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before

ASSEMBLY AGRICULTURE AND ENVIRONMENT COMMITTEE

on

ROCKAWAY EXPERIENCE - WATER POLLUTION AND RELATED ISSUES

Held:
March 10, 1982
Muncipal Building
Rockaway Township, N.J.

MEMBERS OF COMMITTEE PRESENT:

Assemblyman Raymond J. Lesniak (Chairman)

ALSO:

Norman Miller, Research Associate
Office of Legislative Services
Aide, Assembly Agriculture and Environment Committee

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ASSEMBLYMAN RAYMOND J. LESNIAK (Chairman): May I have your attention? We are going to call this meeting to order. I want to thank the Mayor and the City Council for these accommodations here today, so that we can have the second of a series of hearings dealing with the purity and the safety of the groundwater that people drink in the State of New Jersey. Our first hearing was held in Trenton a few weeks ago where we dealt with one specific problem -- that problem being the leaking of underground gasoline tanks contaminating water supplies. As a result of that hearing, we have specific legislation which will be drafted over the next month. It is about fifty percent complete now, and will be introduced at the end of the Appropriations break of the General Assembly and Senate.

We are also considering today legislation to require periodic testing for organic chemicals and other contamination of water supplies which surprisingly enough to many people, including myself, very recently has not been required in the State of New Jersey, nor has it been required in most places in the United States. We will also consider the development of minimum contamination levels so that once water is tested and we find out what type of contamination is in there, we can develop standards as far as what is safe and what is not safe, and then deal with that problem.

I have a prepared statement which I would like to read. It goes over the entire problem: Is our water safe to drink? Until recently, many of us never gave much thought to that matter. For years we have trusted our taps and faucets. We associated the clear, cold water that flowed from those taps and faucets with cleanness and purity. But when we turn on our taps and pour ourselves a tall, cool glass of water, we may actually be filling our glasses with poison.

New Jersey's groundwater sources are being contaminated at an alarming rate. The instances of tainted private wells and water systems serving scores of people are growing rapidly.

Although our groundwater sources are hidden from sight, they are still vulnerable to a variety of potentially deadly contaminants. The headlines and official reports serve as sad testimony to how the problem of groundwater contamination is literally coming to the surface.

A few days ago, the General Accounting Office of the Federal government released its startling report demonstrating how truly dangerous America's drinking water has become. According to the G.A.O. report, many of the problems surrounding the water contamination disaster facing our country had been caused by the failure of water system operators to test for water quality. Most of us are familiar with the water emergency that occurred in the Rockaway area. We must keep in mind that such problems are not indigenous to any one town or county; this problem is threatening the entire state as well, and as the G.A.O. report demonstrated, the entire nation.

More than sixty percent of New Jersey residents drink water supplied by wells from groundwater sources. Those who depend on groundwater for drinking obtain it either from private wells or from municipal or private water systems which pump water from larger wells.

Overshadowing our statewide dependency on vulnerable groundwater supplies is the fact that New Jersey is one of the leading chemical producing companies in the country, an industry which also produces millions of gallons of hazardous substances each year. The EPA estimates that nearly ninety percent of all hazardous wastes are discarded in environmentally unsound ways.

Groundwater contamination may come from industry septic tanks, broken sewer lines, leaking landfills, chemical spills from truck and railroad accidents, and, as was investigated by this Committee at a public hearing in the State House last week, by leaking underground gasoline storage tanks. One such leak occurred in nearby Mount Olive, where ten thousand gallons of gasoline infiltrated groundwater supplies

and contaminated Budd Lake. The gasoline tanks represent a growing problem that has been categorized in a petroleum industry publication as an "underground timebomb".

Without an effective water testing program, how many New Jersey residents are now drinking and will continue to drink harmful contaminants in their water without knowing that they are doing so?

The purpose of this hearing is to compile significant information from knowledgeable officials and the people who know firsthand the impact of this environmental tragedy. From today's testimony we will develop a legislative package to provide for comprehensive testing of water supplies, to detect contamination by toxic substances, and to explore viable solutions for eliminating this menace to the health and safety of New Jersey residents. Whatever course we take, preventive measures must accompany remedial actions if these threats to the wellbeing of present and future generations of state residents are to be eliminated.

At this time, I would like to call Mayor William Bishop. Mayor, while you were out, I thanked you and the City Council for these accomodations and for lending your expertise to this problem.

M A Y O R W I L L I A M B I S H O P: Assemblyman Lesniak, I thank you. I'll tell you why I was out. I forgot to have some sand and salt put on the road to the well field,where the filters and the stripper are located. You had said that you wanted to see that when this is over. I didn't want to get you captured down there and not be able to get you out.

We thank you, sir. We feel that Rockaway Township - Rockaway Borough - is that location in New Jersey where we have experienced all of the horrors of ground-water pollution across the board, and where we have begun to effect all of the known solutions to those problems despite the price -- despite the price tag on it. As you know, Rockaway Township, in November - December of 1980, because of the incidents of trichloroethylene in our water, put on line two granular activated carbon devices. We can't go through life saying all of that, so we come to call it our GACS". We put two GAC's on the line. We were the first in the nation to put an entire municipal system-- Would it be better if I sat down?

ASSEMBLYMAN LESNIAK: Whatever your pleasure is.

Mayor, how did you originally find out that there was contamination in the water?

MAYOR BISHOP: Pure nosiness on the part of our then Health Director. He had seen what was happening in Bucks County, Pennsylvania. He knew that there was no provision for testing for organics, particularly in the case of gas chromatography/mass spectometry. There is no provision for that and we would hope, as a part of your legislative efforts, that some program be instituted for municipalities which would insure that there is some schedule of GC and mass spectometry testing for municipalities. Who pays for it? I don't know. That has to come later. He voluntarily decided that he wanted to do GC and mass spec on our water. He did so because he wanted to prove that Rockaway Township had the purist water around. When he did his testing, and he found the tricholorethylene, of course, that hope was absolutely murdered. From that point on, we started looking for ways to bring the water up and purify it. We first did so by intersection, and that worked until we had time to put our GAC's on line. We were later hit in October of 1980. We were hit by two constituents from a petrochemical spill; namely, di-isopropyl ether and methyl tertiary butyl ether. We found that because of their very high volatility, a stripping device - a packed columnar aerator- worked faster than the carbon. Carbon filters everything, we were told, and I have come to believe that carbon will filter out everything but bourbon. We used this stripper specifically for the ether; not because the carbon won't take it, but

because it does it faster, and for these two constituents, better. We feel that carbon filtration is a fact of life for us for many years to come. It will be as necessary to our tools as a road scrapper and salter and sander.

The third part of the problem occurred in the northern end of our town. As you know, we are forty-five square miles. We cover a lot of territory. We begin to have the incidents of both petrochemicals and organics in individual wells up in our Telemark section. This presented a much greater problem because in the municipal area our wells were about eighty feet apart.

I want to drop back a moment. In the business of carbon filtration, Rockaway Borough -- Mayor Johnson is here today, and I thank him for coming -- which had organics in their water, and we presume they were from the same generator.

ASSEMBLYMAN LESNIAK: And who do you presume that generator is?

MAYOR BISHOP: I guess I won't get in trouble if I say presume. We presume that that generator is a company which is no longer here. That company was Reaction Motors Division of American Thiokol. You must understand that the plume has not been traced. DEP is doing that for us. The reason we stopped it-- By the way, we traced it ourselves to our border. That is in an adjoining town - not in the Borough, but in Denville. DEP has taken over the plumetracing chores for that. As you know, plumetracing is extremely expensive. I might add that we traced it from our wells to the border and then handed it to DEP. We didn't pay for that. Keuffel and Esser, a company in our town whom we suspected did so, put down several thousands of dollars worth of evidentiary quality plumetracing wells in order to prove that they were clean. I think the reason that happened was because we asked them, quite frankly, what the price of innocence was, and they decided that the many thousands of dollars that they pay was part of the price of innocence. It turned out that they were innocent and DEP took it over at the line.

The Borough puts their water on GAC's. They did one thing more right than we did -- they bought three instead of two. I suppose copying is the greatest form of compliment, but I think I must also say, and I hope I am not stepping on Mayor Johnson's lines, that his problem was much greater than ours. His wells were spread out all over the place, and he had to first connect everything to a local point.

ASSEMBLYMAN LESNIAK: Does the township periodically test the water?

MAYOR BISHOP: Assemblyman Lesniak, you wouldn't believe how much we test. We test our tests. Yes, we do.

ASSEMBLYMAN LESNIAK: This is on your own initiative? There is no requirement that you do that?

MAYOR BISHOP: Absolutely. Let me tell you how extensive that is: we test our own municipal system - raw and finished - once a week. That is fifty-two times a year.

ASSEMBLYMAN LESNIAK: What do you test for?

MAYOR BISHOP: We do GC's and mass specs for all organics. We do the same thing up north on the individual home filters that we have going now as a test. I want to touch on that in just a moment. That is done semi-quarterly, with reports quarterly, because we are running a test up there. We also do some surface testing. I know that as soon as organics hit the air, because they are volatile in our streams and lakes, the organics go to God and the water goes to Jersey City. Nonetheless, we still test to make sure, from time to time, that nothing is happening surficially.

Our bill for testing in the past two years runs, conservatively -- I am talking only about our portion of that bill; I'm not talking about Shell's portion, or Keuffel and Esser's portion, I am talking about just our portion -- our portion

in the last two years, would easily clear seventy thousand dollars.

ASSEMBLYMAN LESNIAK: Is that for testing only?

MAYOR BISHOP: Testing only. There is half that much again that others have payed for. We are going to ask you later on in your legislation -- as I spoke to you earlier about -- to work out some way, to at least take the cost of that testing out from under cap. That is a fiscal thing, and I don't think this is the place for that now.

ASSEMBLYMAN LESNIAK: We would intend to do that. I appreciate those comments.

MAYOR BISHOP: We think that that has just as much a place in this business of mandate, after the fact, that other laws in cap budgetry.

The third thing I would like to bring to your attention -- incidentally, in September of last year, I was asked to speak at the Groundwater Information Forum, held in Cherry Hill. They asked us to tell our entire story. If you will, I am going to submit that speech as part of my testimony. It tells all of our story up to September of last year. Although it doesn't include the success we have had with the stripper, at least it mentions that it is on line, and we are also offering some line drawings of both of our GAC's and our stripper. Taking my speech would mean I wouldn't have to go through two or three hours of testimony to tell our story.

ASSEMBLYMAN LESNIAK: Believe me, you wouldn't.

MAYOR BISHOP: Believe me, I will honor your tapping the gavel. I will finish fast.

The third part of our problem -- again, in the Telemark area -- was individual homes were hit. We have approached that with what we think is a very unique answer. I am not going to give that answer because the Chairman of that Committee, Mr. Douglas Johnson, who is the Rockaway Township former planner, former adjuster, and Chairman of the Filter Committee, will cover the activites of that Committee. I might say, what we plan for that Committee will also be a first, and to our knowledge, the first in the world.

I think that pretty much concludes -- or certainly ought to conclude -- what I have to say this morning. I would ask you, however, in your accepting of testimony today, if you would entertain testimony from such people as Mr. Johnson. I don't see his name on the list here.

ASSEMBLYMAN LESNIAK: He has been added to the list.

MAYOR BISHOP: Also Doctor Steve Stoldt, who is a member of the Environmental Committee, Filter Committee, CAC, and on and on. I would also like for you to accept testimony from Nancy Stoldt, and Charles Lenchitz, the Co-chairman of our Environmental Committee. The President of our Planning Board, David Washington, is here today. If he would like to testify, I would like you to accept that. Lorraine Ryan, is a member of the Filter Committee and incidentally a sufferer in Telemark. That is one of the homes where pollution hit. I would ask you to entertain testimony from her. I would ask that you let me turn around and take a fast look to make sure I haven't left anybody out.

ASSEMBLYMAN LESNIAK: Mayor, anyone who wishes to testify will be heard. I just have one question: Do any of your residents obtain their drinking water from private water wells?

MAYOR BISHOP: All of Telemark does. Yes.

ASSEMBLYMAN LESNIAK: How do you deal with that particular problem?

MAYOR BISHOP: May I ask you to defer the question for Mr. Johnson?

ASSEMBLYMAN LESNIAK: Certainly.

MAYOR BISHOP: He is the Chairman of the Committee and he knows a lot more about it than I do. I have discovered one thing as a Mayor: to make a good committee do a hard job. You pick the best people you have, you appoint them, give them a room, coffee and danish, and say "go". This particular Committee, of which Mr. Johnson is head, did just that. He is going to be a much better testifier.

ASSEMBLYMAN LESNIAK: Thank you very much. I thank you for your comments.

MAYOR BISHOP: Again, thank you for coming.

ASSEMBLYMAN LESNIAK: Thank you for the accomodations. You have a lovely town.

Next, we would like to call the Mayor of Rockaway Borough, the Honorable Robert Johnson.

Excuse me. We will enter into the record the report by Mayor Bishop entitled, "Pollution in Municipal Water: A Continuing Odyssey".

MAYOR BISHOP: Assemblyman, excuse me. I would especially like to welcome at a later time, Mr. Steve Levinson, who is our Director of Health.

ASSEMBLYMAN LESNIAK: Thank you. Mayor Johnson.

M A Y O R R O B E R T J O H N S O N: It is indeed a pleasure to be invited to this hearing to add a few more thoughts to an ever-increasing body of research devoted to a problem which finally is receiving the attention it deserves. Of course the problem I refer to is water quality. That last word is rather amusing to me in an ironic sense, as we have spent the better part of a year hearing tales of woe referring to water quantity. We in Rockaway never really had a water supply problem. Our problem was that the quality was a bit tainted -- a point which I will expand upon later.

In terms of what I can add, however, I must refer to the experiences we have had in the past twenty-four months. To accomplish this task, I take you back to late 1979 and trace the events which have brought us all here today.

Rockaway Borough is a small town in Northwestern Morris County. It has a population of approximately six thousand eight hundred people, and it is what sociologists would call a true middle class community. It is an older community, however, with roots back to the Revolutionary War period, and is, at this time, a very stable community. Stability, in my usage, means developed. Unlike much of Western New Jersey, Rockaway Borough is ninety-five percent developed, and we have a great sense of community pride. For years we could brag about our low tax rate, the fact that all of our municipal services such as water and sewer lines had already been installed, and that our community was stable. For years we also said that our water supply was great; after all, it came from underground aquifers, didn't it? We all knew that Mother Nature's water supply was pristine, didn't we?

That was the assumption, anyway. When we heard that our neighbor to the north, Rockaway Township, had a problem with some chemicals in the water, we were surprised, to say the least. That was in November and December of 1979, and the chemical involved had the very strange-sounding name of trichloroethylene.

Rockaway Township and Rockaway Borough have a common border. More importantly, Rockaway Borough and Rockaway Township, as well as many other Morris County communities, are served by the same water supply - an aquifer which flows under a large portion of Northern New Jersey. If the water in Rockaway Township had a problem, we might be next in line.

Problem number one now arises. I am a part-time Mayor who makes his living as a high school Political Science and History teacher, and as a scout for the Pittsburg Pirates. My knowledge of hydrology and geology could very easily fit into a thimble. The same holds true for most public officials in New Jersey. What

is safe? We do not know the answer. All we do know is that we have been testing our water for years, and all the reports have been just fine.

ASSEMBLYMAN LESNIAK: Did you know what you were testing for?

MAYOR JOHNSON: At that time, we were basically testing for bacteria, and that is all. There was no organic scan at all. We were basically going by DEP guidelines.

Herein lies the problem not just for Rockaway, but for many communities in New Jersey. Our tests were essentially bacteriological in nature. Potability was paramount. We had never examined our water for organic contaminents.

In spring of 1980, the New Jersey Department of Environmental Protection ran some tests for us, and we started to show traces of the same chemical affecting Rockaway Township. However, the New Jersey DEP advised us that the state standards for contamination were one hundred parts per billion for both trichloroethylene and tetrachloroethylene, the two chemicals which would be our problems later in the 1980's.

At this juncture, please allow me to digress - as much for the audience as for Assemblyman Lesniak. A little background information hopefully will allow this presentation to be a bit less confusing to all of us as we live through it.

