could need testing. We believe it is more important to identify

additional hazardous coolers before assisting CPSC in reconfirming the coolers already identified as hazardous, given EPA's limited laboratory resources. Further, EPA did not have adequate procedures to timely obtain data from schools performing testing. EPA's inability to obtain and evaluate test results from schools in a timely manner has decreased their ability to identify additional hazardous water coolers.

Agency Response and Actions Taken

It is true that EPA did not publish the proposed and final list of coolers in the Federal Register within the statutory deadlines. To preclude delays to State implementation of the LCCA programs, we distributed the proposed list to States in January 1989, in advance of the statutory deadline for publishing a proposed list. We recommended that States provide this list to schools. Most States, as your audit found in Region III, worked from this list to begin the tremendous effort of testing water coolers throughout the country.

Verifying the presence of lead lining in a water cooler tank, as required by the LCCA, involves the procurement and disassembly of the cooler and cutting open the tank. Sampling and quantitatively testing the tank's interior surface is a complex, time-consuming and costly procedure. Additional time was required to develop a standardized testing protocol to assure the reliability of these and future test results. Given the limited resources available to conduct these activities, publication of the final notice occurred as quickly as possible. We plan to periodically update the list whenever we get significant additional information.

The report concludes that "EPA's inability to obtain and evaluate test results from schools in a timely manner has decreased their ability to identify additional hazardous water coolers." We disagree. The testing protocol for schools is designed to determine whether the amount of lead at the tap exceeds EPA's recommended action level of 20 parts per billion (ppb), not to determine whether the cooler is lead free. For the purpose of defining coolers as not lead free under the LCCA's provisions, the data are of limited value to EPA without extensive quality assurance procedures and follow-up testing on cooler tanks or other parts. We believe the resources needed to collect and analyze these data can be better utilized in other critical program areas.

The report cites EPA's failure to publish the final list as one of the reasons for CPSC's delay in ordering manufacturer recall of coolers. Delay in publishing the list was not a controlling factor. Because it was not possible to determine whether all water coolers in the specific model series had lead-lined tanks, CPSC needed additional information to develop the legal case necessary

to order a recall. CPSC, in fact, began work with the manufacturers long before issuance of the final list -- it was not a significant factor in delay of an order.

The report criticizes EPA for expending scarce resources by providing testing assistance to CPSC and recommends a formal interagency agreement defining each Agency's responsibilities. We believe we already have an appropriate and effective working relationship with CPSC. As a result of our assistance to CPSC, the Commission negotiated a consent order agreement (COA) with the manufacturer for the replacement or refund for lead lined water coolers. This COA was published in the Federal Register on June 1, 1990.

Auditor's Comments

We recognize that verifying the presence of lead in a water cooler is a resource-intensive test. Accordingly, this constraint makes it important for EPA to develop adequate procedures for issuing timely revisions to the lists. Procedures should ensure that resources are used as efficiently and effectively as possible.

We believe that adequate procedures should include analyses of the testing data accumulated by the schools. This data provides a good source for identifying potentially hazardous water coolers. We realize that just because the water coming from the cooler has high levels of lead does not necessarily mean that the cooler contains lead components. However, several schools reporting excessive amounts of lead from a particular manufacturer and model number may be the best indication EPA could have in identifying problem water coolers. EPA laboratory personnel in Cincinnati informed us that test results from the schools would be useful in prioritizing which coolers need to be analyzed for lead. Consequently, EPA should accumulate and analyze data from the schools to ensure that potentially hazardous coolers are targeted for testing.

We disagree that EPA's failure to publish the list timely was not a factor in CPSC's delay in ordering manufacturer recall of coolers. According to the LCCA, Section 1463, the CPSC could not issue an order until the manufacturers mentioned on the list had an opportunity to comment. The purpose of the proposed list was to allow the manufacturer to offer comments. By not publishing the proposed list until April 1989 (five months after enactment of the LCCA) and by extending the comment period an additional five months, EPA delayed CPSC from issuing the order. CPSC, according to the law, could not act until the comments were received from the manufacturers.

Finally, we believe that EPA and CPSC need to formalize each Agency's responsibilities under the LCCA in an interagency agreement. In September 1989, CPSC started forwarding cooler information (inventory data, test results) collected by CPSC since July 1989 from schools to EPA. No formal procedures exist for the timely exchange of this information between the two Agencies. Since the LCCA requires EPA to use the best information available to it, the Agency needs to formalize procedures for obtaining this information from CPSC. Additionally, the interagency agreement should specify each Agency's responsibility concerning testing of the coolers. EPA should devote its stated limited resources to identifying additional hazardous coolers before assisting CPSC in reconfirming the coolers already identified as hazardous. This is necessary because schools with limited funding are only testing coolers on EPA's list, and therefore may be exposing their students to tainted water from untested coolers.

RECOMMENDATION:

We recommend that the Assistant Administrator for Water:

- 1) Establish procedures and definite timeframes for the issuance of revisions to the EPA list of Drinking Water Coolers That Are Not Lead Free.
- 2) Develop and execute an interagency agreement (IA) with CPSC defining each Agency's responsibilities under the LCCA. The IA should specify which Agency has responsibility for any follow-up testing on models already identified by EPA as hazardous. Also, the IA should establish procedures for exchanging water cooler information requested by CPSC from the schools.
- 3) Develop procedures to ensure that data gathered on test results of coolers is used to prioritize the remaining workload of untested water coolers, and is also used to determine when water cooler manufacturers are disobeying the lead ban.

3. EPA AND THE STATES HAVE NOT ADEQUATELY ENSURED THAT THE PUBLIC HAS BEEN INFORMED ABOUT LEAD IN DRINKING WATER AND THE LEAD BAN

EPA did not aggressively pursue the States' lack of enforcement concerning public notification and lead ban requirements of the Safe Drinking Water Act (SDWA). States did not ensure public water systems notified their customers of the dangers of lead in their drinking water. Also, States did not adequately enforce the prohibition on use of lead pipes, solder and flux in plumbing providing water for human consumption. States were required to enforce both of the above requirements by June 19, 1988. We found that less than 50 percent of the public water systems in Region III complied with the public notification requirements and the States are uncertain if contractors are still using illegal lead pipe, solder and flux. As a result, the public was not adequately informed of the dangers and potential presence of lead in their water and may still be having lead plumbing supplies installed in their homes. States cite a lack of resources as well as a lack of direct authority to enforce the lead ban requirement. The ban of lead pipes and solder is generally included in the State building codes and accordingly is enforced by the local building inspectors, not environmental agencies. We recommend that EPA take stronger measures to encourage States to comply with the lead requirements of the SDWA.

