Appendix L3

DONALD CLARK; UNITED CHURCH OF CHRIST NETWORK FOR ENVIRONMENTAL AND ECONOMIC RESPONSIBILITY E-MAIL TO DANIELLE DROITSCH, TN CLEAN WATER NETWORK; 9/27/98; COPIED TO TOM MOSS
RESPONSE BY TOM MOSS, TN DIVISION OF WATER SUPPLY SENT TO BOTH DONALD CLARK AND DANIELLE DROITSCH

From: Jean & Don Clark <clarkjd@multipro.com
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Date: 9/27/98 7:30pm
Subject: WATERSHEDS TO WATERTAPS

WHAT FOLLOWS IS A PIECE DISTRIBUTED AT A CONFERENCE BEARING THE TITLE OF THE PIECE THAT TOOK PLACE IN ST LOUIS. SIMILAR CONFERENCES OR WORKSHOPS ARE NOW TAKING PLACE IN EVERY EPA REGION I DELETED THE REFERENCES IN THE ORIGINAL TEXT AND A HALF-TONE BOX WHICH DID NOT SCAN VERY WELL ... BUT WHICH IS TYPED IN AS BULLET- HEADLINES AT THE END. WHAT APPEARS IN >< IS WHAT I ADDED ABOUT TN**. {ALSO BOLDED FOR PURPOSES OF THIS SUBMITTING IN EPA REPORT)**

Don Clark

FROM WATERSHEDS TO WATERTAPS:

Drinking-Water Source Protection as a Conservation Tool

Conservation, environmental and public health interests can now tap into the public's support for clean and safe drinking water to help achieve their goals of protecting watersheds and the many important natural resources these watersheds embrace. Thanks to. important new tools included in the federal Safe Drinking Water Act (SDWA) residents served by public water systems in the U.S. have landmark opportunities to protect their drinking water sources from pollution rather than relying solely on drinking water treatment technology to remove contaminants after they are in drinking water supplies. Residents who depend upon private wells for their drinking water could also benefit from these new protections if their well draws from the same source waters as nearby public water systems. In addition to protecting human health, these new tools provide unprecedented opportunities to protect habitat and our land and water resources.

New Conservation Tools in the Safe Drinking Water Act

After years of hard work on the part of many in the environmental and public health community, the 1996 SDWA amendments have created a formal nexus between federal clean water and safe drinking water laws. Although these SDWA amendments stop short of formally requiring states to protect their drinking water sources, them are several new tools available which will assist concerned groups and individuals as they work to protect important source water areas.

New funding for local watershed protection efforts

Through a newly created $9 billion drinking water revolving loan fund, communities can now access money to assist them in protecting drinking water sources from harmful pollutants. >Tennessee's share is $12,776,200.< Although the loan funds primary focus is on building or upgrading drinking water treatment plants and other water supply construction projects needed to protect the public's health, funds are also available for the purchase of land and conservation easements which will increase the protections for drinking water supplies. These new funds provide conservation interests the opportunity to develop programs to work with private land owners to protect important riparian corridors along source waters.

Each state's drinking water agency submits to the U.S. EPA an annual "Intended Use Plan* which specifies how the state agency proposes using funding *set asides" from the state's total federal award to the drinking water loan fund. Up to 31 % of the state's federal award can be set aside for non-construction activities, of which up to 27% can be used for the acquisition of land and conservation easements, as well as for other source water protection activities. Conservation interests must actively shape state

Intended Use Plans to ensure that adequate funds are dedicated to protection programs. **>Tennessee and most other states have asked for the 31% set aside .. but prioritizing non-construction projects may be difficult when competing** with pet **infrastructure projects of legislators. I imagine that funding some is wise in order to act in the spirit of the law.<**

New drinking water right-to-know reports

Until the 1996 SDWA amendments, drinking water was one of the only consumer products for which no content labeling was required. By the year 2000, public water systems throughout the US. will have begun notifying approximately 243 million consumers about what contaminants have been found in their tap water and about the potential sources of those contaminants. The notification will occur through annual drinking water right-to-know reports. .>**For the complete report, TN is proposing** that they **be obtained by the customer from TDEC**

What you can do:

The form and content of the right-to-know reports is the subject of considerable debate, and the debate is coming to your state and to your community. Once consumers begin learning about the contaminants in their drinking water, they can 'become powerful allies in the fight to protect their drinking water source areas. Get involved now to ensure that: 1) water systems disclose the specific sources of all pollutants; 2) full disclosure of the potential health effects of all detected contaminant Occurs (particularly effects on children, pregnant women, the elderly, people with compromised immune systems and other vulnerable populations); and 3) other information is included in the reports that will assist you in furthering the dual goals of preventing pollution from entering the source water area and protecting the public's health.