Trichloroethylene and tetrachloroethylene are rather common chemicals which are used in a variety of industrial and commercial functions. Dry cleaning establishments, machine shops, repair trucks, etc., will often have a can of TCE and PCE to be used in some efficient manner. In fact, the cleaning of septic tanks ranks high on the use list, a point which I shall refer to later. These are certainly not rare chemicals.

ASSEMBLYMAN LESNIAK: Do you know if DEP has changed the regulations regarding the use of these chemicals for cleaning septic tanks?

MAYOR JOHNSON: At this point, they are still in use for cleaning those septic tanks, as far as we know. You can still buy cans of TCE over the counter.

ASSEMBLYMAN LESNIAK: I think they may be out. They may be disallowed now for cleaning the septic systems.

MAYOR JOHNSON: I'm not sure they have been altogether. We can still get them. I know that. But there are people who bring cans of them to us. Bell Telephone trucks, I think, have cleansing solvents that are used in that fashion.

The U.S. EPA adds another word to TCE and PCE, however; that word is carcinogen. Both TCE and PCE are suspected of being potentially harmful to one's health if ingested in large amounts over a long period of time. I do not know what a "large amount" is, nor do I know what a "long period of time" is. For that reason, EPA has ruled that states should establish guidelines as to these chemicals. That is a great word - "guideline". After watching our situation unfold, I can define this word as, "an agency regulation that cannot be enforced".

Anyway, the New Jersey DEP had to establish a guideline for the chemicals, and one hundred parts per billion was acceptable as per New Jersey regulations. Other states have other guidelines, which indicates to me that no one is really sure what is safe and what is not. Please note at this time that EPA - Federal EPA - still has not issued guideline numbers.

Returning to the Rockaway case, we were now showing traces of contamination in one of our three municipal wells. We continued to test our wells through the late spring and summer of 1980, and the traces inched up slowly in the one well. All of these samples were sent to New Jersey DEP and we were constantly advised that we were well within state guidelines. A point which also should be raised is that our other two wells were okay, and the third well which showed the traces of contaminants had its water diluted within our distribution system.

In September of 1980, our first major problem confronted us. The contamination plume had reached our previously tainted well, and the contamination level in our well number one jumped from acceptable levels to substantially above the one hundred parts per billion guidelines. On the twelth of September, I ordered a shutdown of the well. From that point on, we would have to draw all of our water from the remaining two wells.

Traditionally, the water demands on our system ranged from one million to 1.6 million gallons per day depending on the time of year, temperature, etc. Since we were moving away from the peak of the summer period, we felt that we could make it through the winter utilizing the two wells. Nevertheless, we also knew that it would be impossible for us to function in this manner on a permanent basis, because our remaining wells could only pump approximately five hundred thousand to six hundred thousand gallons per day; therefore, water treatment was to be our only answer.

After the first wells closed, we dealt with our problem in two ways: the first attack plan, per se, revolved around a search for the contaminants. Our Health Department surveyed our community as to the potential hot spots, but when one is dealing with a chemical measured in parts per billion, it becomes obvious that we were dealing with the proverbial needle in the haystack. We also knew that Rockaway Township had instituted a search for the source, and their results were basically no better than ours. Our second plan of action was somewhat more realistic. Once the water supply becomes contaminated, it is impossible to remove the chemicals from the water. Therefore, the water must be treated after it is drawn from the aquifer and before it enters the distribution system. But how should this treatment be effectuated? What is the current methodology?

We in Rockaway spent a great deal of time in the fall of 1980 investigating and researching water treatment methodology. We found that essentially there are two methods of treating contaminated water: aeration and carbon filtration.

While we in Rockaway Borough were researching, Rockaway Township was experiencing another problem. In October of 1980, a leaking gas tank from a service station had added ether to the Rockaway Township water supply. A water emergency was declared by my counterpart in Rockaway Township, the Honorable Bill Bishop, and Rockaway Township immediately ordered a carbon filtration system from Calgon Corporation for the removal of the ether and the organic contaminants. That system became operational by late fall of 1980.

At the time, we in Rockaway Borough were thankful that we were not experiencing the Township's problems. We had investigated the methodology and found that carbon filtration seemed to be the best method of removing organic chemicals from the water supply. In our judgement, carbon filtration, in our situation, was vastly superior to the aeration method because the carbon would remove all of the known organics where aeration would only remove a large percentage of the contaminants, and also the carbon filtration would remove the contaminants from the environment. Aeration takes the contaminants out of the water, but then places them in the atmosphere.

By the end of 1980, we seemed to be coping with two wells, and we were ready to pass the necessary ordinances to purchase the water treatment facility. I had our Borough Attorney draw up the necessary ordinance and contracts in January, but the Borough Council wanted to hear one last round of aeration and carbon presentations before making a final decision. These presentations were made on the 17th of February, 1981.

At the conclusion of the presentations, we met and decided to enter into a contract with Calgon Corporation because we felt that: A, Calgon filtration was the preferred methodology; and B, the Calgon price was far less than its competitors. We would complete the action at our first March meeting of the Governing

Body. We never got there. All hell broke loose on the 27th of February.

Referring back to September of 1980, we had closed our well number one. Our other two wells were okay. We were testing our remaining two wells for organic contaminants through the fall and winter, and we were doing just fine -- that is until the 27th.

Walter Krich, our Borough Administrator, called me later that Friday afternoon and gave me the dreaded news: the contamination plume had shifted into a second Borough well. Not only had the well become contaminated, the contamination levels were substantially over the state levels of one hundred parts per billion. We could operate with two wells, but we could not operate with one. I will never forget that night as long as I live. Walter and I went to an all-night emergency planning session comprised of the two of us, the police, the fire chiefs, our Public Works Director, our Water Superintendent, and our Disaster Control Officer. We had to advise our water customers not to use the water for drinking and cooking purposes because of the potential health hazards. The problem was logistics. The Rockaway solution was a case study in Local Government response.

We drafted and printed a notice to be hand delivered to our customers. Our customers, by the way, were mostly in Rockaway Borough, but we do have several hundreds of customers in the neighboring Rockaway Township and Denville. Early Saturday morning a number of Borough employees plus volunteers from the fire department were brought in, assigned an area, and then sent out to distribute the notices. We also alerted regional radio stations and newspapers, and then the wire services picked up our story, and then the New York and statewide media picked up our story, and so on. We had been a bit apprehensive that our customers would not learn about the problem. With all the attention we attracted, it had to be impossible for someone not to know about the Rockaway water problem.

Since our residents could only use the municipal water supply for sanitary and general uses, we felt an obligation to supply drinking water. Our Disaster Control Officer and Police Chief contacted the New Jersey National Guard to borrow water supply trucks. Another Morris County community, Morris Township, loaned us an eight thousand gallon tanker. A local dairy also donated a tank truck. All in all, we had six water trucks which were used to supply water to our customers. The water itself was trucked in from the aquifer used by the County of Morris, which was different than our contaminated water supply.

Our first priority was to supply the schools. In addition, the larger trucks were placed in centrally located areas so that the residents could fill up whatever bottles they had with good water. The Coca-Cola Bottling Company was also generous enough to donate thousands of two-liter bottles which were distributed to senior citizens.

All in all, the supply system worked pretty well. Everyday you would see people lining up to fill their bottles and jugs. But most of the people understood that it would be temporary and there was little else that we could have done. In fact, I believe that our response covered all possible alternatives.

Once the supply system stabilized, we then moved on to the filtration system. Our problems were to be substantial in this area.

The Calgon contract was no problem. We had contracted to purchase three filtration tanks which would weigh fifty tons each when filled with carbon and water. The tanks would be available in approximately two months. The site would be the problem.

Our three wells, which is our entire municipal water supply at this time, are approximately two hundred yards apart. We felt that it would be most cost-efficient

to have one centrally located filtration plant located in our municipal public works storage yard, which is by one of three well houses. However, our yard was located over an old canal bed of the Morris Canal. Placing one hundred and fifty tons of steel and concrete would require a great deal of foundation work. We eventually had to sink thirty-six wood pilings and seven tons of steel thirty feet down to support our twenty-six by fifty-seven concrete pad that held the tanks. That took a great deal of time and a substantial amount of money. We had hopes of bringing the entire project on line at a cost of approximately two hundred fifty thousand to three hundred thousand dollars. Every time we encountered more problems, the financial meter kept running.

We then encountered more complications. With the installation of the Carbon Filtration System, we would need to rephase all of our pumps and install new water lines in some sections. Our water system is over half a century old and was due for some modernization anyway, so this seemed to be a fine time to make some changes. Of course, all of these changes cost dollars.

Rather than spend time going over the tedious details of construction, it will suffice by saying that the overall construction took about four months and we became operative by the end of June of last year. The overall cost of the project was approximately six hundred thousand dollars.

During the time spent on construction, we were also involved in other activities, not the least of which was an attempt to locate: A, the source of the contaminant; and, B, some state or federal monies to help defray some of our costs.

ASSEMBLYMAN LESNIAK: Mayor, continue your testimony. I have to break away for a few minutes. I have it in writing and we will go over it after you have read it.

MAYOR JOHNSON: In terms of the source of the contaminants, we are of the opinion that the PCE is located somewhere in the Borough and the TCE is coming from the same source that affected the wells of Rockaway Township. I went to Washington on three different occasions and met with Senator Bill Bradley and Congressman Bob Roe basically to search for help with our problems. I asked Senator Bradley to have his staff research the Department of Defense records because I had received numerous phone calls from employees of a company which conducted research for the Department of the Navy. These employees said that this company had used chemicals and had dumped them on-site. It is conceivable that these chemicals had made their way through the soil and into the aquifer in the years since the testing was done, which was approximately twenty years ago. Even so, it would be difficult to establish guilt. I also asked the Senator for help in securing federal aid so that our water customers would not have to shoulder the entire financial burden.

My contacts with Congressman Roe were two-fold. He currently serves as Chairman of the Water Resources Subcommittee of the Committee on Public Works and Transportation, and he is nationally known as one of the few water experts in Washington. He is also known in this state as a leader in attracting Federal Public Works dollars. On the one hand, my contact with Congressman Roe was to go after federal aid. But the other portion of my contacts really transcend the problem of the Rockaway Borough water supply. The other part of my discussions with him pertained to a problem which all of New Jersey could face in the very near future.

On the 20th of March of 1981, I testified before Congressman Roe's Subcommittee, and I think my statement at that time is still pertinent. I would like to share some of the same thoughts with you.

Quoting the statement: "Our aquifer services many communities in our region. Our neighbors to the North and West, Rockaway Township and Dover, have each been forced to close some wells due to chemical contamination. Will the contaminants stay put? I think not. I suspect the contamination in our aquifer will eventually

touch every town serviced by that water source".

There is a major lesson to be learned from our experience. As I mentioned previously, there are few guidelines as to what the danger levels of the toxic contaminants really are. In addition, there are even fewer guidelines as to what elements should be included in water testing procedures. We found toxic contaminants because we were looking for them. In my judgement, it is absolutely essential that Congressman Roe's Subcommittee spearhead a drive at the federal level to force EPA to come up with some guidelines as to dangerous levels of toxic contaminants and also establish useable guidelines for testing. How many communities in this state and other states have tested their water supplies for toxic organic contaminants? Are we facing a situation where the people of our state are unaware vis a vis potential harm in their water supplies? Again, we must force this issue of guidelines for safe, drinkable water.

There is another vital issue which goes hand in hand with the establishment of water safety guidelines. That issue is the source of contamination in the first place.

We are all aware of the catastrophic events such as the Love Canal in New York State and the massive chemical fires which have struck our state. But have we fully explored the possibility of toxic chemicals being dumped years ago as well as recent spills? New Jersey is one of the leading chemical producing states in the country. We naturally have a greater likelihood for problems.

I had met with Senator Bradley just one week prior to our water emergency to ask him to explore the possibility that a chemical company, in close proximity to our community, might have used either TCE or PCE in a project under a contract with the U.S. Navy twenty years ago. He has since been in contact with the Department of Defense to research that possibility. Representatives from the New Jersey DEP have also been looking at the same firm as a suspect in the aquifer contamination. That was a federal contract. How many other private contracts have involved the dumping of these toxic wastes? It boggles the mind when one considers the parameters of this situation.

The basic quandry in this area is obvious. Local governments will not be able to financially support major search efforts to seek out sources of contamination, especially given the five percent spending caps on local expenditures. We must have outside financial assistance from state and federal authorities if we are to be able to root out these polluters. Monies allocated in the Toxic Superfund legislation of 1980 are a step in the right direction, but we must extend the breadth of the legislation.

Our aquifer is contaminated. I seriously doubt if it can be removed by other than natural water flow. However, if major efforts can be initiated to search out other potential toxic hot spots, we in New Jersey might be able to clean up the contamination before it spoils more underground and surface water systems.

Water availability and water drinkability are major challenge areas of the 1980's. A national spotlight has been placed upon this issue due to events in the past few years. Droughts, shortages, and contamination have caused economic hardship for millions of Americans, and those very problems, if not handled properly, will create even greater hardships in the future.

In this era of budget-cutting and belt-tightening, all Americans are being asked to make personal sacrifices for the good of these United States. We are being asked to prioritize our needs and cut back on superfluous expenditures. I venture to say, however, that water issues and issues related to solid and liquid waste disposal must be placed high on the priority list regarding the agenda for the 1980's. To avoid these crucial items at this time could very easily create traumatic conditions by the end of this decade and into the remainder of this century.

Since that statement was offered to the Subcommittee, we have been able to complete our system and we have been operational. We are still testing our water twice a month, and it seems the contamination has stablized. At this point the raw water going into the system is approximately two hundred parts per billion of PCE and thrity-five parts per billion of TCE - although that varies some. But the important fact is that the readings are zero after treatment. The system works.

I also mentioned the fact that we had to pass a six hundred thousand dollar bond authorization to finance our project. Breaking the numbers down to the homeowner level, however, is more realistic. In general, our water bills went up approximately three to five dollars per month. Our minimum water bill went from five to fifteen dollars per quarter. Our average water bill is approximately sixty to eighty dollars per year. But a presentation of costs, either for the homeowner or the municipalities, really misses the point. The prime consideration for all of us should be the health and safety of our residents. In my judgement, there are several alternatives which must be explored as soon as possible so that the experiences of Rockaway and other communities can be avoided.

The first proposal revolves around the testing process - it is directly related to Assemblyman Lesniak's legislation. We found toxic contamination because we were looking for it. Yet, many communities do not have regular testing for organic contaminants. These communities will test for bacteriological counts, but organic scans are essential, in my judgement. The impetus should come from the New Jersey DEP to establish regulations to require all water companies, all water providers to conduct such tests.

There is a companion problem in this particular area. We are a municipal water supplier. There are many water companies in New Jersey. We are testing. I would hope that other companies are testing. But what about the average homeowner who has a private well? Will that person walk the extra mile to determine the safety of his or her water? How many of the people in the audience who have private wells have tested their water supplies? Ignorance or apathy can be deadly in this area. An education process must be undertaken to inform these individuals as to the potential hazards they may be facing.

A second area of research keys in on the standards for the chemicals. What is safe? What is not safe? For our toxics, 100 parts per billion is the New Jersey guideline, Pennsylvania's guideline is 4.5, Delaware's guideline is 15, and so on. Let's push EPA to establish national guidelines so that we will have some foundation data with which to work. A federal agency is the proper place, in my judgement, to look toward in dealing with a national problem.

A third point refers to the relationship between public officials and New Jersey DEP. We are not experts. DEP should have experts. These staff people could form what I would call an "environmental SWAT team". They could aid and assist municipalities in terms of testing, locating toxic source areas, and a variety of other functions. As soon as regulations are established, these staff people could provide the enforcement. I am sure that there are other communities in New Jersey which have similar problems to those encountered in Rockaway Borough and Rockaway Township. I would also suspect that few of these communities have addressed the problem as quickly as the Rockaways. It will be dereliction of duty for any public official to ignore a problem which would be hazardous to the health of his or her constituents

The fourth point which I shall propose was mentioned previously in my statement to the Roe Committee. It is essential that contamination source areas be found and cleaned up. The Federal Toxic Superfund Bill, sponsored by Congressman Florio is an important step in the right direction, but it is only one step. For

every price's pit there are dozens of other hot spots in New Jersey, both known and unknown. Major efforts must be made to correct this tremendous area of concern.