In accordance with section 1417 of the Safe Drinking Water Act, as amended June 19, 1986, each public water system shall identify and provide notice to persons that may be affected by lead contamination of their drinking water where such contamination results from either or both of the following:

- 1) the lead content in the construction materials of the public water distribution system.
- 2) Corrosivity of the water supply sufficient to cause leaching of lead.

The contents of the notice shall provide a clear and readily understandable explanation of:

- 1) the potential sources of lead in the drinking water;
- 2) potential adverse effects;
- 3) reasonable available methods of mitigating known or potential lead content in drinking water; and
- 4) the necessity for seeking alternative water supplies, if any.

Additionally, any pipe, solder, or flux which is used after the enactment of the SDWA Amendments of 1986, in the installation or repair of:

- 1) any public water system; or,
- 2) any plumbing in a residential or nonresidential facility providing water for human consumption which is connected to a public water system shall be lead free (within the meaning defined in the SDWA).

The above requirements should have been enforced by States as of June 19, 1988. If EPA determines that a State is not enforcing the above requirements, the Agency may withhold up to five percent of Federal funds available to that State for Public Water System Supervision (PWSS) grants. Discussed below is the status of EPA's and the States' role in enforcing both these requirements. The discussion is presented in two sections: 1) lead public notification; and 2) lead ban (on pipe, solder, and flux).

Public Notification of the Hazards of Lead In Drinking Water

State officials have not adequately enforced the requirement that public water systems (PWSs) notify their customers of the dangers of lead in their drinking water. Furthermore, EPA Region III officials have not taken adequate measures to ensure States perform adequate enforcement of the lead ban. As of December 3, 1989, EPA estimated that 43,966 of 62,223 or 71 percent of the public water systems nationwide notified their customers; while in Region III, only 2,894 of 5,948 or 49 percent of the PWSs complied with the notification requirement. The chart below indicates the record of compliance by the States in Region III.

| <u>STATE</u> | <u>TOTAL NUMBER OF PUBLIC WATER SYSTEMS</u> | <u>ESTIMATED NUMBER OF PWS ISSUING NOTICE</u> | <u>PERCENT OF TOTAL</u> |
|---------------|---|---|---------------------------------|
| Delaware | 348 | 133 | 38.2% |
| D.C. | 2 | 2 | 100.0% |
| Maryland | 565 | 312 | 55.2% |
| Pennsylvania | 2,463 | 605 | 24.6% |
| Virginia | 1,774 | 1,330 | 75.0% |
| West Virginia | 796 | 512 | 64.3% |
| TOTAL | <u>5,948</u> | <u>2,894</u> | <u>48.7%</u> |

As shown above, only 48.7 percent of the PWSs complied with public notification requirements as of December 1989, approximately 18 months later than the due date of June 19, 1988. EPA Region III in their response to the draft report indicated that the 49 percent of the PWSs in compliance serve 88% of the population. The 51 percent of the PWSs not complying with the notification represent smaller

systems serving less people generally in rural areas. We believe Region III officials need to take more aggressive action with the State agencies so that PWSs in rural areas comply with the law.

Congress has made clear the purpose of the special public notification requirement for lead. As stated in the Safe Drinking Water Act, notice is to be given to persons who "may be affected by lead contamination of their drinking water." Notification is required unless the system can prove that there is no lead-containing material in the water system, including the residential and nonresidential portions. The law requires that this notice be given even if there is no violation of the Drinking Water Standard for Lead. The regulations give systems several options for making this notice: mail, hand delivery, newspapers and posting. Systems can use additional means of notice (electronic media, for example) at their discretion or at the discretion of their State regulatory agency. The States have to ensure that PWSs comply with congressional intent and adequately inform their customers of the dangers of lead contamination in their drinking water.

Lead Ban

Similar to the Public Notification Requirement, States in Region III were not adequately ensuring the enforcement of the lead ban. We visited four States in Region III (Maryland, Pennsylvania, Virginia and West Virginia) and discovered that the States were uncertain as to the degree of enforcement of the lead ban. States informed us that the lead ban should be incorporated in State and local plumbing codes and thus is enforced by county plumbing inspectors. We found that States were unaware of the level of effort of the plumbing inspectors in enforcing the lead ban. Additionally, States were not being informed of any violations, or if adequate corrective action is taken when violations occur. We attribute the lack of oversight by the States in part to EPA's inability to define effective implementation of the lead ban by the States. We recommend that EPA develop an adequate enforcement strategy so that States can properly implement their lead ban responsibilities.

In order for a State to receive its full Public Water System Supervision (PWSS) grant in FY 88, EPA only required the State to submit a certification regarding lead. This State certification had to describe: its lead ban and whether it covered the entire State; and the procedures the State used or was using to implement the lead public notification requirements. The Regions were to review this certification and other available information against the requirements of the SDWA to determine whether to approve the certification. The certification had to be submitted to EPA by March 31, 1989. All States in Region III submitted certifications except Pennsylvania. As a result, Region III, in accordance with Section 1417 paragraph c of the SDWA, penalized Pennsylvania by withholding five percent or \$61,330 of their FY 89 State program

grant for supervision of public water systems. Additionally, Pennsylvania's implementation of the lead ban is not expected to be in effect until FY 1991 and EPA plans to withhold five percent or \$76,480 of their FY 90 State program grant.

In FY 1990, EPA planned to require the States to demonstrate effective implementation of the lead ban. Regions were to require States to provide information which demonstrates that the lead ban regulations are being uniformly and effectively enforced throughout the State and that violations are being acted upon. The information should include a summary of State lead ban program compliance and enforcement activities, including a description of the mechanisms used to enforce the lead ban and the level of enforcement activity. This type of information was not available to ensure effective enforcement at the time of our review.