New Opportunities for public participation

The 1996 amendments to the federal SDWA included the establishment of a "Source Water Assessment Program" (SWAP). This program requires every state to analyze existing and potential threats to the quality of public drinking water supplies. This analysis entails: 1) delineating (mapping) the part of the watershed or ground water area that may contribute pollution to a particular public drinking water supply, 2) identifying significant potential sources of contamination to the public drinking water supply within the delineated area; and 3) determining how susceptible the drinking water supply is to contamination from those sources.

In each state, an agency has been designated to oversee the SWAP, and this agency is required to involve the public to the maximum extent when developing its SWAP plan, which will subsequently guide the drinking water source analysis (referenced above).

>In Tennessee, the Source Water Protection Coordinator is Thomas A. Moss ((615) 532-0170) of the Tennessee Division of Water Supply. The first meeting of the Source Water Assessment Program Committee for the state took place on September 3 and the second will take place on October 20, 1998. The guidance from EPA talks about the concerns and expertises that need to be involved and invited to participate. Some 25 slots were to be filled, one name was missing (American Cancer Society) and few of those invited showed up at the first meeting. All got sizable notebooks. Alan Jones & I were from environmental groups. Many more than invited came from the To Assoc. of Utility Districts. The Committee certainly started late because the state must submit a plan to the EPA by February 6, 1999 which needs to be the result of our work and reflective of public input through hearings. The report will:

***Delineate source water protection areas**

***Inventory significant contaminants in these areas.**

***Determine the susceptibility of each public water supply to contamination.<**

>Tennessee, we understand has consultants working feverishly to get the report together. I pointed out bow little time we had but we do have the benefit of the work of committees in other states, and were given the Ohio SWAP Committee Recommendations & Conclusions for ideas to lift. < > After February 6, 1999, implementation of SWAP falls to Sherry Wang of the Div. of Water Pollution Control, Watershed Management Section.<

>*Tennessee Department of Environment & Conservation feels it is appropriate to emphasize emergency response, enhanced communication and public awareness/ industry involvement for surface water systems. The emphasis for protection/management efforts will be concentrated on the wellhead protection program where long-term contamination is a demonstrated problem,* according to the materials supplied.<

What you can do:

The 1996 SDWA amendments establish strong expectations for public participation in decisions affecting the state's drinking water assessment programs. Many states began developing their SWAP plans early in 1997. **>Conservation and environmental interests should contact Thomas Moss as soon as possible to learn how to become involved in guiding the state's plan or revisions thereof. In addition, source water assessment and protection activities will be happening in all communities served by a public water supply**.<

Conservation, environmental and public health interests must be represented at the local level whenever possible to better ensure strong efforts to clean-up and protect our drinking water sources. Contact your mayor or your community's governing board to let them know of your interest in being involved with these important activities. Many local know of your interest in being involved.

Source Water Protection: The Growing Gap

In the late 1800s and early 1900s, urban population rapidly increased as our society became industrialized. As a result, greater concentrations of human and industrial wastes were discharged directly into our lakes and rivers posing serious public health threats. Communities responded by building treatment plants which allowed the solids to settle out, and the remaining water was filtered through sand before it was discharged. Many of these treatment practices have not advanced significantly today despite the need to remove a greater number of both chemical and pathogenic contaminants.

In addition to the direct discharges described above, our drinking water Supplies am threatened by non-point runoff which includes oil and antifreeze from streets and puking lots, lawn chemicals, pesticides and animal wastes from agriculture, and contaminants resulting from airborne sources such as power Plants and factory stacks.>**and from power boats on water supply lakes**<

Drinking water quality concerns were first addressed at the federal level by Congress in 1974 when they enacted the Safe Drinking Water Act. Subsequent federal regulations stated: "Production of water that poses no threat to the consumer's health depends on continuous protection. Because of human frailties associated with protection, priority should be given to selection of the purest source.