All in all, we can suggest, propose, study, etc. for years. Commitment is the key word -- commitment to the problems of work quality and more importantly, commitment to the realization that water problems must be solved very soon in our State. Contamination of surface and underground water supplies constitutes an environmental timebomb - a timebomb set to explode in the 1980's. Our efforts in the next few years could very well lead us into a lifestyle of safety and security concerning water quality, or a lifestyle of traumatic conditions revolving around a basic essential of life -- water. Let us all hope that an effort will be made to correct this serious situation.

That concludes my statement.

MR. MILLER: I would hope some of the questions that you raised and some of the suggestions that you offered in the last section of your testimony will be at least responded to, if not resolved by the testimony of our next witness, Arnold Schiffman, who is the Director of the Division of Water Resources in the Department of Environmental Protection.

A R N O L D S C H I F F M A N: Actually, I have the option of making a very short presentation by simply saying I agree with everything Mayor Bishop said. Both Mayors' presentations, I think, really got to the point. I will give you a brief overview of some of the issues. I will give you a little bit of insight into the nature of groundwater contamination, and then I would like to focus on some of the remedies which are not thorough by any means. There has been recent action on the financial end which would provide better ways of dealing with the problem than we have in the past. They are by no means perfect, but they are better.

First of all, the underlying nature of groundwater contamination: It's not a new problem. It has gotten a lot of attention recently. One of the problems which we faced in the past was that groundwater was believed to be a protected source in terms of water supply, relatively protected from contamination as compared to streams. More recent information has shown that to be quite correct, as we all know.

There are many, many sources and causes of groundwater contamination. Some of them get more attention than others, such as hazardous waste dumps. Landfills get a lot of attention. Some of the more mundane causes of groundwater contamination have only recently been brought to light. There was recent testimony on the problem of leaking gasoline tanks, for example. There are thousands and thousands of gasoline stations. Most of them have leaks of one kind or another. Gasoline has many constituents in it - among them is benzene, which is a known carcinogen.

Septic tanks: There are tens of thousands of septic tanks in New Jersey. Many people put septic tank cleaner in their septic tanks. Septic tank cleaner is made up of solvents: trichloroethylene, trichloroethane, methylchloride, and propylchloroethylene. These compounds get into the groundwater.

There are even more common sources. We don't need just organic chemicals to contaminate groundwater; salt could contaminate groundwater. You can get salt by pulling in from the ocean, or you can get salt from salting the roads. It is not uncommon to have wells contaminated just by road salt.

New Jersey presents a particular severe type of problem, as far as groundwater goes. It is mainly the nature of the state. The State of New Jersey is densely populated. We also use a tremendous amount of groundwater. Over half of our water supply is groundwater - half a billion gallons a day. Because we are densely populated, we have many cases where the people are in close proximity to the pollution. By and large, this is not true in most parts of the United States. It is a big problem in New

Jersey. Groundwater contamination is very common throughout the United States. What is not so common is to have people immediately impacted by it, to have polluted wells. That is not very common in the United States. Unfortunately, it is common in the State of New Jersey and it represents a very large problem.

Well closings have almost become a routine matter for the Division of Water Resources within DEP. We have closed, in recent years, over six hundred wells. That number is increasing as we pay more and more attention to the problem. We have recently closed sixty wells in Toms River -- Southern New Jersey -- because of contamination. These numbers are growing daily as we analyze and find problems. As was noted, not everything is analyzed. Usually there is a reason: Sometimes we are working on a contamination case where we know there is some local contamination in the groundwater -- a leak or a spill on an industrial facility, what have you. We then often test the wells in the area. We go around testing. More often than not, we find that these wells are polluted to one degree or another -- sometimes gross contamination, sometimes trace levels.

Until just a few years ago, some of the testing methods that we are now using did not exist. There were no ways of looking for these low levels of organic chemicals. Even today that is a problem. Tests are expensive. The laboratories that are capable of testing are not great in number. There is the question of the integrity of the analysis. We have a Laboratory Certification program which has only recently been put into effect. All of these things are problems.

Another issue: Basically, in the United States, most of the emphasis in the past has been on our surface water -- mainly through federal laws and programs. The Federal Clean Water Act was aimed at surface pollution -- our rivers and streams. Very little -- in terms of resources -- was put into the groundwater area, although in the State of New Jersey, the Division of Water Resources has the prime responsibility for the management of both surface and underground waters. If you look at the split of our resources, you will find over ninety-percent, in terms of personnel, are in the surface water area, and maybe ten percent are in the groundwater area -- actually, less than ten percent.

ASSEMBLYMAN LESNIAK: Why is that?

MR. SCHIFFMAN: Mainly because of the nature of the federal laws. Most of the dollars were federal dollars. If you look at the construction of sewerage treatment plants, we get one hundred million dollars a year. There are no dollars for dealing with the groundwater contamination. By the way, those figures I gave you, a few years ago they were much smaller on the groundwater. We practically doubled our resources in that area. Until a couple of years ago, the State did not have a drilling rig to put some holes in and say, "Look, we have one now." That is very limited. We have used it in this area to assist the local government.

Another problem that people are not aware of is that there are not many groundwater specialists in the United States. There are only a few thousand -- maybe three thousand or less -- state, federal government, and consulting firms. That number has been growing considerably since I was in the business sixteen years ago. There were not too many of us then, but the number has grown. That is still a very small number. We face a lot of competition in obtaining staff and resources. The interesting thing is that as the problem comes more and more to attention and as the need for the resources increase, the competition for the staff and the people knowledgeable in this area increases. There are very practical difficulties.

The Division's resources in groundwater are, as compared to other states, one of the largest in the country. That is only recently, and it still does not being to deal with the problem. All of these things are real issues.

ASSEMBLYMAN LESNIAK: What is going to happen when we require a periodic testing of all water supplies?

MR. SCHIFFMAN: We have periodic testing now.

ASSEMBLYMAN LESNIAK: We have periodic testing of all water supplies?

MR. SCHIFFMAN: Of all public water supplies.

ASSEMBLYMAN LESNIAK: For organic contamination?

MR. SCHIFFMAN: Not for organics. That is the problem. You are basically dealing with two problems. One is the cost. I am glad to hear that the costs for Rockaway -- although they might have seemed high to you, I thought they were quite reasonable -- it was a good price. I believe as more tests are performed, the unit cost will drop. That is going to be a problem. I don't think that is an insurmountable problem. Keeping track of the data and information that comes in might be more of a problem. Probably the biggest issue of all -- as was mentioned by the two Mayors -- is that there are no standards for most of these compounds. We are developing guidelines, but testing for getting the numbers and the values immediately raises the question of "Is this good or bad? Is it okay or not okay? What do we do?" Right now we have only crude guidelines. That is probably going to be the biggest problem. However, that is going to have to be solved. I would say don't do the testing because I don't know how to answer the question whether it is good or bad. You need to know. I think we have to know.

For the public water supplies, it is achieveable. There may be some questions and refinements that we have to make in the process and in the legislation as it goes through the process.

ASSEMBLYMAN LESNIAK: The legislation that is drafted would apply to water supplies serving one thousand people or more. What is your feeling about that?

MR. SCHIFFMAN: That is pretty close to the testing requirements we have now.

ASSEMBLYMAN LESNIAK: For bacteria?

MR. SCHIFFMAN: For bacteria and other chemical compounds, such as arsenic and lead. Actually, some of the testing requirements go down to smaller supplies than that.

ASSEMBLYMAN LESNIAK: What about the people below that level?

MR. SCHIFFMAN: For individual wells, there really isn't a program in the state to speak of at all, even for the routine parameters on a periodic basis.

ASSEMBLYMAN LESNIAK: Are you familiar with the hundreds of water companies?

MR. SCHIFFMAN: New Jersey has more water companies than it has towns and cities - over six hundred at last count.

ASSEMBLYMAN LESNIAK: Some of them may very well be and certainly are serving 500 residents?

MR. SCHIFFMAN: Yes. We might have comments on that number because we have testing requirements for systems that are below that. You should understand that there are other types of water supplies that aren't public water supplies that serve the public. We also have requirements on them, and we might want to have some comments on that legislation, as far as that goes. There are the non-community public supplies - a restaurant or a hotel, for example. A lot of these have their own sources, and these are not in the same category as public supply, yet they serve the public. There are testing requirements for those too. This is a very tough issue that is being raised; it has to be raised and it has to be addressed. It's not going to be that simple. I think the public is demanding to know the nature and safety of their water supplies.

ASSEMBLYMAN LESNIAK: We had comments from the Department at the March 25th hearing regarding that issue.

MR. SCHIFFMAN: I can assure you that there will be comments on the legislation.

ASSEMBLYMAN LESNIAK: Regarding this specific legislation?

MR. SCHIFFMAN: Yes.

A little bit more about surface and groundwater: In surface water and streams, we had some degree of analysis on organic chemicals. We don't find too many of the so-called volatile organics -- as both Mayors mentioned. It evaporates in the streams. The underground system preserves the pollutants. I would like to add something on the nature of the problem before I go into some of the dollar remedies that are available now. This has also been mentioned by both Mayors. Actually, where public supplies are contaminated with some of these organics, they are probably lucky to one extent compared to an individual well: the solution is available; you can impose treatment. There are things that we can do. Cost is a problem, but at least there are things you can do.

What about private wells? Individual wells? There are certain things we can do there. I will get into that when I talk about the remedies. Still, cost becomes an even more major issue. Let us say you have treatment on an individual well. You have questions, "How do you know the treatment system is going to be maintained?" The public supply doesn't have that problem. There is somebody to do it. It is a very difficult issue. "What about the cost of the individual treatment system?" It is a very tough problem to deal with.

So, if the public supply is contaminated, that is a more handleable problem than when an individual well is contaminated.

Some of the other problems we have with groundwater contamination: It is pretty easy to figure out what is happening in the stream - you know where it starts and you know where it ends. Generally, you can see stuff that is going into it - a pipe, an industry discharge, or even surface runoff. You can make judgements on that. You can sample it; you can analyze it; and you can figure it out. Groundwater is a lot more difficult. Frankly, I can't see under the ground any better than anyone else can. We do have sophisticated equipment, but it is costly to investigate the groundwater. Let me give you a simple illustration: If I want to take a sample of a stream, I send out a technician with a ten cent plastic container, and he takes the sample -- or a glass container and he takes a sample. But when I get a sample of groundwater and I don't have a hole in the ground, I have to send down a one hundred thousand dollar drill rig with a crew of three people. They just don't pick up the sample - they have to drill, they have to pump it, then they have to figure out if they put the hole in right place, and how many holes they would need. So there is a great esculation in the degree of complexity of the problem. It's not that it's not solvable, it just takes a lot more resources and it takes longer to solve the problem. This is just to give you a little bit of a perspective on the nature of the problem.

Remedies: The biggest issue, frankly, is money. Technically, the remedies are not that difficult, as has been demonstrated in this community. They decided to fix it, and they fixed it. They did a good job of fixing it. They were lucky in some respects, regarding the nature of the contamination. That was amenable treatment, by air stripping and granulated activated carbon.

As far as money goes, in 1981 two bond issues were passed. One of them was the Water Supply Bond Issue of 1981. That provided money, mainly to solve our water supply problems from a quantity standpoint, and it also addresses the quality issue. There are dollars in there for rehabilitation of damaged water systems. The damage could be either leaks or the knocking out of supply because of contamination.

Getting back to the nature of the problems: loss of the water supply, of course is a catastrophy, such as a drought when you run out. The contaminants of the water supply is a different type of catastrophy: as far as a drought goes, it eventually rains; the contaminated water supply stays with you -- it is a much longer term. I guess it is a question between immediate demise or a lengthy, long, drawn-out one. There are dollars that will be available. There are going to be procedures to do it. We are going to have to have priority lists for how we spend the money on rehabilitation, but millions of dollars are available.

ASSEMBLYMAN LESNIAK: Not much, really.

MR. SCHIFFMAN: Compared to the size of the problem? That is correct. It is a start. There was nothing available until recently. The one hundred million dollar bond on hazardous waste facilities is a potential source of money.

There was also a bill passed called the Sanitary Landfill Closure Act of 1981. That provides for a tax to be established where a landfill is causing problems.

ASSEMBLYMAN LESNIAK: Do you know how much money is going to be raised yearly on that tax? Do you know what the estimate is?

MR. SCHIFFMAN: I really couldn't estimate it now. I could tell you right now that the closure, alone, takes quite a bit to make sure that it is closed.

ASSEMBLYMAN LESNIAK: No. Not the cost. How much money is going to be raised by the tax?

MR. SCHIFFMAN: It will be a substantial amount. It will be millions of dollars, but not all of it will be for the remedy for damaged water supplies. There is also going to be the need to establish priorities and constraints on how you deal with these issues.

ASSEMBLYMAN LESNIAK: We have already put a claim on something like that.

MR. SCHIFFMAN: Everybody is looking. By the way, you have saw an illustration as to the cost to this community, which is not a very large supply, it is a moderate, medium sized supply. You have heard of the dollars they had to spend. At that rate, you could spend an awful lot of money.

From a management standpoint, the Water Supply Management Act of 1981, in conjunction with the Safe Drinking Water Act, has provided substantial tools to deal with these problems. For example: the individual wells. We now have the ability to order a public water supply to take over those individual wells. The law also requires the Board of Public Utilities to set just and reasonable rates. You spread that cost over the rate base of the entire facility. That makes it economically feasible to order the public water supplies in.

ASSEMBLYMAN LESNIAK: The cost of water is definitely going to go up?

MR. SCHIFFMAN: Yes. But it is one thing to order a public water supply in and make the individual pay three, four, five, or six thousand dollars, and it is another thing to order it in and then pay a yearly water bill of one hundred dollars, or whatever it is. The rates for the larger system might go up. If it is a medium system, it might go up a dollar a year for everyone, or it could be pennies a year. Generally, this is a tough issue because people say, "Why should my water bill go up because of somebody else's problem?" I found, in general, that the public is fairly understanding about paying a small increment over the entire system to solve the problem of their neighbors who are in serious trouble.

ASSEMBLYMAN LESNIAK: Was our water supply any safer ten or twenty years ago, or do we have the technology to discover that there are certain contaminents in the water and that those contaminents are unsafe?

MR. SCHIFFMAN: In general, I think it is the latter that we are now beginning to find more problems with. But I would note the nature of the State of New Jersey was

not the same many years ago as it is now. On the shore, we had a lot of temporary homes. The people that came just for the summer vacation are now permanent. In the Northwestern part of the state where you had your lakes-- As a matter of fact, Lake Hopatcong had, for example, temporary homes that became permanent. It changed the nature of the problem. It is more densely populated and the people are closer to the problem. I think it is a subject of those two factors. One, we know more; two, we became more densely populated in areas that weren't intended to become populated and they were served by individual supplies instead of public when the public supplies were inadequate. We have a lot of systems in in New Jersey that are not only subject to contamination from these organic chemicals, but I occasionally have the strange duty -- and I use the word "strange" deliberately -- to issue "boil water" orders for bacterial contamination -- that is medieval. That is very unusual. So the problems are substantial. I think those two factors are involved. Frankly, the greater knowledge and information is probably the most significant issue. I think a lot of these problems existed twenty years ago. We had gasoline stations then.

ASSEMBLYMAN LESNIAK: Not as many. The tanks were undersold.

MR. SCHIFFMAN: That's right. It is becoming more serious. There is no question. By the way, New Jersey has also put additional stress on the groundwater to supply the growing population. All of these factors come into account. Again, we have better ways of dealing with it now.

For the publically owned water supply, the new Water Supply Management Act, which was signed in August of 1981, provides that if the Department gives an order to a publically-owned system, municipal system, they are exempt from the caps if they have to comply with that order. It makes it more feasible to increase the cost to the taxpayers to solve the problem. I generally found that people -- although everybody complains about increasing costs -- are more concerned about having safe water to drink than a dollar or two more in their bills. The public is generally understanding about these issues.

We are also implementing a recent law banning the use of septic tank cleaners that contain dangerous solvents.

ASSEMBLYMAN LESNIAK: That is why I asked about that. What is the status of that?

MR. SCHIFFMAN: We have regulations that will be subject to a public hearing within a month or so. The Act implements the law that takes that material off of the shelves.

ASSEMBLYMAN LESNIAK: How do you enforce that?