We believe that EPA has been too lenient with the States. The SDWA specifically states that enforcement of the lead ban should begin on June 19, 1988. To allow the States until FY 1990 before demonstrating adequate enforcement is inappropriate. The Agency should have required the States to demonstrate enforcement in FY 1989.

The four States we visited in Region III have laws which already ban or will ban the use of lead pipes, solder or flux in excess of legal limits. Generally, plumbing supply stores no longer carry lead solder or flux. However, these items can still be readily purchased at household supply stores. The task of ensuring these lead products are no longer used in household construction comes under the building inspector, more specifically, the plumbing inspector.

We contacted plumbing inspectors in ten counties located in Maryland, Virginia and West Virginia. Discussions with a State official in West Virginia revealed that their State has no statewide building codes and that probably only major cities would be conducting building inspections. We contacted five counties and one city in West Virginia to determine their enforcement of the lead ban. We found that three counties don't even have plumbing inspectors. While the other two counties and one city had inspectors, we were told that they only check for lead solder in the plumber's tool box. Generally, no visual inspection of soldered joints is included as part of their inspection. There have been no violations found in these five counties and one city. However, with this limited amount of enforcement it is possible that lead solder may still be used yet would go undetected.

We also interviewed inspectors in two counties in both Maryland and Virginia who stated that they routinely look for lead soldering. However, most of them did not use the lead testing kit in the field. Instead, they claim that they visually check the joints and also inspect the plumber's tool box. Should the

inspector identify solder that appears to contain lead, the inspector typically brings a sample back to the office where the chief plumbing inspector will use the test kit to test the solder for lead content. In addition, one county in Maryland takes samples of solder, without notice, from different plumbers (approximately six samples per month) and tests the solder with the kit. Thus far, they have found one violation. Inspectors we interviewed stated that there are usually four separate inspections of new construction with many things to look for during each inspection. Looking for lead solder is not a high priority during these inspections. Additionally, inspection forms used by inspectors as a type of checklist generally do not contain a line item for inspecting solder. Thus, we believe it is uncertain whether every inspection includes an adequate assurance that only lead free solder is being used.

As mentioned earlier, we visited two counties in both Maryland and Virginia. Listed below is a chart describing each county's activities regarding the enforcement of the lead ban.

| <u>STATE</u> | <u>COUNTY VISITED</u> | <u>NUMBER OF INSPECTORS</u> | <u>NUMBER OF INSPECTIONS PER MONTH</u> | <u>TYPE OF SOLDER INSPECTION</u> | <u>NUMBER OF SOLDER VIOLATIONS</u> |
|--------------|-----------------------|-----------------------------|--|----------------------------------|------------------------------------|
| Virginia | A | 4 | 1000 - 1100 | Visual | 0 |
| | B | 6 | 1800 - 2300 | Visual | 7* |
| Maryland | A | 4 | 1200 - 1400 | Visual | 1 |
| | B | 6 | 1500 - 2000 | Visual | 0 |

* The seven violations included six plumbers and one homeowner.

As shown in the chart above, our review discovered minimal violations despite the large number of inspections. In the case of violations, county officials stated that all plumbing work was removed and new plumbing was installed using lead free solder. The reported violations were generally small contractors outside the county. However, we did note that the shortage of inspectors in many counties combined with the large workload of inspections cast some doubt on the their ability to adequately detect the use of lead solder.

We also found that plumbing inspectors were uncertain how to enforce the lead ban. The SDWA requires that all pipes and pipe fittings contain not more than 8.0 percent lead. According to the inspectors we interviewed, lead pipe is easily identified through the dark grayish color and soft, pliable material. However, it is not easy to determine the lead content in copper pipes because these pipes are composed of copper alloys containing various amounts of lead. The American Society of Testing Materials publication (ASTM Volume 02.01) lists the percentages of metals contained in various types of copper alloys such as brass and

bronze. The publication reveals that there are types of copper alloys with as much as 24 percent lead. It is possible that some copper pipe and fittings used for potable water could contain these alloys. We obtained this information from a county plumbing inspector in the State of Maryland who expressed concern over how to enforce the 8.0 percent lead requirement for pipe. The chief plumbing inspector stated that he is unaware of a method for enforcing this requirement when inspections are conducted. We believe that EPA should issue guidance to the States on how to enforce the requirement that not more than 8.0 percent lead is used in any pipes or pipe fittings.

Agency Response and Actions Taken

We share your concern that States have not aggressively implemented the lead ban. In October 1988, and again in August 1989, we issued guidance indicating factors Regions should take into consideration when deciding whether to withhold five percent of State grant funds for States not fulfilling their lead notification and lead ban requirements. We believe that this guidance contains the essential elements of an effective, enforceable lead ban. Several Regions have aggressively implemented this guidance in FY 1990 and performed detailed reviews of State lead ban programs as part of their annual review of State programs.

Region III was the only Region in FY 1990 to withhold five percent from a State for not implementing the lead ban. The Region took charge of the PA situation by issuing over 2,500 letter notices to public water systems to advise them of the Lead Public Notification requirement after the State refused to issue the notices due to lack of resources and a mandate in their legislation. This is an aggressive measure to protect public health.

It should be noted that one State in Region III issued written administrative orders to 122 public water systems that had failed to issue Lead Public Notification. The State was able to ascertain these systems' compliance through final follow-up telephone calls.

The report is misleading factually because it does not include the percentage of the population in Region III that were issued notices about lead. Lead exposure from multiple sources is a problem especially acute in urban areas. Our experience is that the larger supplies, which tend to be in more urban areas, did comply with the public notification requirements. We believe approximately 88 percent of the population in Region III received appropriate notification, and that we have done a better job of protecting public health than the 25-49 percent as the report would indicate.

The report recommends that EPA consider requiring proper labelling of products complying or not complying with lead free standards in the SDWA. EPA has no authority to impose or enforce such a requirement.

The recommendation that Region III take more aggressive action to enforce the lead ban through the States needs further clarification to make it useful. The statute does not provide EPA with any direct enforcement tools other than withholding "up to 5 percent of the Federal funds to a state" in the PWSS grant. Region III has done this in Pennsylvania for FYs 1989 and 1990, but it does little to protect health of citizens in a direct way.