This 'Purest source, principle was often ignored because it was believed that water treatment technology provided adequate public health protections. Although this technology ended epidemics of cholera, typhoid and a number of other diseases, it provides no guarantee of safety where drinking water sources are polluted. Traditional treatment methods will not remove pesticides and herbicides from drinking water.

Other single-celled bacterial contaminants such as cryptosporidium (see !Making the Case for Protecting Source Waters*) am highly resistant to disinfection by chlorine and, at roughly 1/100th the size of a speck of dust, they are extremely difficult to filter. In addition, chlorine reacts with organic material in the water to form disinfectant by-products such as trihalomethanes (THMs), some of which scientists believe to be carcinogenic and responsible for mom than 10,000 reatal and bladder cancers nationwide each year. To reduce the formation of organic material in the drinking water sources, reservoirs, and distribution systems.

Much remains to be done to protect our drinking water Scientists from the Centers for Disease Control have estimated that contaminated tap water in the US. currently causes sickness in nearly I million people each year and results in approximately 900 related deaths. other experts say actual numbers may be substantially higher: as many as 7.1 million water borne disease cases each year caused by contaminated tap water. The US. EPA estimates the need for drinking water system infrastucture improvements over the next 20 years at $138.4 billion. Source water protection and pollution prevention need to be an integral part of our strategy for providing clean, safe, and affordable drinking water.

>**From what we heard in St. Louis at a conference on this subject, chlorination of water can be expected to be outlawed in a couple of years.<.>All water in TN is required to be filtered. With rare exceptions, it is done by passing it through a bed of sand or coal<**

Making the Case for Protecting our Source Waters:
Cryptosporidium in Milwaukee's Drinking Water

Milwaukee, April 1993 - The microscopic parasite known as cryptosporidium terrorized Milwaukee residents and claimed the national spotlight when it sickened more than 400,000 people and was linked with at least 100 deaths.

Heavy rains in the Milwaukee area resulted in runoff tainted with animal waste from farm fields emptying into the source waters for the city's water system. Less than optimal operation of the treatment plant may have contributed to a breakdown in the Coagulation treatment process and a filtering failure, which may have enabled large quantities of Cryptosporidium to get into the treated water.

While most large water utilities in the U.S. test for Cryptosporidium, the test is not performed frequently enough to ensure that the drinking water is safe. Even if Cryptosporidium is detected, it is neither killed by chlorine nor caught by standard filtration.

Each year, millions of people in the U.S. drink tap water from sources that contain Cryptosporidium, which typically originates from animal wastes.

Since detection and treatment are apparently not preventing Cryptosporidium from getting into the public's water systems, it is imperative that prevention measures be implemented so the animal waste does not enter the source waters. Source water protection is the cheapest and most effective means of preventing future outbreaks of Cryptosporidiosis. PROTECTING OUR DRINKING WATER SOURCES... *Minimizes pressures to tap remote and more pristine water sources. *Saves wetlands. *Promotes responsible development. *Benefits all those downstream.

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*Minimizes pressures to tap remote and more pristine water sources. *Saves wetlands. *Promotes responsible development. *Benefits all those downstream. Lessens drinking water demands. -Is less expensive and more ecologically responsible.

For more information about *From Watersheds to Watertaps" contact., clean Water Fund, (202) $95-0420, cleanwater@essential.org Natural Resources Defense Council, (202) 289-6868, nrdcinfo@nrdc.org U.S. Public Interest Research Group, (,202) 546-9707, uspirgopirg.org Environmental Working Group, (202) 667-6982, info@ewg.org The River Network, (202)364-2550, rivemet2.@aol.com Consumer Federation of America, (202) 387-6121

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Response by Tom Moss, Division of Water Supply:

I appreciate the writeup you sent 9/27/98 Watersheds to Watertaps. There were a couple of points I'd like to clarify.