MR. SCHIFFMAN: I was just about to say that. A major problem with that is the practical issue of enforcement. The burden of that will largely fall upon the local health officials who will spearhead that, in addition to all the other jobs and duties that they have.

In general, with the larger companies that carry that type of product, such as your large hardware stores -- that type of thing -- a notice to them will be sufficient to remove it from the shelves. Disseminating the information is going to be a problem. I think most people will voluntarily comply. The difficulty is that these constraints are not throughout the United States. You can go into New York and buy that. New York has a similar ban, but it is limited to certain areas of New York State -- basically Long Island. Pennsylvania doesn't have a similar requirement. You can go to Pennsylvania and still buy these septic tank cleaners.

I think by education, people will realize it is a problem. No one really wants to pollute their well. The only thing is, a failing septic system that is overflowing is most distressful. People will do anything to solve that problem. We found very strange things in septic tanks that people put in under desperation when it is

failing, not only desolvents. We found gasoline. We found sulferic acid, and all kinds of crazy things.

ASSEMBLYMAN LESNIAK: We are going to have to deal with standards for septic tanks, aren't we?

MR. SCHIFFMAN: You seem to like these nasty issues, not only water supplies. There are a lot of problems with septic tanks in New Jersey. We do have revisions to some of our requirements to deal with that. You wouldn't have the septic tank cleaner problem if you had a better design siting septic tanks. We created the problem ourselves to a large degree.

That is basically all I would have to say. As I noted before, both Mayors, in their testimony, hit upon a lot of the issues, and they are very practical issues. They also made some, what I consider, good recommendations. I am glad I was here to hear those recommendations. We will probably make attempts to provide more service to local government than we have now. I would just warn everybody that the resources are limited and the costs are substantial in terms of drilling and testing, etc. There are more communities that need the service than there are people to provide it. The priorities will be tough. Everybody needs the help. What the Mayors have said were correct. The Division of Water Resources, DEP, does have the technical expertise, and it is our responsibility to provide that to the people. We will try to do better in that area.

Generally speaking, our attention goes to the one who has the greatest problem, and I will be frank, the problem is--

ASSEMBLYMAN LESNIAK: The loudest voice?

MR. SCHIFFMAN: That's right. The problem in this area compared to other areas is not as severe as other problems that I know of in the state. To a degree, our interest here was not only
The fact that a solution was forthcoming made all the time and effort we spent here worthwhile, because we are learning, the same as everyone else is.

ASSEMBLYMAN LESNIAK: What is happening in Atlantic City?

MR. SCHIFFMAN: Atlantic City's supply is safe right now. Let me put in technical terms, although it is simple, what the problem is in the state. There is the issue of what we call, in the public health field, "The protected source." Treatment systems are prophylactic devices. They are not really supposed to treat polluted water; they are supposed to be there in case the water becomes contaminated. Your source should be protected. In the case of Atlantic City, it has a well field, and the contamination is moving towards it. It is not a protected source. If there are other alternatives, those should be in place. From a cost standpoint, it might be cheaper to abandon the supply than to try to clean it up. These proposals have been made.

The risk is not there right now. It is a potential risk and it has to be fixed. Not only does it have to be fixed, but you can't have questions as to your water supply in an area like that, which depends on tourism. You just can't have it. We can't have these questions being asked. You have to be able to assure the public that their supplies are protected. It doesn't have to be Atlantic City; it can be here. You can't have people worrying about whether their water supply is safe. To give you a personal perspective on some of the problems I deal with when I face people whose wells have been contaminated: if your wife was pregnant and she was drinking from this water supply, as an example, and she wasn't sure of the integrity of the water supply, or the effect on her child that was not yet born, she would be hysterical. The public concern here is great. That is a typical thing that I deal with. People want the problem solved and they want to know. They do get very concerned.

That is a very human type example that I gave you.

ASSEMBLYMAN LESNIAK: We are certainly going to increase the anxiety level of the public when we start this testing, are we not?

MR. SCHIFFMAN: That's absolutely correct. That is one of our major concerns. Although it is my responsibility, and not really yours, I am going to be the one who is asked, "Is this safe to drink if I have "X" parts per billion of "dimethyle meatloaf " in my well - that is my generic term for all of these chemical compounds. There are millions of these compounds. I think there are over six million unique chemical compounds. I have to come up with an answer. Generally, we use judgement in this area, and the Mayor was correct when he said the federal government has to provide this testing. You can't have different standards throughout the country. There are reasons why it is different in Pennsylvania and New Jersey - it's judgement. There are books you can look through. I have a book with me. I can look it up and I can see the cancer risk per hundred thousand population of "X" parts per billion in the water. It is very difficult to make a judgement as to what that means. So, we take action where it is feasible; where there is a doubt, we order a remedy, where there is a remedy available. For example: I will order a public water supply in, even if all of the wells in an area aren't contaminated. It is a judgement call that I make. Somebody has to do it. But in some of these other cases where there is no remedy, what do you do? Unfortunately, there is no easy answer.

ASSEMBLYMAN LESNIAK: Thank you. We will see you on the 25th.

MR. SCHIFFMAN: Thank you.

ASSEMBLYMAN LESNIAK: Our next witness is Doctor Papel. Doctor, thank you for coming all the way up here.

D O C T O R D H U M P A P E L: Assemblyman Lesniak, it is my pleasure to be here, and on behalf of the New Jersey State Department of Health, I would like to thank you for allowing me to present testimony on the water contamination problems, the potential health affects, and the usefulness of water monitoring through the work of the Hazardous Waste Healthcare Task Force.

ASSEMBLYMAN LESNIAK: Has that task force been established yet?

DR. PAPEL: Yes. It has been established.

ASSEMBLYMAN LESNIAK: Thank you for the plug. We had a hard time getting it into legislation.

DR. PAPEL: The plug is coming later on. This is just an introduction.

I would like to start by briefly discussing the problem. Sources of water contamination are many. Some of the most significant ones can be realized from the following statistics, which I am quoting from a recent U.S. EPA report.

There are an estimated seventy-five thousand seven hundred active industrial landfills in the United States. Some of the figures, unfortunately, I do not have for New Jersey. I am going to report on just the national figures. It is estimated that about fifty thousand six hundred and forty-five both active and inactive landfills may have toxic and hazarous wastes. There are about twenty-five thousand seven hundred and forty-nine industrial components, and again, an estimated fifty percent of these contain hazardous wastes. Seventy percent of these have no lining, and ninety-five percent of these have no groundwater monitoring wells.

Approximately nineteen and a half million housing units in the United States use on-site disposal facilities -- which you had asked about earlier. This results in more than one trillion gallons of waste leeching into the groundwater. Of course, this can contain the cleaning fluids -- which we mentioned earlier -- which used to contain trichloroethylene in the past. You asked whether they still contain

trichloroethylene. From my experience, the companies seemed to have voluntarily removed trichloroethylene. What they have in its place, I don't know, because they do not state that clearly on the label.

In New Jersey, there is an estimate of ten thousand generators of industrial and hazardous waste, and approximately one-third of these are registered with DEP. There are approximately six hundred registered landfills in New Jersey. Again, national figures show only very few of these have linings or groundwater monitoring wells.

In our state, approximately fifty percent of all of the residents rely on groundwater as the primary source of drinking water. I don't know if Mr. Schiffman mentioned this earlier. I am sure he would concur.

It is also a known fact that chlorination of water for disinfectant purposes gives rise to a group of chemicals known as the Trihalomethanes. This problem is greater in areas which have other organic contaminants, which can produce more toxic and longer lasting halogenetic compounds.

ASSEMBLYMAN LESNIAK: Chlorination of water is actually when mixed with other chemicals, creating some toxic substances?

DR. PAPEL: That is correct. We know that chloroform is formed every time water is chlorinated. There is a bromodichlorolmethane and a smaller amount of dibromochloromethane, all of which are considered trihalomethane and for which EPA now does have a standard of one hundred parts per billion. That should only be for the trihalomethanes, not for the other halogenetic organics.

It has been shown that there are more than seven hundred volatile organic chemicals in surface waters, the sources of contamination of surface waters include fine sources such as industrial discharges, spills, and accidents, and non-fine sources such as urban and agricultural runoff, municipal sewer obsolescence, and again, chlorination of drinking water supplies and sewerage.

The organic chemicals which are found most often in groundwaters in the United States, again from the EPA report, include: trichloroethylene, carbontetra-chloride, tetrachloroethylene, 1 1-trichloroethane, 1 2-dichloroethane, 1 1-dichloroethane, dichloroethylenes, methylenechloride, and vinly chloride, in concentrations ranging from very low parts per billion to thousands of parts per millions which would then be -- thousands of parts per bill, which would be parts per billion.

There is no law requiring monitoring of what is volatile organics, and therefore in our state, we do not have a comprehensive data base on the presence and levels of these volatile organic chemicals, or the pesticides or heavy metals. However, the program in the DEP office of Cancer and Toxic Substances Research for the past couple of years has been collecting some data on the presence of volatile organic chemicals. In the most recent report, they showed that those which occur most often in groundwater, again, are sooner to the ones found in the nation. These are: carbontetrachloride, chloroform, 1 2-dichloroethane, tetrachloroethylene, 1 1-trichloroethane, trichloroethylene, dichlorobenzene, and trichlorobenzine. You can see that some of these are different. It is important to realize that the pollutants found in groundwater can often be completely distinct than those found in surface waters, because here we are talking about chemicals which may be from industrail discharges or other spills or leaks. For example: In Rockaway Township, we found isopropylether which is unusual.

One of the most important public health problems of our time is cancer. At present, there is insufficent research to predict how many of these cancers are related to environmental exposures.

Mr. Lesniak, your Bill Number A-2338, introduced by you and passed recently, will help initiate the needed health studies. Unfortunately, the appropriation in this bill is only a one-time deal and not annual.

ASSEMBLYMAN LESNIAK: We will make that on an annual basis, Doctor.

DR. PAPEL: That will definitely help. I will mention that on a one-time deal, we can only conduct very few studies and this would only provide some preliminary information. The unfortunate part about cancer associated with environmental exposures is that anyone can be exposed to these chemicals, often without even knowing about it, and therefore it is not a matter of personal choice.

Since we are talking about the general population exposure, this includes highly susceptible groups such as the very young, the very old, pregnant women, and people suffering from other chronic diseases which may put them at a higher risk of cancer.

In Bill A-2338, during a discussion in the Legislature, they mentioned a concern that a number of incidences of hazardous waste discharges into the environment was increasing at an alarming rate. The Legislature also expressed their awareness of public concern over the potential adverse health effects from exposure to such waste. The Legislature, as you will recall, stated that these health hazard assessments require sophisticated and costly biological and epidemiological investigations, and scientific and medical expertise to conduct and properly analyze and evaluate these studies. The Hazardous Waste Healthcare Task Force is charged with developing and implementing a program to classify and evaluate the public health of communities residing near hazardous waste dumps; also, to determine those at the greatest risk by gathering all available and necessary additional data on environmental contamination and on health effects; to conduct initial diagnostic testing needed to document exposures; and to recommend corrective measures. This Task Force has been established in our State Department of Health in the Division of Epidemiology and Disease Control.

I would like to discuss the various problems which we face in conducting these health studies.

ASSEMBLYMAN LESNIAK: Doctor, could I just ask one question?

DR. PAPEL: Sure.

ASSEMBLYMAN LESNIAK: If we get this legislation through, that will require the periodic testing for organic chemicals that are not required, then we will have the data bank in terms of what is out there. When that is in place, do you see an even greater need for this Healthcare Strike Force team?

DR. PAPEL: Yes. You are absolutely right. It works both ways. For the Healthcare Task Force team to work and to carry out the charge given by your Committee, we would need that type of information.

ASSEMBLYMAN LESNIAK: When this information is made public, certainly we would need people in the Department of Health to evaluate that so that the public can be assured that their health is being protected.

DR. PAPEL: That is absolutely right, because the public, when they find out about the contamination problems in their drinking water, will want to know what it is doing to their health. That is what this Healthcare Task Force will be able to do. Of course, it will take time to conduct a study and to come up with the answers, unless you have a much larger sum of money available to put a lot of people on the Task Force.

ASSEMBLYMAN LESNIAK: We might make a little more money available. I had a hard enough time with the first one. I think we will.

DR. PAPEL: Okay. There are several problems in conducting these types of health studies. I would like to just briefly discuss some of the major problems. The levels of exposure, quite often in these types of situations, are in very low parts per billion; however, some of these are highly carcinogenic, mutagenic, and teratogenic chemicals, and therefore it is important to limit the exposure of the lowest level possible for the general population. The environmental data concerning the presence of these hazardous agents in water, air, and land, is very scarce at present and is usually available only for a couple of years, in some cases; whereas these chronic illnesses do not manifest themselves for several years after exposure. This makes difficult to make predictions about the association between exposure and human disease. It is even harder to show the presence of these toxic agents in the human body tissue and to establish that exposure did, in fact, occur, and that it was not just low level and environmental contamination that we were looking at.

The types and levels of hazardous agents in the various groundwater and surface water supplies are usually quite different, so one cannot extrapolate and apply them to another study. All of these would have to be studied individually.

The population make-up at these various sites may be quite different in each group, and socio economic status, and ethnic composition -- by that I mean are genetic factors, diet, and life styles, whether they are urban or suburban.

ASSEMBLYMAN LESNIAK: There is no such thing as a control group, where you can draw general conclusions based on empirical data?

DR. PAPEL: You have already read my mind. I was going to say at the end that one of the other problems is that it is hard to find a control group which will have the characteristics that the study group has. Then when we do find it, we would have to get these people to cooperate in an extensive study where it would take them a couple of hours to fill out a questionnaire on maybe to submit some biological monitoring that might be required.

ASSEMBLYMAN LESNIAK: We are trying that now, I think, in Bayonne and Elizabeth, regarding exposure to air pollution. Are you familiar with that program?

DR. PAPEL: Yes. I am familiar with that program and we had some problems with that in the sense that they did not include health studies. They just included the biological monitoring. I don't know what they are going to tell these people when they find it in the body tissues -- I mean how EPA will explain it to them.

Another very important factor is that in the United States, in general, fifty percent of the population moves in five years, so to look at present disease and to trace the past exposures which may have occurred fifteen, twenty, or thirty years back, is extremely difficult.

In spite of these problems, it is very important that these health and environmental studies be conducted as soon as possible, specifically, data on the presence of toxic chemicals including: volatile organics, pesticides, and metals, in air, water, and land, for the entire state, would be very useful as we mentioned earlier, to the work of this Hazardous Waste Healthcare Task Force.

I don't know if you would want me to get into any specific health effects, but I would just like to briefly mention a study which was published recently by the Council on Environmental Quality where they reviewed recent findings and conducted an assessment of risks from exposure to chemicals in drinking water. The major conclusion of this C.E.Q. study was that -- by the way, these were six control studies conducted in Illinois, Louisiana, New York, North Carolina, and Wisconsin. The major conclusion of this survey was that these studies have strengthened the evidence for an association between rectal, colon, and bladder cancer and drinking water. I will just repeat

that: it strenghtened the evidence for an association. However, the present evidence is insufficient for a causal relationship between chlorinated organic contaminaants in water and cancer. All of these studies were done by case control studies. The cases were surface waters which were chlorinated public water supplies.

The second point they made was that the increased cancer risks from ingestion of contaminated water would appear to be at the lower limit of detection by epidemiological methods that are presently available.

Thirdly, a dose response between cancer risk and ingestion of water contaminated by halogenetic organics has not been established; however, evidence suggested of such trends has been obtained. That is very important in toxicological terms, for rectal cancer in one study, and for colon cancer in another study.

When I spoke to your staff, you mentioned you were specifically interested in the problem of oil spills and finding benzene in water supplies due to oil spills, so maybe I will just briefly mention some of the health effects of that one chemical.

ASSEMBLYMAN LESNIAK: Please.

DR. PAPEL: If anyone is interested, once in a while I teach a course on toxicology and they can all attend.

ASSEMBLYMAN LESNIAK: I would like you to address the benzene question, and also, just generally the relationship between any health effects and the organic contaminants that are more frequently found in water. Is that too broad a question?

DR. PAPEL: I will mention very generally the halogenetic hydrocarbons which -- these are notes from my course in toxicology -- comprise of a large group of compounds whose solvents have an almost universal application in industry. They are found to be used in fire extinguishers, propellants, refrigerants, as constituents of paints, varnishes, paint removers--

ASSEMBLYMAN LESNIAK: They are all over the place.