Region III has recently completed a review of each of its States' lead ban activities. Although the Region does not plan to withhold FY 1990 grant funds from any State other than PA, it is considering the use of specific grant conditions for one or two other States for FY 1991.

In order to improve compliance with the lead ban, we are engaged in a number of new initiatives including: 1) an information program targeted towards the manufacturers, distributors, wholesalers and retailers of solders, fittings and plumbing fixtures; 2) development of a model program that may be used by the States to enforce the lead ban; 3) development and delivery of training seminars to remedy program weaknesses to enforce the lead ban and to assess the alternatives to faucets and fixtures containing lead; and 4) to develop additional educational materials dealing with lead in drinking water.

Auditor's Comments

We contend that EPA needs to more aggressively enforce the public notification and lead ban requirements of the SDWA. To allow over two years (June 19, 1988 to August 31, 1990) before the States have to demonstrate effective enforcement of the lead ban does not represent adequate oversight by EPA for ensuring State compliance. Our review showed that States in Region III have exerted marginal effort in determining that the lead ban requirements had been effectively implemented. We recognize that EPA Region III did withhold 5 percent of the Public Water System Supervision Grant Funds from Pennsylvania. This, however, represented an extreme example, whereby the State passed legislation which will not implement the lead ban until FY 1991. Since the SDWA required an effective implementation date of June 19, 1988, EPA had no alternative but to withhold the funds.

The response notes that the report may be misleading because the public water systems (50%) that did not notify their customers in Region III generally represented smaller systems serving less people. The response also states that these smaller systems are

usually in rural areas which have less lead exposure from multiple sources. We still believe that 50 percent of the public water systems is significant even if they only serve 12 percent of the State's population.

We agree that EPA has no authority to require proper labeling of products complying or not complying with lead free standards in the SDWA. However, EPA should request the Consumer Product Safety Commission (CPSC) to investigate the possibility of requiring a Federal warning on pipes, solder and flux not complying with lead free standards.

Finally, we agree that your initiatives for improving compliance with the lead ban should improve the overall effectiveness of the program. The information program for manufacturers and distributors, the development of model programs for States, as well as the training seminars and distribution of educational materials, should assist the States in fulfilling their lead ban requirements.

RECOMMENDATION

We recommend that the Assistant Administrator for Water develop an enforcement strategy to assist States in effectively implementing the lead ban. The strategy should also assist State officials and plumbing inspectors in adequately determining the acceptability of various types of pipe, solder and flux. Also, the Agency should provide guidance to the Regions requesting States to periodically report lead ban enforcement actions to Regional Offices. Consideration should also be given to requesting CPSC to ensure proper labeling of products not complying with lead free standards specified in the SDWA.

4. EPA NEEDS TO ELIMINATE CONFUSION OVER LEAD MCL

The Agency has not complied with the Safe Drinking Water Act (SDWA) requirement for revising the maximum contaminant level (MCL) for lead in drinking water. The SDWA required EPA to revise the existing MCL for lead by June 1988. More than two years elapsed since this deadline, and the Agency still has not revised the MCL for lead in drinking water. Furthermore, we found that confusion exists among schools and laboratories over EPA's acceptable limits of lead in drinking water from school coolers and fountains. The current maximum contaminant level for lead is 50 parts per billion (ppb). When Public Water Systems providing drinking water to the public exceed this limit, they are in violation of the SDWA. EPA, in its guidance document for lead in schools, recommends that any water source for human consumption exceeding 20 ppb be taken out of service immediately. Laboratories regularly testing water for public water systems also may perform testing for school districts. Some of these laboratories have been notifying all schools with test results of less than 50 ppb that they are within the limits established by the SDWA. These labs did this without making reference to EPA's 20 ppb guidance for schools. Accordingly, we found school districts leaving in service water coolers and fountains having test results between 20 ppb and 50 ppb. We believe EPA needs to clarify any confusion which may exist between guidance for the schools and regulations used by various laboratories.

The current MCL for lead is 50 ppb. Water suppliers, operators of 60,000 public water systems, must ensure water delivered to their customers remains below this amount (50 ppb), otherwise they will be in violation of the SDWA. EPA promulgated this MCL as an interim drinking water regulation in 1975. In November 1985, EPA proposed a recommended MCL for lead of 20 ppb. This regulation was never finalized. On August 18, 1988, EPA proposed a goal for lead of zero ppb, which leads to even more confusion. This regulation is expected to be finalized by EPA in December 1990. In January 1989 EPA issued a guidance document for assisting schools and day care centers in testing for lead. This document recommends that outlets exceeding 20 ppb be taken out of service immediately.

Our review of testing data revealed that laboratories are providing conflicting information to schools concerning allowable limits of lead in the water. We found that seven laboratories located in Maryland and Virginia were informing schools that test results less than 50 ppb were within EPA limitations. This contradicts the EPA guidance document for assisting schools in testing lead in drinking water, which recommends that any outlet exceeding 20 ppb be taken out of service immediately. We noted one laboratory's cover letter attached to the test results provided that drinking water may contain up to 50 ppb and still be considered safe for human consumption. Further, two of the six

test results attached to this letter exceeded 20 ppb but were less than 50 ppb. Additionally, we found other tests from the seven laboratories which were greater than 20 ppb but less than 50 ppb. Accordingly, confusion exists on the part of school officials as to what is the acceptable amount of lead in drinking water.

Discussions with one school official revealed that testing was performed on approximately 420 outlets from July through September 1989. The school official discovered that 118 or 28 percent of the 420 outlets had test results exceeding 20 ppb. Seventy-six of those outlets had test results between 20 ppb and 50 ppb. However, an official from this school district stated in January 1990 that only those outlets exceeding 50 ppb were taken out of service. Therefore, the 76 outlets were still in operation and were contributing hazardous levels of lead to the school children consuming the water. This same official claimed that EPA's current maximum contaminant level for lead is 50 ppb and that the 20 ppb is only recommended and not required. Consequently, no action was taken unless the test results exceeded 50 ppb.

We recognize the arduous task imposed on EPA of developing an acceptable limit of lead in the drinking water. However, until this limit is derived, we believe EPA needs to eliminate any confusion which exists over what is the acceptable amount of lead in the drinking water.