I think the concept of non-construction conservation type projects is an excellent one, but the resources from the setaside are badly needed elsewhere. Let me assure you Tennessee's setaside is not being used for "pet infrastructure projects of legislators." I will be putting a copy of the workplan in the mail to you. The basic breakdown in percentages is:

> 10% Public Water System Supervision: This money is being used to offset a budget cut from state appropriations (the Division is basically operating off of fee collection and federal dollars – there are no state. dollars). Without this, the Division would have lost approximately 1/3 of its Drinking Water Staff.
>
> 4% Administration of the State Revolving Fund
>
> 2% Small Systems assistance: Fleming Training Center Our Center for training water system operators would also have ceased to exist due to state appropriation cuts had this money not been available.
>
> 10% Source Water Protection: These funds will likely be barely adequate for the task at hand and there is no other funding to perform these activities.
>
> 3% Wellhead Protection (could have asked for 5%): This is the first funding that has been available for wellhead protection. The burden for wellhead protection has been on the systems and the Division until this point This will be used to comply with the Source Water Assessment requirements for ground water systems.

The reason there was not a name associated with the American Cancer Society is that they have been contacted on two separate occasions and never saw lit to give me a contact name or even acknowledge the request for a Committee member. My instructions from EPA (particularly with the short lead time we've got) were to make the contacts and if the organization is unwilling to provide a representative, I have fulfilled the requirements. I am concerned and disappointed, but do not really have the time to continue pushing them. Incidentally - there is no contractor feverishly preparing the report for EPA in February. I am the one preparing the report - I have one other staff member to assist me. My total staff consists of three people. Of the other two, one is hill time

wellhead protection assistance and the other is full time Underground Injection Control Program. I also do all of the wellhead protection reviews and approvals.

We will be contracting out the assessments - as you can see we do not have the staff. As you probably have surmised, we fully anticipate it being Tennessee Association of Utility Districts but this is not official yet. That is the reason several members of their organization attended the meeting since the outcome of the Committee recommendations could well affect their work on the contract. They have only one official member and he was unfortunately sick and unable to attend.

The Source Water Assessment Program will NOT be handed over to Sherry Wang, Manager of the Watershed Management Section in Water Pollution Control once the plan is submitted to EPA in February of 1999: 'As Source Water Protection Coordinator, I will be in charge of it for the entire assessment phase (through 2003). We will be supplying all of the assessment information to Water Pollution Control to improve their watershed protection activities - they have the authority for the protection of streams across the state under the water Quality Control Act. The Division of Water Supply does not have this authority.

The information you have regarding filtration not removing cryptosporidiurn is essentially correct 'Me key to removal is actually the coagulation of the sediments prior to filtration that also drops out cryptosporidium, giardia, etc. The key is an optimally run filter plant - which is why the Division is so concerned about operator training. Unfortunately, water treatment plant operators are typically the lowest paid employees of the municipality and at best have a high school education, so this training is critical.

Currently there are no standards for cryptosporidiurn, but the forthcoming EPA Interim Enhanced Surface Water Treatment Rule will establish a Maximum Concentration Level Goal (MCLG) for cryptosporidium as well as a treatment technique which Tennessee will implement. This is separate from the Source Water Assessment Program and on a different time schedule. Even if SWAP is completely successful, the assumption will have to be that cryptosporidiurn is still present for treatment considerations in the interest of public health.

I have recently come across some interesting information on cryptosporidiurn regarding the infamous Milwaukee incident that I will be mailing you. The coagulation/filtration was obviously not operating properly, but most people had assumed the cryptosporidium was from livestock. As it turns out, testing indicates a human source - it would appear there was a sewage outfall problem. Of the 51 cryptosporidiosis incident reports Kansas State University has in their database (I'm sending this too) it is interesting to note there are only a few from improperly filtered river water and several from swimming pools, wells and springs contaminated from sewage, etc. Ile only illness problems related to public water supplies here in Tennessee like that were cross connection cases (contaminated water entering/siphoning into water lines). Here in Nashville there was a country club using both city water and a well (illegal, of course) they had accidentally drilled through/adjacent to a sewage lift station. We also had one at the prison at Mountain City where they had a cross connection between their sewage pumps and their drinking water lines.