DR. PAPEL: (continuing) -- septic tank cleaners, and in industries, used as cleaners and degreasers.

ASSEMBLYMAN LESNIAK: What are the effects of those compounds?

DR. PAPEL: All of the halogenetic hydrocarbons have a narcotic action; the other toxicities, such as liver and kidney problems, vary for the different halogenetic and hydrocarbons -- depending on which one we are talking about. I do have details on each one of these which would take a long time to get into. But, most of the halogenetic hydrocarbons concentrate in the fatty tissue. They affect the liver most often because they are metabolized in the liver.

ASSEMBLYMAN LESNIAK: Doctor, I don't want to take your course on toxicology.

DR. PAPEL: That's too bad. I was wishing you might.

ASSEMBLYMAN LESNIAK: I had organic chemistry in quantative and qualitive analysis at Rutgers and I don't ever want to take it again. What I would like you to do, if you could prepare for our record a brief analysis of your opinion on the health effects of the chemical compounds, the organic compounds, that are more commonly found in the drinking water supplies.

DR. PAPEL: I could mention that right now. The halogens and the hydrocarbons, as I said, all have a central nervous system depressing affect. That is the narcotic effect. But that is at high levels. You are not talking about parts per billion; that is an acute effect and you are talking about exposure at high levels. The other effect that may be a problem when it is found in water, is that it is an irritant to the skin or to any mucus membranes. Because of its fat solubility, it tends to dissolve the fat and therefore would also make people susceptible to other infections.

The major concern of its presence in low levels of water, however, are the long-term effects, the chronic effects, the cancers. In some cases birth defects and mutagenic defects, the effects on future generations, those would be the major problems that we would be concerned about, at low level, long-term exposure. Most of this information is from animal data. I have to stress that point. What we do is -- as Mr. Schiffman mentioned -- EPA and several other agencies, federal agencies, and also at the state level, we use a formula to convert this data from animal exposures to human exposures; then, we use another formula to convert information that is a standard, using high levels of these chemicals in these studies as to what would happen at the lower levels -- we extrapolate this -- gas chromotography -- the straight model.

ASSEMBLYMAN LESNIAK: But we are speaking about increasing incidents of cancer and increasing incidents of birth defects?

DR. PAPEL: That is all we are talking about. Mostly, we are talking about the increasing risk of cancer. For birth defects, we just don't have that much information to be able to extrapolate that data.

ASSEMBLYMAN LESNIAK: Thank you, Doctor.

DR. PAPEL: In closing, I would just like to mention that Rockaway Township has really been a leader in finding solutions for clean-up of water contamination where low levels of organic chemicals are found. Mayor Bishop and Steve Levinson and Rich Christie, from the Health Department, should be commended for their foresight and early efforts in solving a very complicated and serious public health problem. They started on this at least two or three years back.

The activated carbon systems, both at the township level and more recently for use in the individiual homes, which we are also evaluating at their request, is really a state of the art technique and will probably find use at both state and national levels. However, I would like to point out that this is not the ultimate answer. The prevention of pollution should be the goal to providing prevention of diseases, and should be a step in terms of preventive public health.

Thank you.

ASSEMBLYMAN LESNIAK: Thank you, Doctor. At this time, I would like to call on Mary Stites.

M A R Y S T I T E S: Fine.

ASSEMBLYMAN LESNIAK: Mary, where do you live?

MS. STITES: We live in Lake Telemark. I would like to thank you for your concern about the water in New Jersey.

ASSEMBLYMAN LESNIAK: Well, thank you for coming forward to help us.

MS. STITES: We don't manufacture it. Once it is gone, it is gone.

ASSEMBLYMAN LESNIAK: That's right. Where do you live, Mary?

MS. STITES: We live on 4070 Green Pond Road, in Lake Telemark.

ASSEMBLYMAN LESNIAK: And where do you get your water from?

MS. STITES: We have a small, shallow well -- a driven well -- thirty-six feet deep. It has been there thirty-seven years.

ASSEMBLYMAN LESNIAK: And you get your drinking water from that?

MS. STITES: Well, right now we don't.

ASSEMBLYMAN LESNIAK: No. What happened?

MS. STITES: Well, last year I thought I smelled gasoline, and my husband said no. He didn't smell it at first, and I felt pretty sure that it was gasoline.

That spring -- last spring -- we had a new foot valve put in our pump because we were having a little trouble with the pump. The plumber came in and put the valve in and he smelled the gasoline. He filled a container and scooped it up. He said: "Somebody's oil is getting into your well", and he said: "Where is your tank?" I said: "It is in the cellar." He threw some on the ground and lit it, and it exploded. He said: "This isn't oil, it is gasoline."

ASSEMBLYMAN LESNIAK: This was in your water?

MS. STITES: Yes. He told us to come down and mention it, and he said he might mention it, but we didn't do anything at the time.

ASSEMBLYMAN LESNIAK: You kept drinking the water?

MS. STITES: No, we didn't, not since I smelled the gasoline. We have a problem with iron in our water too, which my husband didn't like. We have a lot of iron in our water.

ASSEMBLYMAN LESNIAK: How long ago was this?

MS. STITES: About the iron?

ASSEMBLYMAN LESNIAK: Well, the oil -- the gasoline.

MS. STITES: Oh, let's see, in the spring of '81 -- late spring, Mr. Argenti -- I don't know the exact date -- put the new foot valve in the well.

ASSEMBLYMAN LESNIAK: Did you report this to your local health officer?

MS. STITES: No, I first called the State Board of Health. My husband was a little leery about doing anything for personal reasons. I called Trenton and I wanted to know who would be the best to determine what was in our water, and he gave us the name of a doctor in Hanover, and an outfit in Randolph Township. But, he said: "I would advise you to report it to your Board of Health first." That was in late spring.

After Mr. Argenti took the stuff out of the well, my husband went to the gas station. We are only about less than two hundred feet away from a gas station. He asked the proprietor if he had a leak, and he said no. So, we didn't know where it was coming from. We just didn't know what to do.

ASSEMBLYMAN LESNIAK: Was it ultimately determined where the leak was from?

MS. STITES: No, this is why I am telling you what happened to us in case you make legislation saying that there should be a better way to detect where it is coming from. You know?

ASSEMBLYMAN LESNIAK: Okay. Are you familiar with test work conducted regarding the source?

MS. STITES: Yes. After we reported it to the Board of Health, one day my husband came home--

ASSEMBLYMAN LESNIAK: Is that a Gulf Station near you?

MS. STITES: Yes. He came in with a container of the dirt, and he said: "Smell this." He said: "What does it smell like?" And, I said: "Gasoline." He said: "That's coming out of the gas station; they are putting a new tank in there that was leaking." So, that's when I called the Board of Health. I thought, "Well, this is it."

ASSEMBLYMAN LESNIAK: So it was determined that it was from that leaking gas station?

MS. STITES: Well, no; that's the problem. Here it is, its running into the well. They are taking it out and they are watching it run into the well. So, our Board of Health has been working on it, and they have been taking tests and doing "whatever." I am not familiar with what they are doing, but it seems that Gulf says it is not their gasoline.

Well, I started calling around and--

ASSEMBLYMAN LESNIAK: Well, are there any other gasoline stations in the area?

MS. STITES: No. No, sir, there are no gasoline stations there.

I started calling around and tried to do something on my own, and this lab and that lab would give us different opinions. I just left it up to the township.

The thing is this, Assemblyman Lesniak: It is not coming from outer space. We are not putting it in. They were watching it come in. Now, there should be a better way to determine where it is coming from, because if they say, "it is not our gasoline," we can't afford the expense to prove it. People testify to how expensive it is for them; well, how can we do it?

ASSEMBLYMAN LESNIAK: How are you getting your water now?

MS. STITES: We're getting it from the fire house.

ASSEMBLYMAN LESNIAK: From the fire house?

MS. STITES: Yes.

ASSEMBLYMAN LESNIAK: You have to go every day?

MS. STITES: I have been falling over bottles for a long time. Yes.

ASSEMBLYMAN LESNIAK: That is quite an inconvenience, isn't it?

MS. STITES: It is. Not only that, I didn't realize the danger. Last summer when we flushed the bathroom, the fumes were terrific. I didn't know it was dangerous.

ASSEMBLYMAN LESNIAK: Okay, we are going to see what we can do about determining that source, and ensuring that you have a remedy to replace your water supply.

MS. STITES: Yes. The thing is, it is very expensive. As I say, we are less than two hundred feet. It is coming in.

ASSEMBLYMAN LESNIAK: Thank you, Ms. Stites.

We are going to call Steven Levinson. Steve, you are the local health official?

S T E V E L E V I N S O N: I am.

ASSEMBLYMAN LESNIAK: Steve, are you familiar with the area's problem?

MR. LEVINSON: Yes, I am. We have been notified of the problem. We did take samples of the product water coming out of her well. And, we have certain suspicions as to the source of the problem, in accordance with the testing. We are currently in a situation of current litigation as a result of this, so I am not going to go into detail as to where we stand right now.

Basically, our lab has an opinion which is in opposition to the station's opinion, and once we review their data, we will be taking a position as to whether or not there is any validity to their position.

ASSEMBLYMAN LESNIAK: Has the station been informed that they are subject to triple damages if it goes to litigation?

MR. LEVINSON: We have had several meetings here in the municipal building with the station owner, the operator -- the owner of the gas tanks, who is not the station owner.

ASSEMBLYMAN LESNIAK: Does Gulf own the gas tanks?

MR. LEVINSON: No, they don't own the gas tanks.

ASSEMBLYMAN LESNIAK: The gas tanks are owned by the distributor?

MR. LEVINSON: Yes. The situation right now is that we had a meeting, jointly, with the DEP, the local health officials involved, and the representatives from the station -- the owner of the tank and also the station operator. During that discussion, very definite lines were drawn which leave us at a point now of having the experts review the data and then take a position as to where we stand and what action should be taken.

ASSEMBLYMAN LESNIAK: What was found in Mary's water supply?

MR. LEVINSON: We did find-- There is no doubt in fact, that this is the type of situation where I think this legislation is imperative. Here you have a situation where you have a private well. Most of the legislation which is now being considered and that exists currently -- again, which doesn't deal with volitile organics, or synthetic organics -- does not really address the private well, the private homeowner, who has his own well.

We are frequently asked, for example: What levels are considered safe? What can we do when we have a problem? What legislation is there where we can say, for example, "above this level it is safe, and below this level it is not considered safe?" Without that type of data -- and I realize that it is very difficult to develop because there is no absolute when you are talking about carcinogens -- or very definitive guidelines and strict specifications on test criteria and certification of the labs that do the work, it is very difficult for us to investigate these problems on a local level.

What we have done in response to the problems that we have encountered with Ms. Stites' well is, we have established, with the aid of a citizen's committee, a filter program for individuals that have private wells. And, the filter program -- What was done in this case is that the local health department reviewed data that was based upon EPA studies which evaluated home filtration units, based upon activated carbon. And, after reviewing the data, this filtration task force selected a unit, and these units were put on twelve homes in the most severely contaminated portion of the township, to determine the effectiveness of the unit. And, what the health department was willing to do was to go to the expense of testing the units on a routine frequency for not only the synthetic organics,

but also for the biological potential of activated carbon to grow bacteria, which is a concern as far as it pertains to activated carbon.

The studies up to this point, after five months of testing, have shown that the filters in this particular case have been effective in moving one hundred percent of the synthetic organics in the raw water. So, these are the types of programs, concerning which we are really looking for guidance from the EPA and from the State, who has been really helpful in terms of evaluating certain problems that we have here in Rockaway. Dr. Patel, in particular, has been down numerous times to go over our data and determine whether or not the level we are talking about presented significant risk to the public.

ASSEMBLYMAN LESNIAK: You think definitely the local health department has to be bolstered by the State of New Jersey?

MR. LEVINSON: I think that we are at a point now where if you look at how some of these guidelines, and the calculations that Dr. Patel mentioned, are developed, they are very complicated. And, they talk, for example, of an excess cancer death in a population of one hundred thousand at a certain level of contamination of a particular contaminent, ingested over a certain period of time. And, when we have a lay person call up and ask, "Well, what's my chance of contracting cancer? Is this safe or is it not safe to drink?", there is no absolute answer, because, as Dr. Patel started to go into, with cancer there is what you would call a stochastic relationship -- and that is that there is no threshold level for cancer as far as the current theory is concerned. That means that one molecule of a carcinogen can cause a mutation of one cell in the body and catalyze cancer development in that host. And, where, for example, there were other compounds -- say, for example, lead; a toxic metal -- in a case of that type, where there is a threshold, where low levels of concentration may not show any symptomatology, you may not see any effects of it until it reaches a certain level, where you start to see acute effects - toxic effects.

So, with the case of carcinogens, when somebody asks: "What level is safe?", the current theory is that no level is safe. There is no absolute guarantee that any level is safe. I think what we have to look for are specific guidelines, where the risk involved is at least minimal, and guidelines as far as how to deal with private wells that are contaminated.

Now, the things we are doing in Rockaway Township would be a filtration in the northern end, and with the public water supply, a combination activated carbon system and air stripping device. These are things that are unique, and things that are not commonly done. We get calls from all over the State and all over the country from people that are in localities where the health department does not respond to the problem because, number one, maybe they are-- Unfortunately, because of some of our experiences, we have become somewhat expert as far as dealing with it on the local level. These are real problems that the homeowner, in many cases, is absolutely stifled by. These are real problems.

Ms. Stites' case is a key example of, number one, responding to the problem, and then after responding to the problem, realizing that we have to go through thousands of dollars of tests, in cooperation with the DEP, and then also wind up in court with not a lot of backing because we can't say, "Well, there is legislation here which says that this level is dangerous, or guidelines which indicate that this level is dangerous.

So, what I am saying is, we need guidelines not only to apply to the public water supply, but also to the individual homeowner who has a private

well. One thing that we routinely deal with in Rockaway is also potable water certification for the purpose of real estate transfer. We will have a homeowner who wants to sell his home say, "Well, we want to certify that our potable water is safe to drink and meets standards." Now there are two very crucial issues here that should be brought to the attention of this Committee.

ASSEMBLYMAN LESNIAK: This is a local ordinance.

MR. LEVINSON: As far as potable water certification -- it is done routinely. It is a local ordinance in this case.

ASSEMBLYMAN LESNIAK: It is not required by State law?

MR. LEVINSON: No.

ASSEMBLYMAN LESNIAK: As part of the certificate of occupancy process?

MR. LEVINSON: Right.

Well, what will happen is, they will come to the local health department and say, "We want our water tested to certify that it meets all standards." We can certify that an individual meets all the current standards as far as potable water is concerned, but that does not address volatile organics or a synthetic organic problem. So, what we did, in sense putting ourselves in a libelous situation, was decide that, first, health priorities had to be considered. So, what we require now before we do any certification is, we test for volatile organics in addition to what is required currently in the Administrative Code.

ASSEMBLYMAN LESNIAK: So, Ms. Stites not only can't drink the water, she can't sell her home either?

MR. LEVINSON: She can't sell her house. So, we are caught in a Catch 22 situation. We now require that this testing be done before we certify because we don't want a new owner to come under the false impression that the water is safe to drink because it meets current State regulation.

ASSEMBLYMAN LESNIAK: Does anyone else in the area have a similar problem to that of Ms. Stites?

MR. LEVINSON: We have a whole area in the northern end of the township where we have, I would say, about fifty families that have varying degrees of contamination.

ASSEMBLYMAN LESNIAK: Are those individual wells?

MR. LEVINSON: Yes, they are. And, we had a study done by Gary & Miller, well known hydrogeologists in the area -- the township. We spend a good bit of money to try and determine to what extent there was a problem, what contaminants were involved, and what potential sources might be continuing the problem up in that area so that we could terminate it. And, obviously, even if there were continuing sources that were terminated, the effects in the groundwater would persist for a period of time because of groundwater movement -- the long-term problems of groundwater movement, and the fact that with groundwater you are not going to have the volatization that you will see in surface water, where you are allowing these volatile organics to volatize and be liberated from the water. Again, in groundwater it is magnified by the fact that the volatile organics, or the synthetic organics, do not have the opportunity to escape from the water.