Agency Response and Actions Taken

We agree that there is confusion over what is an acceptable amount of lead in drinking water. In order to avoid this confusion, we developed an Alert for Laboratory Directors. This Alert was distributed to the States via the EPA Regions. EPA requested that the States forward a copy of this Alert to each certified laboratory. The Alert requests Laboratory Directors' assistance in notifying school administrators and clients that EPA recommends they take remedial action whenever lead levels exceed 20 ppb at one of their drinking water outlets.

We expect this Alert to not only reduce confusion caused by differences between the current MCL and the recommended level for remedial action on individual water outlets, but also result in additional schools testing. Within a month of the Alert's distribution, we have received dozens of calls from laboratories nationwide requesting information they can provide to schools in encouraging testing for lead.

Auditor's Comments

We believe the swift action taken by EPA will provide beneficial results to the overall Program.

RECOMMENDATION

We recommend that the Assistant Administrator for Water ensure laboratories certified to test for lead are aware of and accurately inform their customers of EPA's recommended revised limit of 20 ppb. We suggest that you send letters to the States explaining the difference between the current MCL of 50 ppb and your recommended action for samples from individual outlets exceeding 20 ppb. The letter should request States to similarly inform their certified laboratories to advise their clients of EPA's revision.



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

AUG 15 1990

OFFICE OF
WATER

MEMORANDUM

SUBJECT: Draft Report on Lead in Drinking Water Program
Audit Number E1HWF9-03-0316

FROM: LaJuana S. Wilcher *[Signature]*
Assistant Administrator (WH-556)

TO: Kenneth A. Kontz
Assistant Inspector General for Audit (A-107)

Thank you for your memorandum of July 12, 1990, providing draft findings developed during your audit of the Lead in Drinking Water Program. We appreciate the opportunity to review this report and to provide our comments at this phase of your audit. We find that your conclusions and recommendations in this report are similar to those contained in the March 23, 1990, preliminary draft findings your office provided to us for review and comments. Therefore, our comments to that report, contained in a memorandum dated April 13, 1990, from Michael B. Cook, Director, Office of Drinking Water, to Ronald Gondolfo, Divisional Inspector General, remain valid and appropriate. Where relevant, we have supplemented our earlier response with more recent information and recent activities we have initiated.

The Office of Water (OW) is committed to implementing the lead ban and the Lead Contamination Control Act (LCCA). Attachment 1 contains a summary of EPA and State activities to implement these programs. I would like to highlight some of the accomplishments.

EPA informed all Governors of the lead ban and lead public notification requirements of Section 1417 of the Safe Drinking Water Act (SDWA) during the summer of 1986. We have issued guidance to the Regions (see Attachment 2) on implementing these requirements. In addition, EPA has published regulations and a handbook for public notification, and coordinated lead ban implementation with other Federal agencies.

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Since the LCCA became law, we have been actively implementing its provisions. In February 1989, we distributed to States guidance and a testing protocol for schools. These were developed to assist schools test for and remedy lead contamination in drinking water. We also established a laboratory protocol to determine the lead content in the interior lining of water cooler tanks. The testing protocol has been used in thousands of school districts throughout the country as well as by operators of non-school buildings.

On April 10, 1989, we published the proposed list of water coolers that, based on the available information, could be identified as not lead-free as defined by the LCCA. As noted in your draft report, this proposed list served to initiate testing of water coolers in schools and helped set priorities for testing. Testing of additional water coolers after publication of the proposed list provided necessary information for the Consumer Product Safety Commission (CPSC) in their efforts to obtain corrective action from manufacturers of coolers that are not lead-free. On January 18, 1990, we finalized the original proposed list and published a new list of coolers that, based on the available information, should be classified as not lead-free under the LCCA.

In addition to meeting the statutory requirements, EPA has been expending considerable efforts to provide assistance to States, schools, and local education agencies to implement the LCCA.

In 1989, we conducted a series of "train the trainer" seminars around the country to instruct key officials on providing training on the local level to test for and remedy lead contamination in school drinking water. As a result of these seminars, 33 States have provided training to their school officials. EPA is developing a training video on testing for lead in school drinking water, a guidance document for day cares and nursery schools and for non-residential, non-school buildings, and a "Hazards in Schools" booklet. Finally, our Drinking Water Hotline provides assistance to hundreds of callers each month (including schools, non-building operators, water utilities, laboratory personnel, States, other Federal agencies, local governments, journalists, and concerned citizens) who have questions on the LCCA, the lead ban, and other lead issues.

These activities have been accomplished, and are continuing to occur, without additional Federal funding for either EPA or the States. Generally, implementation of the LCCA and the lead

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ban has occurred at the expense of other critical activities, such as publishing a revised standard for lead. Since our review of your preliminary draft report, we have taken, or assisted in, the following actions that respond to your preliminary findings: 1) provision of technical support to the Consumer Product Safety Commission in their recall agreement on all pre-1979 Halsey Taylor water coolers with lead levels above 20 ppb; 2) investigation for possible enforcement action of a manufacturer of water cooler valves that were improperly soldered with lead; 3) initiating development of improved guidance and model programs for States on implementing the LCCA and lead ban; 4) nationwide dissemination of an alert to laboratory directors and schools on EPA's recommended remediation level of 20 ppb for individual water outlets. Further, we continue work under our own initiatives to improve compliance and enforcement with the LCCA and lead ban.

1. EPA AND THE STATES ARE NOT ADEQUATELY PROTECTING CHILDREN FROM LEAD CONTAMINATION

Page 4 of the report -- "EPA did not ensure that States complied with their Lead Contamination Control Act (LCCA) requirements."

The LCCA provides EPA no effective authority to enforce its requirements. The law depends heavily on State implementation but assumes additional Federal resources. The LCCA requires States to establish programs to assist schools, but does not specifically mandate that they have enforcement authority against schools that fail to comply voluntarily. To the best of our ability given the constraints of enforcement authority and funding, EPA is aggressively pursuing compliance with the law.

EPA has been expending considerable efforts to provide assistance to States, schools, and local education agencies to implement the LCCA.

During the summer of 1989, EPA conducted a series of "train the trainer" seminars in five EPA Regions and in Washington, D.C. The purpose of these seminars was to instruct key officials on providing training on the local level to test for and remedy lead contamination in school drinking water. As a result of these seminars, 33 States have provided training to their schools officials. This past fall, EPA, with eleven national educational organizations, sponsored six seminars to

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alert the education community and parents about lead in drinking water, as well as asbestos and radon. In addition, EPA is developing a training video on testing for lead in school drinking water, a guidance document for day care centers and nursery schools and for non-residential, non-school buildings, and a "Hazards in Schools" booklet.

These activities have been accomplished, and are continuing to occur, without additional Federal funding for either EPA or the States. Generally, implementation of the LCCA and the lead ban has occurred at the expense of other critical activities, such as publishing a revised standard for lead.

In your report, you recommended that EPA modify State grants for Public Water System Supervision programs (PWSS) to include compliance with LCCA requirements as a condition to receiving the grant. Section 1443 of the SDWA does not authorize EPA to withhold PWSS grants from States that do not comply with the requirements of the LCCA, since the LCCA is not a public water system supervision program.

Page 12 of the draft report indicated that none of the States in Region III had complied with all their requirements under the LCCA. In addition, you noted that Pennsylvania has not even distributed or made available the EPA sampling protocol to schools and day care centers.

Page 14 of the draft report indicated that "State Agencies appear frustrated with EPA over the lack of Federal funding and the lack of EPA's expectations concerning the States' implementation of the LCCA." A State official's response to a LCCA questionnaire was used to document the apparent lack of concern on the part of EPA.

We would like to clarify the context in which this official's response was made. The State official referred to a June 15, 1989, letter from EPA which stated that the Agency had no "official" expectations of the States in implementing the LCCA. The letter was actually a summary of a meeting between Region III and its States at which numerous issues, in addition to LCCA implementation, were discussed. At this meeting the Region was asked about any grant conditions that might be placed on States to implement the LCCA. The Region responded that there were no plans to place any official or formal conditions in the grants, but that States should do the best they could with their limited resources to implement the LCCA. The bullet item in the meeting notes was intended to remind the States that attended the

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meeting of this discussion and should not have been cited out of context as Regional policy.

Page 2 of the report - "PA is the only State not fulfilling the requirement to notify schools and day care centers."

We share your concerns about State implementation of the LCCA and the lead ban. However, we believe that your draft report contains some inaccuracies and misunderstandings. I am addressing these in the following specific comments on the major audit conclusions. These comments include concerns raised by Jon Capacasa, Chief of the Drinking Water/Ground Water Protection Branch in Region III.

Pennsylvania issued a mass notice, providing sampling protocol and guidance, to schools during May 1990, and will be issuing a similar mass notice to day care centers shortly. Many of the schools were, and are, nonetheless aware of the LCCA program and sampling guidance by virtue of national and Regional mobilization efforts with schools, administrations, the general lead outreach program undertaken by the Drinking Water Program, and other day-to-day outreach efforts of the State program. PA has assigned an LCCA contact person who people can call for guidance information to get started on the sampling program. As noted in the report, many large PA school districts have, in fact, started with the program and had copies of the available guidance.

Although PA was late with their mass notification program, this was not as a result of a management deficiency, but done for the commendable purpose of initiating a budget initiative to conduct a first-rate educational program. It is much better to send out guidance which is then followed with in-depth training to ensure the responsible organizations understand the technical requirements and have an opportunity to get it right the first time. This approach is supported by your findings that schools that had the protocol in hand did not always conform to the testing procedures despite its critical importance to accurate lead results.

PA secured approval of a \$40,000 budget item for FY 1990 to conduct approximately 80 training sessions for school administrators and maintenance people around the State during July and August of 1990. A mass mailing to about 2,500 school districts, counter-signed by the Education and Welfare Departments of the State, was sent out during May 1990. This mass mailing provided the LCCA guidance and advised schools of

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the training sessions. A similar mass mailing to about 2,500 day care centers will begin shortly. With this approach, PA will not just be dropping off literature but assisting schools to comply with LCCA. In this case, being late will result in a much improved, higher quality program because of the budget support.

Page 15 of the report - "Not only are the lead-lined water coolers present in the schools, but also four schools found lead contamination in additional water coolers not on EPA's list of hazardous coolers."

A water cooler which is lead-free under the law can contain sufficient amount of lead in brass parts to result in high lead levels. That is one of the reasons EPA recommends that all drinking water outlets be tested, not just those water coolers which EPA has identified as lead-lined or containing lead parts.

Page 18 - Conclusion and Recommendation

The conclusion that "For the most part, schools were either not testing their water or, if they were testing, they may have been testing improperly" does not follow entirely from the narrative of the report. Of the 13 school districts evaluated involving thousands of individual schools, 10 of the 13 districts had performed testing. This is a very high rate of initial compliance for a program with absolutely no funding support from EPA. To say that "for the most part" schools didn't test is not supported by these data.

The conclusion implies that EPA has taken a passive role in ensuring State implementation of the LCCA. EPA has performed an extensive outreach program by conducting training and seminars, developing and distributing guidance and booklets over and above those required by the law, and by providing extensive technical assistance to States, schools, and local education institutions.

These activities are continuing. We have, in fact, initiated and continue to follow through on the first two recommendations in this section (prepare model plans to assist States in formulating their LCCA programs, and perform outreach to the States on LCCA programs). In addition, we have initiated investigation for possible enforcement action of a manufacturer of water cooler valves that were improperly soldered with lead. We do not believe the third recommendation (consider withholding

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grants from States not complying with the LCCA) is in the best interests of the program. The LCCA is only part of our overall program to provide drinking water free of adverse health risks. Unfortunately, there are not enough resources at either the Federal or State level to do any element completely. Reducing program resources jeopardizes all of these, including LCCA activities.

In order to assess LCCA activities, EPA has conducted a survey of lead in drinking water programs in 9 States. The results of this survey indicate that fewer than half of the school districts had tested their buildings for lead in drinking water at the time of the survey. However, approximately two-thirds that had not yet tested reported that they were planning to do so within the next 12 months. The report concludes that the level of State effort is the key factor affecting the ways in which school districts respond to their LCCA programs. The survey found that school districts are more responsive if they are in States that have disseminated the EPA manual, participated in EPA training seminars, and actively assisted schools compared with States that have not put forth the same efforts.