ASSEMBLYMAN LESNIAK: How are these people getting their water?

MR. LEVINSON: Well, this is why we established the--

ASSEMBLYMAN LESNIAK: They are all going down to the fire house?

MR. LEVINSON: Yes. This is why we established the filter program. We have an on-going problem in the northern end of the township, and we have had several meetings in the northern end of the township to discuss the pollution problem. In fact, we also have one scheduled tonight. Part of our program now is that if individuals in the northern end of the township, or anyplace in the township where there is a private well, have a concern about testing the water, we will process the testing through our Department. They initially pay the first fee, and they also get the benefit of the reduction in cost because we go out to bid on these contracts.

If the first test indicates that there is a problem in the water, or something that should require followup, the Health Department will assume the testing beyond the first test. Again, this is at the township's expense.

In addition to that, if the levels-- We go back to the Federal register because there were studies done by the Federal agencies, insofar as potable water is concerned. For example, they give you guidelines that you have to work -- the snarl levels, the MCL's maximum contaminant levels, etc. -- which we will try to interpret for the individual who may be involved in that type situation. But, again, the local level person has to deal with this and try to explain what this actually means -- because it is so technical, it becomes very difficult. To the layman what this really means, for example is: "All I want to know is the bottom line." And, obviously, what it boils down to is: "Am I going to get sick or am I not going to get sick," which are questions we can't answer.

One key point I would like to make here is simply that we reviewed with our attorney what the consequences were of the responsibility we were assuming by requiring the volitile organic testing, even though it is not required by law, and he said: "Yes, you are putting yourself in a libelous situation because you are not required to do this testing. Therefore, if the property is not sold as a result of the testing, suit can be brought." We are willing to take that risk for the health of the public. But, I think the legislation should deal with this.

ASSEMBLYMAN LESNIAK: You want me to put us in a libelous situation?

MR. LEVINSON: Yes. I would prefer that this type situation would permit the local person to say: "Well, yes, we have documenation of a problem in this area, and because of the problem in this area, we are justified in requiring that this test be done." Because we will continue to do it, regardless of whether it is libelous or not. But, nonetheless, these are the practical problems that we encounter.

ASSEMBLYMAN LESNIAK: Let me give you my legal opinion, because that is what I do on a part-time basis. As long as we are not acting in an arbitrary and capricious manner, then whatever we do is not subject to a suit because of that. I think that we certainly have a sufficient data background supplied so that it is reasonable to require certain testing of contamination. So, I think we would be, and are, on good grounds in doing that.

MR. LEVINSON: Okay. Well, I appreciate that. There are a couple of other points that I think should into the record. There was a study recently done, a study that was conducted by the DEP and also Rutgers University regarding a survey of potable wells -- ground water wells.

MR. LEVINSON: Sixteen percent?

MR. LEVINSON: Yes. Have you seen that study? Would you like me to just highlight some sessions I thought were important, or would you rather I not go into that?

ASSEMBLYMAN LESNIAK: We are going to enter that study into the record. I don't think it is necessary.

MR. LEVINSON: Okay, fine. I think that, again, what it boils down to, for example, is that the bottom line of this whole study is simply what we have on the books now, as far as these interim primary drinking water regulations are concerned -- things, for example, such as Arsenic, Barium, Cadmium, etc., and compounds or elements, or metals, with the exception of the organics which include the insecticides, with the exception of the Trihalomethanes. These for the most part are the types of problems that don't address the Trichlorethylenes, the Carbon Tetrachloride, the Chloroforms, Propychloroetylenes -- the industrial solvents which we are now finding in our public water supplies at an alarmingly increasing frequency. I think that the problems we have in this area, which I am sure have been documented by previous speakers, are real problems that, again, should also pertain to the individual private well. So, I am asking again that when legislation is being considered, that we consider also the private well situation and enable the local enforcement people to respond with some type of legislation which they can stand behind.

So, I realize that the DEP cannot enforce, uniformly throughout the state, action on private wells that may have contamination problems, but local people have to, and unless we have legislation that enables to do it on firm ground, it puts us in a very difficult situation. So, I am asking that that be addressed in whatever legislation is developed.

ASSEMBLYMAN LESNIAK: We'll give you that legislation. Thank you.

MR. LEVINSON: Thank you.

ASSEMBLYMAN LESNIAK: Steve, by the way, if you could, think about some recommendations as to how we can respond to that particular situation, because it is difficult in terms of what to do and how much mandatory requirements the State should enact in that area and how much we should give to the local authorities in terms of using their judgment.

MR. LEVINSON: I have been talking to some state people about that, and I realize that because of the extensive problems throughout the State with public water supplies -- obviously, they have to prioritize their activities because of the extent of the problems throughout the State -- they are willing, and probably out of necessity have to depend on the local people to respond to these problems. I think that some further discussion between the locals and the State as to how we can interact would be the best way of dealing with that.

ASSEMBLYMAN LESNIAK: Thank you. Lorraine Ryan. Lorraine, where do you live?

L O R R A I N E R Y A N: I live in Lake Telemark.

ASSEMBLYMAN LESNIAK: And you have a private well?

MS. RYAN: I have a private well which is contaminated. I have two small children, one of which was here earlier. My concern is, of course, for their health. Both my boys were born in that house. I have no idea how long my well has been contaminated. We moved to Rockaway Township from Hasbrouck Heights, where I had sewers and city water.

ASSEMBLYMAN LESNIAK: When did you move into Rockaway Township?

MS. RYAN: Eight years ago, and I do love the township.

ASSEMBLYMAN LESNIAK: And there wasn't a requirement at that time for a potable water test?

MS. RYAN: No. One of the reasons for moving here was clean air, open space, and clean water. And, lo and behold, a year ago I found out that my water was contaminated, and I cried.

ASSEMBLYMAN LESNIAK: How did you find out your water was contaminated?

MS. RYAN: I had my well tested because our local newspaper was talking about a certain arsenal polluting its streams.

ASSEMBLYMAN LESNIAK: You did it on your own?

MS. RYAN: Yes, out of fear, thinking: "Gee, maybe we are down-hill from the arsenal and it could affect our aquifer.

ASSEMBLYMAN LESNIAK: What were the results of that test?

MS. RYAN: This is the last test. This was taken on October 27, 1981, by our Health Department. This was right before I had a home filter installed, and the results are -- bear with me -- Trifluoromethane, less than 25 parts per billion; 1, 1, Trichlorethylene, 13.9 parts per billion; 1, 1 Dichloroethane, 6.6 parts per billion; 1, 1, 1 Trichloroethane, 158.8 parts per billion; and PCE, 1.98 parts per billion.

ASSEMBLYMAN LESNIAK: That was before the installation of the filtration system?

MS. RYAN: Right before, yes.

ASSEMBLYMAN LESNIAK: And then you installed the filtration system?

MS. RYAN: Yes.

ASSEMBLYMAN LESNIAK: How much did that cost?

MS. RYAN: To date, we haven't paid for it. We are on a trial basis. It will cost $225 to purchase the filter, and when the filters are out, it will be abut $70.

ASSEMBLYMAN LESNIAK: A year?

MS. RYAN: Probably about every two years.

ASSEMBLYMAN LESNIAK: Every two years?

MS. RYAN: Yes. I am a member of the Filtration Committee, so I know a little bit about it.

ASSEMBLYMAN LESNIAK: Have you had your water tested subsequent to this?

MS. RYAN: Yes, once a month the Health Department, along with the company that installed the filter, comes in and they test the influent and the effluent, to make sure -- well the influent to see if it is getting any worse. Okay?

I guess what I really want to say is, I think that our local Health Department, or the local towns, need help from the State or even the Federal government to help find those people, corporations, companies--

ASSEMBLYMAN LESNIAK: I don't think we are going to get much help from the Federal government these days.

MS. RYAN: Well, maybe when Ronnie gets out, or something.

ASSEMBLYMAN LESNIAK: Go ahead, I'm sorry.

MS. RYAN: (continuing)--to help find who is doing this to us. Okay? I am appauled; I am frustrated; I am angry -- you name it -- to think that someone should do this to me, mainly to my children. Who knows how long they were drinking that water? Everytime my son gets sick I wonder, "Is it the water?"

ASSEMBLYMAN LESNIAK: I'm sorry.

MS. RYAN: I feel those people that are doing this should have to pay

for it.

ASSEMBLYMAN LESNIAK: We agree with you.

MS. RYAN: And, the filters only cost $225; it is really no big deal, but I think those that are doing it should pay for our filters and for the carbon, and for whatever else is needed to clean our water.

ASSEMBLYMAN LESNIAK: We do have laws in place to require that they pay for it, and require, in fact, that they pay three times the damage, in terms of money. As you have heard, and as you very well know, the problem is proof that will hold up in court. What we do not have right now are laws that will prevent it from occuring, in terms of some of the major problems, and one of the major problems is underground gasoline storage tanks. This Committee is developing legislation regarding that, but, of course, that is only one part of the problem in terms of prevention.

We have, over the last four years, had a multitude of laws, including criminal sanctions against corporations for unsafe handling of hazardous waste, but that has only been developed over the last few years, while the problem has been going on for decades. So, I think we will continue to have these problems for quite a while. That is why one of the other things we have to do, and what this Committee is working on is the requirement of periodic testing, so that people like yourself will at least know whether your water is safe to drink.

Unfortunately, this is one of the instances that brought the problem to light, and you are in the vanguard. There are people out there, like yourself, that to this day are drinking water that may be just like yours. Thank you, Lorraine, very much.

Diane Nelson. Is Diane still here? (affirmative response) Diane, whre do you live?

D I A N E N E L S O N: I am from Boonton Township.

ASSEMBLYMAN LESNIAK: Boonton is north of here?

MS. NELSON: No, it is south.

ASSEMBLYMAN LESNIAK: It is south of here.

MS. NELSON: Along the Rockaway River. I am a member of the Upper Rockaway River Watershed Association, and I just though I would show you this one photograph. Look into the light and maybe you will get a little better--

ASSEMBLYMAN LESNIAK: No, I can see it. What is that?

MS. NELSON: That is an open pit at the Denville Exxon Gas Station. The tank had been taken out. A member of the Watershed Association saw this procedure going on and went over to look, expecting to find some evidence of gasoline -- but not expecting to find quite as bad a situation as this.

The smell was very, very strong, not indicating gasoline but some other kind of pollution. The soil was absolutely saturated with a variety of contaminants.

I just wanted you to see that picture. I wonder if this had not been reported to the State, and the local sanitarian, whether the new tanks would have gone in, the soil put back, and nobody would have known about it? I rather think it would have been. It is just one more graphic evidence of--

ASSEMBLYMAN LESNIAK: Have you discussed that situation with the local building officials? They were supposed to have a permit, and it was supposed to be inspected. What they are doing is subject to local regulations, based on the State BOCA Code.

MS. NELSON: That's a very interesting point. The sanitarian was not aware of the operation or procedure. Whether the township building inspector knew about it or not, I do not know.

The Environmental Commission Chairman in the township, after the pit was pumped many times, took many samples up to a laboratory for analysis and found the water highly contaminated with many different types of organics -- volatile organics. It is a little unusual that the newspaper reported in the very beginning that the company's analysis didn't show very much pollution.

The subject today may not be specifically addressing the underground storage tanks, but certainly, I think, after our last--

ASSEMBLYMAN LESNIAK: We have an open forum regarding any type of contamination. As I said, we are drafting legislation regarding that at this very moment, and anything that you could add to help us would be appreciated.

MS. NELSON: Well, I am glad to know about the fact that the building inspector was required to inspect that. Maybe he had. Maybe he didn't understand that this was a problem. I think there is a great deal of need for education, not just the general public but our local officials too.

ASSEMBLYMAN LESNIAK: Well, one of the things we intend to require is a notice of any leaks, or any potential leaks, to be enforced not only by the gas station owner, but the distributor of the products, so that they will be liable for very serious penalties if they do not notify the local health authorities, the building department, and the State DEP.

MS. NELSON: In this partiuclar instance, according to the newspaper articles, the gasoline and other products that were leaching into the groundwater were the result of some tanks that had been installed back in the '30's, and were long forgotten. And, the tanks that were being removed were newer tanks. So, in other words, those older tanks were underneath the newer tanks that maybe were put in in the '50's. And, Exxon apparently is going around replacing many of these tanks with fiberglass.

ASSEMBLYMAN LESNIAK: They are replacing them, but there is no requirement at the present time regarding the replacement, in terms of what they replace with and how they are replaced. That is another issue that we will be addressing.

MS. NELSON: I just wanted to make a comment on Dr. Papel's conclusion that treatment isn't the only answer; prevention of pollution should be the ultimate goal. I wholeheartedly agree with that.

As a member of the Boonton Township environmental area, I have been assigned as the township's community development representative for many years. Back in 1978, we received a small grant under the Community Development Program for Water Resource Study. We were very interested in making this a regional study in which our groundwater was delineated and a lot of the concerns that are now surfacing today were brought to our attention at that time. This study was done by Gerhety and Miller also.

Since then, we have areas of concern in our township also. Just last night, I presented a proposal to the new Community Development Program for 1982 -- this is a program that is under the auspices of Morris County -- for a small grant to enable our township to test individual wells, wells that would be in areas where there would be low and moderate income people who can't easily afford these expensive tests. There is a great deal of concern on the part of our residents also, because there have been isolated areas of contamination that are severe enough to cause a great deal of concern. And, also, our neighboring municipalities have found that there is widespread contamination among private wells.

I want to bring out another point: Back in 1979, the State proposed rules for implementing the New Jersey Safe Drinking Water Act. At that time, I submitted comments -- in April, 1979 -- suggesting that we amend these rules to include protection of groundwater sources -- that the fifty foot, so-called "wellhead protection" was inadequate in a non-confined acquifer. At that time, the Bureau of Geology was stressing five hundred feet and even one thousand feet, and I brought this to the Water Supply and Flood Plain Management's attention. One thousand feet in an unconfined acquifer is very minimal. We have a very sandy soil here, gravel acquifers for the most part, unconfined where the contamination from the immediate source of the water -- that is, the wellhead zone -- is easily drawn in if it is there. And, if you went around and looked at the various well-heads in this area, you would find quite a variety.

In the Boonton wells there is a good area of open space along the Rockaway River. In Denville, you will find one in the municipal public works garage, with an oil tank right next to well number 1; you will find a gasoline pump just a little bit away. If you go down on Green Pond Road, you will find Rockaway Township wells located next to a manufacturing facility, which most likely doesn't have any discharge. But, what I am saying is, the State does have rules, and the rules are fifty feet, and it makes no difference what kind of an acquifer it is.

I proposed, under Docket 01579-03--

MR. MILLER: Did you put it in the mail, or did you deliver it orally?

MS. NELSON: No, I did not go to a public hearing. I received an acknowledgement from Mr. Wilford.

ASSEMBLYMAN LESNIAK: Let me see the development of rules, pursuant to the New Jersey Safe Waters Act.

MR. MILLER: Could you leave a copy of that with us, see that we get a copy, of maybe leave your copy with us?

MS. NELSON: Sure. Maybe we can run one off here. In any case, I also suggested that there be additional maping requirements on pollution hazards.

I brought out another point. We found a problem. State laws allow sewers to be placed within one hundred feet of a public well. Sewers are rally notorious polluters also, no matter how new they are. You know, you can build a new one today and if the construction procedures weren't perfectly good nor well inspected, that sewer pipe can exfiltrate as well as infiltrate.

So, there are many things that the State could do. There is also a lot that you can be helping out with on the State level with education.

ASSEMBLYMAN LESNIAK: Let me just make one point. Just recently, the Legislature has authority over regulations. We never had that before. We passed an oversight bill, which will enable us to review regulations promulgated by the Department. So, if in the future you want to comment on any proposed regulations, could you also address your comments to our Committee so that we will be appraised of them also?

MS. NELSON: Yes.

ASSEMBLYMAN LESNIAK: That would be very helpful.

MS. NELSON: All right. Fine.

ASSEMBLYMAN LESNIAK: Is that it?

MS. NELSON: Well, I could go on for another hour -- I really could -- but I think I said enough. Thank you.

ASSEMBLYMAN LESNIAK: Thank you very much.

Douglas Johnson.

D O U G L A S J O H N S O N: Mr. Chairman, thank you for the time. I will take five minutes of the hour that the other committee was going to use.