2. EPA MUST IMPROVE PROCEDURES FOR IDENTIFYING WATER COOLERS THAT ARE NOT LEAD-FREE

Page 5 of the report - "EPA was approximately one year late in providing a current and accurate list of imminently hazardous water coolers to States as required by the LCCA."

It is true that EPA did not publish the proposed and final list of coolers in the Federal Register within the statutory deadlines. To preclude delays to State implementation of the LCCA programs, we distributed the proposed list to States in January 1989, in advance of the statutory deadline for publishing a proposed list. We recommended that States provide this list to schools. Most States, as your audit found in Region III, worked from this list to begin the tremendous effort of testing water coolers throughout the country.

Verifying the presence of lead lining in a water cooler tank, as required by the LCCA, involves the procurement and disassembly of the cooler and cutting open the tank. Sampling and quantitatively testing the tank's interior surface is a complex, time-consuming and costly procedure. Additional time was required to develop a standardized testing protocol to assure the reliability of these and future test results. Given the limited resources available to conduct these activities,

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publication of the final notice occurred as quickly as possible. We plan to periodically update the list whenever we get significant additional information.

The report concludes that "EPA's inability to obtain and evaluate test results from schools in a timely manner has decreased their ability to identify additional hazardous water coolers." We disagree. The testing protocol for schools is designed to determine whether the amount of lead at the tap exceeds EPA's recommended action level of 20 parts per billion (ppb), not to determine whether the cooler is lead free. For the purpose of defining coolers as not lead-free under the LCCA's provisions, the data are of limited value to EPA without extensive quality assurance procedures and follow-up testing on cooler tanks or other parts. We believe the resources needed to collect and analyze these data can be better utilized in other critical program areas.

The report cites EPA's failure to publish the final list as one of the reasons for CPSC's delay in ordering manufacturer recall of coolers. Delay in publishing the list was not a controlling factor. Because it was not possible to determine whether all water coolers in the specific model series had lead-lined tanks, CPSC needed additional information to develop the legal case necessary to order a recall. CPSC, in fact, began work with the manufacturers long before issuance of the final list -- it was not a significant factor in delay of an order.

The report criticizes EPA for expending scarce resources by providing testing assistance to CPSC and recommends a formal Interagency Agreement defining each Agency's responsibilities. We believe we already have an appropriate and effective working relationship with CPSC. As a result of our assistance to CPSC, the Commission negotiated a consent order agreement (COA) with the manufacturer for the replacement or refund for lead lined water coolers. This COA was published in the Federal Register on June 1, 1990.

3. EPA AND STATES HAVE NOT ADEQUATELY ENSURED THAT THE PUBLIC HAS BEEN PROTECTED FROM LEAD

We share your concern that States have not aggressively implemented the lead ban. In October 1988, and again in August 1989, we issued guidance indicating factors Regions should take into consideration when deciding whether to withhold five percent of State grant funds for States not fulfilling their lead

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notification and lead ban requirements. We believe that this guidance contains the essential elements of an effective, enforceable lead ban. Several Regions have aggressively implemented this guidance in FY 1990 and performed detailed reviews of State lead ban programs as part of their annual review of State programs.

Region III was the only Region in FY 1990 to withhold five percent from a State for not implementing the lead ban. The Region took charge of the PA situation by issuing over 2,500 letter notices to CWSs and NTWSs to advise them of the Lead Public Notification requirement after the State refused to issue the notices due to lack of resources and a mandate in their legislation. This is an aggressive measure to protect public health.

It should be noted that one State in Region III issued written administrative orders to 122 public water systems that had failed to issue Lead Public Notification. The State was able to ascertain these systems' compliance through final follow-up telephone calls.

The report is misleading factually because it does not include the percentage of the population in Region III that were issued notices about lead. Lead exposure from multiple sources is a problem especially acute in urban areas. Our experience is that the larger supplies, which tend to be in more urban areas, did comply with the public notification requirements. We believe approximately 88% of the population in Region III received appropriate notification, and that we have done a better job of protecting public health than the 25-49% as the report would indicate.

The report recommends that EPA consider requiring proper labelling of products complying or not complying with lead free standards in the SDWA. EPA has no authority to impose or enforce such a requirement.

The recommendation that Region III take more aggressive action to enforce the lead ban through the States needs further clarification to make it useful. The statute does not provide EPA with any direct enforcement tools other than withholding "up to 5% of the Federal funds to a state" in the PWSS grant. Region III has done this in Pennsylvania for FY '89 and '90, but it does little to protect health of citizens in a direct way. I have already addressed why we think this may be counter productive.

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Region III has recently completed a review of each of its States' lead ban activities. Although the Region does not plan to withhold FY '90 grant funds from any State other than PA, it is considering the use of specific grant conditions for one or two other States for FY '91.

In order to improve compliance with the lead ban, we are engaged in a number of new initiatives including: 1) an information program targeted towards the manufacturers, distributors, wholesalers and retailers of solders, fittings and plumbing fixtures; 2) development of a model program that may be used by the States to enforce the lead ban; 3) development and delivery of training seminars to remedy program weaknesses to enforce the lead ban and to assess the alternatives to faucets and fixtures containing lead; and 4) to develop additional educational materials dealing with lead in drinking water.

4. EPA NEEDS TO ELIMINATE CONFUSION OVER LEAD MCLG

We agree that there is confusion over what is an acceptable amount of lead in drinking water. In order to avoid this confusion, we developed an Alert for Laboratory Directors (Attachment 3). This Alert was distributed to the States via the EPA Regions. EPA requested that the States forward a copy of this Alert to each certified laboratory. The Alert requests Laboratory Directors' assistance in notifying school administrators and clients that EPA recommends they take remedial action whenever lead levels exceed 20 ppb at one of their drinking water outlets.

We expect this Alert to not only reduce confusion caused by differences between the current MCL and the recommended level for remedial action on individual water outlets, but also result in additional schools testing. Within a month of the Alert's distribution, we have received dozens of calls from laboratories nationwide requesting information they can provide to schools in encouraging testing for lead.

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Eliminating exposure to lead in drinking water is one of ODW's highest priorities. We welcome constructive recommendations to help us and the States improve the effectiveness of our lead in drinking water programs. These recommendations should be tailored to recognize that we and the States are short of the resources necessary to implement all aspects of the drinking water program. If we can provide you additional assistance, please contact Jeff Cchen at FTS 382-5456 or Judy Lebowich at FTS 382-7595.

Attachments (3)

ATTACHMENT 1

Implementation of Lead Contamination Control Act
(As of July 31, 1990)

LCCA REQUIREMENTS

ACTION

EPA

- | | |
|---|---|
| ○ Publish and distribute list of water coolers to States by February 1989. | • Distributed proposed list to States January 1989. |
| ○ Revise and republish list as appropriate. | • Published proposed list on April 10, 1989. |
| ○ Publish and distribute guidance document and testing protocol to States by February 1989. | • Published final list and proposed additional water coolers on January 18, 1990. |
| ○ Make grants to States. | • Published and distributed "Lead in School Drinking Water" to States on January 1989. |
| | • Notified 40,000 school districts that booklets are available from Government Printing Office. |
| | • No grants were made because no funds were provided to EPA. |

EPA STATES

- | | |
|--|---|
| ○ Publish and make available to the public list of certified laboratories. | • List completed and published by Association of State Drinking Water Administrators. EPA distributed list to States. March 1989. |
|--|---|

STATES

- Provide for the dissemination of guidance document and testing protocol and list of water coolers to schools.
 - Document distributed to schools in 37 States.
- Establish programs by July 1989 to assist schools to test for and remedy lead contamination in drinking water.
 - 33 States sponsored seminars and training.
 - 2 States established legal requirements for schools.
- States programs include measures to reduce or eliminate lead contamination from non-lead free water coolers in schools.
 - All of the States report that schools are testing for and remedying lead contamination in drinking water. Exact number of schools is not known.

SCHOOLS

- Make test results available to public. Notify public about availability.
 - Exact number is not known.

CPSC

- Order manufacturers to repair, replace or recall and provide refund for lead lined water coolers.
 - Consent agreement for recall of Halsey Taylor coolers on April 19, 1990.

EPA ACTIVITIES NOT REQUIRED BY THE LCCA

| <u>ACTION</u> | <u>RESULT</u> |
|--|---|
| ○ Requested Governors of States to appoint designee to implement LCCA State programs. | • All States, except District of Columbia appointed designees. |
| ○ Developed and delivered 6 "train-the-trainer" seminars. April-June 1989. | • 33 States sponsored seminars and training. |
| ○ Delivered 5 Hazard in School Seminars co-sponsored by 11 educational associations. | • Awareness of State and school officials on hazards of lead in drinking water, asbestos, radon and indoor air. |
| ○ Assisted CPSC to test water coolers with lead lined tanks. | • Strengthen legal case for CPSC to initiate recall action. |
| ○ Tested 61 water coolers. | • Identified 9 models of lead lined water coolers. (6 in final list, 3 proposed.) |
| ○ Provided technical assistance to schools, State and local governments. | • Testing and remedial action by schools and States. |
| ○ Training video, guidance document for day cares and nursery schools, and "Hazards in Schools" booklet will be completed in 1990. | • Materials will provide assistance to test for and remedy lead contamination in school drinking water. |
| ○ Issued Alert to labs on lead test results. | • Clarified distinction between the MCL and EPA's current guidance. |

OTHER EPA ACTIVITIES ON LEAD IN DRINKING WATER

LEAD BAN

- EPA notified Governors about the lead ban and requested that they certify that States established procedures to enforce the lead ban and public notification requirements.
- Published regulations for special public notification. October 1987.
- Published handbook for public notification. March 1988.
- EPA Region VIII sponsored seminar on lead ban.
- ODW contacted other Federal Agencies to coordinate implementation of the lead ban (HUD, VA, FmHA, and CPSC).
- Analysis to evaluate possible control of lead content of plumbing fittings/fixtures under TSCA.
- Developing model programs for State implementation enforcement of ban.
- Education materials developed for plumbing industry including manufacturers, distributors, wholesalers, retailers, and consumers.

REGULATIONS

- Proposed revised regulations for lead and copper. August 1988.
- Developing final regulations by late 1990.

OUTREACH

- Lead and Your Drinking Water booklet
 - Distributed >1.5 million booklets to the public.
 - Supermarket Campaign: 385,000 booklets distributed during a period of three months in 3,653 supermarkets in 85 cities.
- Public Service Announcements
 - Television stations aired segments on lead in drinking water in ten major cities.

- Lead in Drinking Water Public Education Project
 - Pilot study to develop and implement a community based education program. Raleigh, North Carolina, 1988.
- National Geographic
 - ODW scientists provided assistance to Kids Network project for students to explore lead in drinking water in their school and community.
- University Learning Centers
 - To train operators of small water supplies how to implement corrosion control techniques to reduce contaminants including lead in drinking water.

REPORT DISTRIBUTION

Headquarters

Assistant Administrator for Administration
and Resources Management (PM-208)

Assistant Administrator for Enforcement (LE-133)

Director, Office of Drinking Water (WH-550)

Office of the Comptroller (PM-225)

Agency Follow-up Official (PM-225)
Attention: Director, Resource Management Division

Agency Follow-up Official (PM-208)

Agency Follow-up Coordinator (PM-208)
Attention: Program Operations Support Staff

Associate Administrator for Regional Operations (A-101)

Office of Congressional Liaison (A-103)

Office of Public Affairs (A-107)

Inspector General (A-109)

Region III

Regional Administrator (3RA00)

Assistant Regional Administrator, for Policy and Management (3PM00)

Regional Audit Follow-up Coordinator (3PM72)

the 1990s, the number of people in the world who are undernourished has increased from 600 million to 800 million (FAO 1996).

There is a growing awareness of the need to improve the nutritional status of the world's population. The United Nations World Food Programme (WFP) has been instrumental in the development of the World Food Summit (WFS) in 1996, which was the first time that world leaders have met to discuss the issue of food security. The WFS was a landmark event, as it was the first time that world leaders have met to discuss the issue of food security. The WFS was a landmark event, as it was the first time that world leaders have met to discuss the issue of food security.

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