ASSEMBLYMAN LESNIAK: It's good to see that we have an alumnus of Thomas Jefferson High here.

MR. JOHNSON: I will try and weed through my notes here, and not repeat -- maybe just highlight some of the points. I am an architect and planner, but I am here as a resident of Rockaway Township. I live a matter of a block, or blocks, from contaminated people who have filter units on line.

ASSEMBLYMAN LESNIAK: What is your water supply?

MR. JOHNSON: My water supply is a private well also -- the whole Telemark area is private well. The main water distribution in this town stays to the southern end because that is where the cluster of density is.

ASSEMBLYMAN LESNIAK: I presume you have had your water tested.

MR. JOHNSON: I have had my water tested. I was part of the Gerhety and Miller scape-goat list. I proved negative. However, on the plume designation, I am on the outer fringe of that advancing wave.

ASSEMBLYMAN LESNIAK: So you are going to get it soon?

MR. JOHNSON: I very likely might get it. It might be next week. Who knows?

I just wanted to preface my remarks by saying that I am mutation of Elizabeth air, and Rockaway Township water.

The Filtration Committee started out as a committee selected by the Mayor, but found itself in the unique position that governmental agencies haven't been able to define yet -- we ended up being a negotiating entity with a series of manufacturers, a series of manufacturers who made filters, some of which were flim-flams, some of which were marginal devices, and others which were elaborate gizmos that belonged only in laboratories or in exotic restaurant kitchens. Nothing seemed to take care of the private well -- private individual.

The point I want to make is, there are victims. The victims of a municipal water supply can be handled relatively simply, but the victims of a private well supply cannot be handled easily. The problem is not just industry and business creating the pollution. We have neighbors polluting neighbors. Best of friends are polluting best of friends. An active businessman, well respected in town, unknowingly, is causing grief and hardship for tens and hundreds of people. So, it is not just an industry, or sinister individual, or company dumping by the side of the road in the shadow of night. This is, to a large degree, done by an unknowing few, just as industry pollutes on a large scale, but many are doing it thinking, "Because of the quantities, no one will ever know. How can this small quantity be harmful?"

If you clean your paintbrushes out, what do you do? You don't necessarily throw it down the drain. But, even if you do throw it down the drain, if there is a septic system, it is making its way into it. Whatever those things are that are in your house and that are the product of modern chemistry, they are making their way into the water -- the garden weed killers, and the list goes on and on, and we are quite familiar with it.

What we had to do -- our committee -- was to come up with a viable solution regarding how to take care of these people that were not on municipal water. Our uphill fight started with the fact that most of these people didn't want to know about the problem they had. Why? It affected real estate. Their home is the largest single investment they ever made, and it is being threatened -- threatened by not having a certificate of occupancy; threatened by being kicked out and the

spector of having to live in a motel; the problem of getting bounced out and our own water system off limits; and going down to a fire house. It is insane.

The Filtration Committee has been pleading with all residents to test their wells. Sometimes the fifty-five dollars is--

ASSEMBLYMAN LESNIAK: Is there still local resistance?

MR. JOHNSON: There is still local resistance, partly from the psychological viewpoint of, "If I don't know, I don't really have a problem."

ASSEMBLYMAN LESNIAK: We have legislators like that, who say their grandfather died at age 98 from eating kielbasa all his life, why all of a sudden, now, are we coming up with all these problems that we have lived with for so many years. So, it is not just the local residents. We have to deal with legislators who have that attitude also.

MR. JOHNSON: I can understand. We have been fortunate in town to have a bunch of progressive individuals who are facing the problem and looking for solutions.

I want to make a point that we are trying to see that the citizens have a choice of action, a choice of action so that if they want a filter, regardless of whatever the snarl levels are set at, if one, as an individual or the provider for the family, wants to have additional filtration, whether it is one-half a PPB, or whether it is one-half a PP "gugleplex", they have that choice. The choice right now is quite limited. The committee is trying to prove that it is feasible to have these point-of-use systems in the private homes. Our mass spec tests for the past five months have shown absolutely positive results.

Steve Levinson referred to the one hundred percent removal, which is absolutely fantastic. We are on top of this, and what we plan to do is make Rockaway Township, or a portion of it, the first filtered district in the nation. We are working with different governmental entities to try and make sure that this type thing is put in place, whereby those who are in affected areas can get the benefit of being taken care of.

What we find is that residents -- some of them -- are taking lightly the possibility of contamination of their own well. Many of them do not have the financial means to either pay for the testing or pay for the device. Many residents are just not fully informed. Some residents think that the contamination question will go away by itself. Most residents are ignoring the possibility of -- what the committee deems is a possibility -- "the worst is yet to come." Some residents feel the disclosure of information about their drinking water will kick them out of their home. Some are not aware of any problem whatsoever.

The psychology of the situation cannot be treated lightly. Homeowners must be reassured that the short and long-term ramifications of contamination are under control, or can be controlled, through their own choice, and this is part of what the filter committee is doing.

The establishment of what I am calling a private well water resource agency -- this filter district entity -- would be something whereby an agency purchases and owns 'x' amount of units to deal with the residents of a particular area. The filtration device would be installed by an easement, or some other arrangement, in a contaminated home, a home which is designated by the local Board of Health as being a necessary user of this device, using the latest snarl levels.

The agency might collect an annual maintenance fee, established to defray any or all costs, to provide both operation and monitoring of such a unit. We have a continuous monitoring of all the units that are now on line in all of the

homes, such as Lorraine's -- the monitoring that Steve Levinson had referred to.

Although the device is installed on private property, I think it might be best if it were owned by the township agency because in dealing with the private wells there is no alternate means for government to provide such filtration protection for the public. It is easier on the municipal level. It is a tough nut when you come to the private, individual home.

The problem is that neighbor "A", be he residential or commercial, is causing neighbor "B" to utilize a unit. In some cases, neighbor "A's" pollution is going to neighbor "B", in addition to his or her self, and neighbor "B's" pollution is going to himself or herself, and back to neighbor "A." There is a cross-pollination effect, which makes ending up by pointing the finger almost futile. Our filtration committee hasn't tried to point fingers; it has tried to come up with workable solutions. We feel that the animal we have in these individual homes is a solution.

ASSEMBLYMAN LESNIAK: About the theory that government ought not to interfere with individuals' private decisions about their lives, and that government's responsibility is toward the public at large? In other words, we ought to protect a home purchaser by a certificate of occupancy requirement. Of course, that protects the public. The purchaser could be anybody. But, if that particular occupant wants to drink water that should have a filtration system on it but doesn't, why should we step in and interfere?

MR. JOHNSON: Good question. The nature of the unit -- this point-of-use unit -- is called a by-pass system, whereby it is merely an extra spigot on the sink in the house. It doesn't have to be used. One could drink water coming right through the tap, if one chose to do so, just as one would take showers with water coming right through the spigot.

ASSEMBLYMAN LESNIAK: But, we are requiring that they install that at a cost.

MR. JOHNSON: There has to be some cost. There has to be some broad base of sharing that. What we are finding is that within a given--

ASSEMBLYMAN LESNIAK: A broad base of sharing it? How would we do that?

MR. JOHNSON: I'm not quite sure. Quite frankly, I am not quite sure. In any given household, if it is a household of five, there might be a three to two vote -- you know, "yes, we want it; no, we don't." These are tough nuts to answer. They are really tough nuts to answer. But, the bottom line is, who is going to be the one who feels guilt ridden or guilt free when fifteen years from now you find the product of the wrong snarl levels? So, there is a certain--

ASSEMBLYMAN LESNIAK: Or ignoring the snarl level.

MR. JOHNSON: That's correct.

I have just three things as a recap. Our filtration committee sees identifying the culprits, educating the careless, and helping the victims as the three prime items. The culprits are either criminal or they are just careless. When they are careless, education has to step in. So, finding the culprits could be the enforcement. The educating of the careless could be through other legislative means. But, helping the victims is an agency assistance kind of thing. And, what we are finding we are up against is the DEP, EPA, and banks -- there is just a certain reticence, there is an ignorance, there is a reluctance there. I am over-generalizing in some cases because we have had fantastic support in our township. But, in general there is a certain unease of the uninformed, and it is making it very difficult for people with problems, such as Mary's. Other people have

filters on line in their house, that want to sell it. The closing gets put off. There is delay and financial hardship -- and on and on.

So, helping of the victims is giving them a course of action, even for those who, while the State and that nation might be haggling over the establishment of snarl levels, still can act to provide for their families.

A filtration device, normally, would cost around five hundred dollars. This is the animal we have on line. The committee, through its negotiations, was able to work a free year -- a free year -- of having this unit on line, with the option of, if one so chose, buying it for about two hundred or two hundred and twenty dollars.

ASSEMBLYMAN LESNIAK: These are cheaper if you have a contract to buy it for a group?

MR. JOHNSON: Well, actually, we conned the company into both cooperating with testing fees and, you know, playing fair ball -- having Rockaway Township as the guina pig.

ASSEMBLYMAN LESNIAK: I don't know if you conned the company. I think they have--

MR. JOHNSON: But, their initial -- as were all the deals--

ASSEMBLYMAN LESNIAK: I'm sure they know what they are doing also. They have a good product and they want--

MR. JOHNSON: But, the fact was, of all the product pushers that came to us - okay? - it worked in the best interest of the people who didn't have the money to have a filter; didn't know what the hell to do; who had the kids that were sick, possibly, from the contamination. This thing was put on line with no charge to them, and it is a (demonstrating) band-aid solution.

ASSEMBLYMAN LESNIAK: Band-aid plastic strip? Oh, band-aid solution.

MR. JOHNSON: It is a band-aid solution. We really are just buying time. So, all the other pointing fingers at the sources has to go on. All I am saying is, do anything you can to encourage -- to allow to happen -- point-of-use filtration to be, when the machinery has proven to be correct -- an item that a family can choose when it feels it is necessary. That is all we are asking. We are finding that these devices are real; they do solve a problem; and, they should be encouraged.

ASSEMBLYMAN LESNIAK: Thank you.

MR. JOHNSON: Thank you. I'll take my band-aids.

ASSEMBLYMAN LESNIAK: Nancy Stoldt.

N A N C Y S T O L D T: I am co-Chairperson of the Rockaway Township Environmental Commission, and we are trying to become more active in our role of safeguarding the environment. We review site plans and environmental impact statements. We have given presentations at the recent landfill hearings, and we have served on the Town's Water Filter Committee and the Gypsy Moth Task Force.

Currently, we are sponsoring the School Environmental Slogan and Poster contest, and we would like to try and involve high school honor students in some type of water survey program.

Now, concerning our water, new problems need new solutions. I have proposed to the sheriff the idea of using animals, namely dogs, to sniff out and detect pollutant chemicals. The approach has been very successful in finding hidden narcotics and in other police work. It is a lot less expensive than chemical analysis. Whatever the dogs detect could later be confirmed by a laboratory.

I would very much appreciate it if you would take an interest in this approach to the problem of chemical pollution, and I will leave you with some literature on that. Thank you.

MR. MILLER: Who else is signed up to speak? I don't have the list, so why don't you just come right up, sir. May we have your name, please?

S T E P H E N S T O L D T: My name is Stephen Stoldt. I am distantly related to the previous speaker.

First, let me thank you for taking the trouble to come up here and, as it were, hear from the troops in trenches as to what has been going on. Like Mr. Johnson and Mrs. Ryan, I was a member of the Filtration Committee. If you are going to be around at 8:00 tonight, I invite you to come to the meeting that I have just given you notice of. It is about five miles off of Route 80, and you will hear many people like Mrs. Stites and Mrs. Ryan. You will see what they have been going through, and you will get a better understanding of how we have had to deal with this.

I was especially pleased to hear Chairman Lesniak's comments here, because he has essentially defined the area that I chose to cover today. He has indicated a two-fold approach, and I will quote: "Provide for comprehensive testing, and explore viable solutions for eliminating the menace to the health and safety of New Jersey residents." In other words, to quote again: "Preventive measures must accompany remedial actions."

For the past two and one-half years, I have been involved in many of these remedial actions in our Township, and most of the speakers have dealt with these remedial actions. What I would like to try and talk about today is the preventive measure aspect. I would like to go into a very short summary of our ground water pollution problems, not to retell them, but to bring out a few points and from these points, lead us to consider what provisions of a law, if it had been on the books at that time, might have had some beneficial effect in either preventing it, or minimizing it, or detecting it, or allowing it to be treated.

Now, I am speaking from a 20-20 hindsight, obviously. I can't help that. I don't think anything I say today could help Rockaway Township. We have been through it all. Maybe I shouldn't say that; something will happen tomorrow to change that. However, as I go through this -- through a short history and then suggestions based on the history -- I hope you gentlemen also would be thinking what provisions you might want to incorporate into a law or into bills that would have made this situation come out differently. And, it will happen again somewhere, so I mean provisions that will make it come out differently when it happens again. It is after the fact for us; maybe it can be before the fact for others. This, again, is in keeping with the preventive measures accompanying the remedial actions.

A short history: Late in 1979, we first detected the degreasing solvent, Trichlorethylene, or TCE, in the Rockaway Township municipal wells, which serve the south end of the Township. We don't know how long before that we had been drinking it. That was our first testing, as you have heard.

We sank test wells. We traced the contaminant plume eastward. The municipal wells are represented by the hexagon on the map. More is up here. (indicating) We detected and traced the contaminant coming from a general eastward direction, and it is about one-quarter mile to the Township's border. We traced it across the border.

Now, if you look at the map, these arrows represent surface flow water.

There is a brook running from the north to the south, and one coming from the west to the east, both close to the well field. This tells us, very simply, that the contaminant coming from the eastern border is going against the natural flow of surface water.

Now, you have a few companies named. I am going to refer to them as "a's" and "b's" at this point; I don't want to get myself in any more trouble than I am in. At the moment, this is a former site of suspected company "a". They operated on this site until 1967, or so. They used these chemicals -- degreasing chemicals. They did not make it; they were just users of it. The evidence is that it did spill onto the ground during the degreasing operations. They closed in 1967 and moved from the area. There is now another owner and occupant of the property.

ASSEMBLYMAN LESNIAK: If I can interrupt you, you pointed out something that we are working on. We are working on legislation that will require a certificate of removal , if you will --whatever you want to call it -- that will require companies that deal with any hazardous materials, before they transfer their assets, to have an inspection by DEP and a cleanup and removal program will be instituted.

MR. STOLDT: You have anticipated me.

ASSEMBLYMAN LESNIAK: Was that going to be your recommendation?

MR. STOLDT: That was going to be one of my recommendations, yes. As of now, instead of a suggestion, you may consider it an endorsement.

MR. MILLER: That may have been the shortest period of time between a suggestion and introduction, because in probably less than twenty-four hours--

ASSEMBLYMAN LESNIAK: We are going to introduce the bill.

MR. STOLDT: Thank you. That's not the end.

The second set of contaminants in the municipal well was, in October 1980, the gasoline components.

ASSEMBLYMAN LESNIAK: Excuse me.

MR. STOLDT: Yes, sir?

ASSEMBLYMAN LESNIAK: We may be coming back on that legislation to get your support. We probably will need it, because I suspect there will be many cries, groans, and moans from the industry people.

MR. STOLDT: You have me in a bit of a dilemma there; I am employed by the chemical industry.

ASSEMBLYMAN LESNIAK: But the big ones -- I don't know who your employer is, but the major ones tell me, and represent to me -- and I have reason to believe them -- that they are the responsible people and they will support responsible type legislation.

MR. STOLDT: I hope so.

ASSEMBLYMAN LESNIAK: I won't report you to them.

MR. STOLDT: Thank you. Anyway, the contaminant plume from the gasoline station was traced as coming from the south -- about a quarter mile also -- right about there (indicating) at the intersection of the interstate and the main road.

Again, as you can see, this comes against the natural surface flow, and as I said, this is company "b's" gas station.

ASSEMBLYMAN LESNIAK: That's Shell.

MR. STOLDT: I didn't say that.

ASSEMBLYMAN LESNIAK: I did.

MR. STOLDT: The second zone of the ground water pollution that you

have heard an awful lot about is the Lake Telemark area, where there are private individual wells. This is in the northern end. The community is just about in this area (indicating) for your reference. The evidence again is that one of the sources is outside of the community -- or one of the suspected sources. The chemical is the same degreasing solvent. The site was occupied by the same occupants as the one contaminating the municipal well field, suspected company "a", and it was used for the same purpose, degreasing. As I said, they left in 1967. Company "c" now owns part of that site and occupies it. They are trying to rent part of it company "d", so in a case like this, we have a real "who done it?" Three companies have a stake in proving that the area is safe, or in treating the groundwater pollution in that area, which complicates the local government action quite heavily.

Now, what I wanted to bring out is to try and figure out how any laws could have helped us, if they had existed at the time -- anywhere from two to twenty years ago? What provisions can help others before the fact, considering our case now?

I was going to say that you may have some of these in mind; obviously you do. If you have them in mind, consider this as an endorsement. If not, consider this a suggestion.

The first lesson we had was, pollutants do not respect political boundaries. You have seen that with company "a". We have had quite a bit of difficulty. In fact, we have been stimied in the case of suspect company "a" by our inability to drill test wells wherever we wanted to. Sometimes the authority has been multiple; sometimes it has been non-existent -- it also has been hazy. We would suggest that any law you put through define a State jurisdiction. This should include a strong and well-defined authority for the enforcement agency, which I assume would be DEP in this case, to step in, take charge, and enforce these laws.

In our case, if this well-defined authority had occurred, we could have had a very rapid resolution as to whether company "a" was responsible or not as the source of this degreasing solvent. And, it should help resolve any future cases where there is a similar, multi-jurisdictional problem.

I would suggest that New Jersey also generate, within the framework of your legislation, a priority pollutants list. The EPA has one. Their list could serve as a model, or I would prefer you use it as a starting point. The New Jersey list should then add whatever chemicals are known to be applicable in statewide or local areas peculiar to New Jersey or its localities, rather than in the national setting. I would suggest this not be restricted to pure chemical substances, such as the EPA list is. I suggest they include other articles of commerce which contain these chemicals in appreciable fractions or concentrations.

In our case, degreasing solvents and petroleum products are two applicable categories, and I am sure there are many others. And, further, this list should be updated periodically by mandate.

ASSEMBLYMAN LESNIAK: What do you want us to do with that list?

MR. STOLDT: Excuse me?

ASSEMBLYMAN LESNIAK: What do you want us to do with that list?

MR. STOLDT: This should be list of materials to be tested for, which I am getting to in a moment.

ASSEMBLYMAN LESNIAK: Okay.

MR. STOLDT: It would be the State's equivalent, and probably an improvement

over the EPA's priority pollutant list.

ASSEMBLYMAN LESNIAK: Like Methylene Chloride, Methyl-Chloride, Methyl Bromide, Chloroform, etc.

MR. STOLDT: Yes. I have a copy of the Federal priority pollutant list somewhere in here.

MR. MILLER: The Assemblyman is reading from a copy of a bill that he has introduced.

ASSEMBLYMAN LESNIAK: We will get this to you.

MR. STOLDT: Okay. Again, it is an endorsement from someone who has been through it.

ASSEMBLYMAN LESNIAK: I am sure this isn't complete, by the way.

MR. STOLDT: I'd also suggest -- and here we are getting into the preventative measures -- that rather than putting the burden on the well users -- the drinking wells, the municipal wells, and the individual wells, which is where this stuff comes up, and I heartedly endorse that there should be testing of these wells, by the way -- that the test wells be put where the stuff goes down as well. I would suggest that the requirements for test wells be around operating sites, or groupes of sites, where chemicals on this list, or a similar list, are handled.

In our case, if there had been test wells around company A's site -- again, this is out of our jurisdiction; this would have had to be a State requirement -- but if these test wells had been in existence and monitored, the operator and the township would have been alerted long before the pollutants ever got near our potable water supply. Any cleanup action could have been initiated at its source, whether by soil removal or by interceptor wells, or whatever other technology was used, and the township wells would not have become contaminated in the first place.

If there are multiple users of a site, such as an industrial park, there would have to be some regulation as to how far apart the wells could be. This would probably be best worked out by the hydrogeologist in DEP from site surveys and soil considerations.

Now, one thing we saw in our case with the municipal wells is that both sets of contaminants approached from the "downstream" direction, contrary to what topography or what surface water flow would indicate as being likely. And, pumping large volumes of water up a well does have this effect. It makes the underground water flow contrary to surface water. So, if we are going to have requirements for test wells around the site, they should be all around that site -- all around the relevant property, not just what the surface considerations or the operator's discretion would indicate to be a downstream direction.

Again, if this had existed when suspect company "A" was operating, or even recently with the company "B" gas station, it would have made a difference as to whether we had detected the contaminants that were approaching our wells. If they had simply drilled in a downstream direction, we never would have known anything was coming in, since the subsurface flow would have been in that direction, under their site and then toward us. So, complete coverage around the parameter is important if this type of program is to be instituted.

I would also recommend that not only operations but storage systems are monitored and prevented from contaminating the ground water. For surface storage it could be relatively simple, where there are pads, dikes, spill-routing, and cleanup procedures -- and these are obvious because everything is visible.

ASSEMBLYMAN LESNIAK: Have you ever seen chemicals controlled before

they were cleaned up? Have you seen pictures of that? Sixty thousand drums were allowed to be stacked.

MR. STOLDT: I have seen some of the films of the fiasco that went on down there. With sub-surface storage facilities you have another story, and here a test well program, I would say, would be required simply because it is the only way we could get to know what is going on underground. Now, this is not in itself sufficient. There should be other requirements imposed, hopefully to prevent in the first place any pollution that the test well is designed to detect. This should include specification of materials at construction, in accordance with sound engineering practices, taking into account the chemical natures of the stored liquids; mechanical stresses that the load, or surface operations, would generate on the storage; the nature of the soil or the backfill material around a sub-surface tank; corrosion data; and other relevant factors. There are standards and guidelines set by professional organizations. Two that come to mind are the American Society of Mechanical Engineers, and the National Association of Corrosion Engineers. These should be consulted and utilized as well. The NACE specifically has a set of recommendations for protecting sub-surface storage facility fuels. I am sure they will make them available.

Now, these factors apply while a facility is operating, and this is what I was getting to, and what you spoke of earlier.

Our experience certainly has to lend some credence to your idea that there must be maintained an accountability when an owner or operator leaves, shuts down, sells, or rents to another. This is a must. So far suspect company "A" has managed to disclaim responsibility for the municipal or the private wells, and it has been very difficult to get evidence on our own at this late date.

Included in a better defined EPA authority should be the practice of requiring cleanup of a site when an operator wishes to leave or shut down; an examination of on-site and off-site test wells; and the ability to force the operator to pay for all of this.

I was going to suggest -- apparently, again, you have done so -- permanent requirements for shut-down and departure similar to ones for occupany and start-up. Power to attach the assets to finance the clean-up should be included if necessary. In our case, if there had been mandatory test wells and clean-up at the expense of the departing suspect, our wells' contamination by degreasers would have been prevented.

If there were contamination detected on the way to the wells, and we knew it was coming, we would have known about it in time to install purification devices before the pollution reached the wells, and we would have been able to protect the health of the citizens. Remember, we began testing in 1979. We don't know how long before that it was coming in.

ASSEMBLYMAN LESNIAK: And, there was no requirement that you test?

MR. STOLDT: That's correct.

ASSEMBLYMAN LESNIAK: It was just because it happened?

MR. STOLDT: That is correct. Our health officer at the time -- I guess Mayor Bishop mentioned this -- took it upon himself to do so. Again, I recommend, as others have done, a mandatory testing, at regular intervals, of the municipal and potable water wells, to get off the subject for a moment.

In addition to this, if there were water purification required, the cost for the devices could have been extracted directly from the departing suspects under these procedures before they could ever leave, or they would have their

assets attached, rather than having the citizens bear the cost.

A similar case was suspect "A", selling part of his northern end site to owner-operator "C", who in turn wants to rent part of his site to "D", and this could have been handled similarly. "A" would have had to clean up, or be checked out by DEP before he could sell, and "C" could buy. "A" would have had to pay for the cleanup. Similarly, "C" trying to rent to "D", "C" would have to clean up and pay for any pollution or damages traceable to him before he would even be allowed to rent part of his property to the new company.

Right now it is a case of "who done it?" We are dealing with it now. It could be totally eliminated with this provision in the law. Innocent companies would be cleared. Guilty ones would be forced to pay for the clean-up and damage, if there were a monitoring and enforcement authority created.

Those who comply with the sound practices would have small and widely-distributed cost. Compliance would be encouraged by the likelihood of swift traceability and accountability, rather than, "I can get away with it and get over the border before they catch me."

The extensive cost for clean-up and damages would be quickly assessed to the contaminators, and only to the contaminators.

In summary, let me say that we have lived with these problems for a few years, and we may be too close to the forest to see all the trees here. I would encourage you to consider everything relating to the history of our groundwater problems, and perhaps you could suggest an additional or different way of approaching, legally, something that would have changed the course of our problem, which would encourage you to think creatively along those lines: what other legislative action would have avoided, minimized, detected, treated, or alleviated these problems? What other ways can costs be fairly assigned? I would encourage you to include in your bills any answers you can come up with on that.

This may not -- it probably won't -- do anything for Rockaway Township or the other municipalities that have suffered through this. I think, however, that it would be a shame not to allow others to gain some benefit from our experiences. Thank you.

ASSEMBLYMAN LESNIAK: Thank you.

MR. MILLER: Mr. Stoldt, are you going to be leaving?

MR. STOLDT: No, sir. I am staying.

ASSEMBLYMAN LESNIAK: Charles Lenchitz.

C H A R L E S L E N C H I T Z: My name is Charles Lenchitz. I am the other half of the chairmanship of the Rockaway Township Environmental Commission. I won't take very long. I just want to emphasize some of the things that frighten me. I may have to repeat some of the topics that were discussed here -- for example, the organic halogen compounds that we are finding in our water supply -- trichlorethylene -- and I would like to emphasize the fact that organic halogen compounds -- and you had some chemistry -- are very inert and they can hang around for many, many years. In other words, they are not affected by other natural phenomenon in nature. So, it is kind of scarey, especially when Dr. Papel described for you how these organic halogen compounds adhere to the tissues of the liver. In view of the fact that they are inert, they are also cumulative, so children that are brought up being exposed to this kind of compound -- it is really a scarey phenomenon, you have to admit that.

Another things that scares me is the fact that the standards we use are not very well set. You know, we inject a few mice--

ASSEMBLYMAN LESNIAK: We may not even have any standards.

MR. LENCHITZ: I beg your pardon?

ASSEMBLYMAN LESNIAK: We may not even have any standards in many cases.

MR. LENCHITZ: In a lot of instances we do not have any standards, that's right. Our standards are now parts per billion. This is based on injecting mice or other laboratory animals with chemicals, and not enough work has been done to try and follow through on these studies. That is really an area that has been sadly neglected.

The fact is, for example, they extrapolate-- One in one hundred thousand will be affected. But, you know, think about the short story by Shirly Jackson on the Lottery, where they take the whole populous once a year and they pick out a name, and that one person gets stoned. So, who is going to be stoned next year?

ASSEMBLYMAN LESNIAK: Remember that, Doug? You remember reading that.

MR. LENCHITZ: Another thing that scares me is--

ASSEMBLYMAN LESNIAK: Mrs. Reiley, the English teacher.

MR. LENCHITZ: (continuing) --the fact that wells in our area, Lake Telemark-- You have heard about that, where we put carbon filters in; these are uninhabited areas. The population density is very slight. Yet, we are finding contaminants in the water supplies in these areas. Now, where are these contaminants coming from? I think that if every community analyzed their water the way we did, with gas chromatography and mass spec--

ASSEMBLYMAN LESNIAK: That's what we are going to require. It is frightening, isn't it?

MR. LENCHITZ: (continuing) --you will find that there are many, many more areas that have these contaminants. That is why the legislation is quite important.

Another thing that is very scary is the fact that the State of New Jersey has a population density of one thousand people per square mile.

ASSEMBLYMAN LESNIAK: The largest in the nation.

MR. LENCHITZ: It is larger than Japan. Japan is only eight hundred and five, or eight hundred and six per square mile. So, there are a lot of things we have to do here to protect ourselves. We just can't be indiscriminate insofar as open area is concerned, and building.

ASSEMBLYMAN LESNIAK: Yet, when we try to do something to regulate that -- like we did in the Pinelands -- we get all kinds of complaints from developers, real estate people, and bankers.

MR. LENCHITZ: Of course. Right, everybody has to make a living, and that comes first, I guess.

ASSEMBLYMAN LESNIAK: You have to live first.

MR. LENCHITZ: Right. Another thing, while we are having all these problems with the contaminants, you can go-- Before we even put in the carbon filters, you can go over to the local paint store and buy a can of trichloroethylene, right on the shelf -- trichloroethylene. It is written right on the container. It is legal to buy it and use it. And what happens to it?

ASSEMBLYMAN LESNIAK: What would people use that for?

MR. LENCHITZ: Well, it is a degreaser.

ASSEMBLYMAN LESNIAK: It would degrease?

MR. LENCHITZ: You know, if there is grease on anything, it will just wipe it off.

ASSEMBLYMAN LESNIAK: To clean your stove?

MR. LENCHITZ: Stoves, and they also use it in their septic tanks. It has to find its way into our water supply, there is no getting away from it.

Another thing that is really scary right now is they want to put a landfill in our area. That is ridiculous.

ASSEMBLYMAN LESNIAK: What would that be?

MR. LENCHITZ: We are over the Wisconsin stratified drift aquifer, and this landfill is within the area of that aquifer. In fact, I think the legislation should extend not only to landfills, but also to industries that want to locate on top of an aquifer. These aquifers are known and they are mapped.

ASSEMBLYMAN LESNIAK: We have legislation regarding hazardous waste disposal facilities in terms of critera for their location. I don't believe we have developed the same for solid waste disposal facilities or industries.

MR. LENCHITZ: But aquifers are our water supply -- our underground water supply. If you let landfill occur there and if you let industry come in on these aquifers, you are just cutting your own throats. I think a very important thing is enforcement. Right now, we have an industry that has drums that are leaking, leaking into the ground. We reported it to the DEP and nothing can be done. It is just like a man with a gun; you can't put him in jail or bring him into court, and in the meantime he can kill somebody.

ASSEMBLYMAN LESNIAK: Well, something can be done. I don't quite understand. The laws are in place. Why isn't anything being done?

MR. LENCHITZ: I don't know. You have to take them into court.

ASSEMBLYMAN LESNIAK: Right.

MR. LENCHITZ: All right, now in the meantime the drums are leaking. How long does it take to get a case into court? That's the problem.

ASSEMBLYMAN LESNIAK: Well, in order to get an injunction, it doesn't take long at all.

MR. LENCHITZ: We have that problem right now. I don't want to mention names.

ASSEMBLYMAN LESNIAK: I might point out that under the law your local health officer has authority to enforce the Solid Waste Management Act, which includes hazardous waste.

MR. LENCHITZ: Right.

ASSEMBLYMAN LESNIAK: So, the laws are there.

MR. LENCHITZ: We still can't do anything about it.

ASSEMBLYMAN LESNIAK: I know DEP is overloaded.

MR. LENCHITZ: Sure.

ASSEMBLYMAN LESNIAK: It is popping up all over the place.

MR. MILLER: At the last hearing we got a volume this thick (indicating) of reported cases of leaking tanks -- hundreds of incidents.

ASSEMBLYMAN LESNIAK: Those are underground tanks you are talking about?

MR. LENCHITZ: These are above ground -- drums. That is all I wanted to say. You know, there are things that can be done, and should be done, and I think the law should--

ASSEMBLYMAN LESNIAK: Many of the laws are in place. The enforcement of the law is the most important thing. Thank you.

MR. LENCHITZ: Thank you. Mr. Gelles.

W I L L I A M G E L L E S: My name is William Gelles. I have to apologize for my voice. Unfortunately, the flu has gotten me, as it has a lot of other people.

I am Vice President of Leak-X Corporation. We are manufacturers of constant monitoring leak protection systems.

ASSEMBLYMAN LESNIAK: Didn't we hear you the other day?

MR. GELLES: I don't believe so.

ASSEMBLYMAN LESNIAK: Do you have a card?

MR. GELLES: Yes, I do. Basically, what I would like to say is that the technology exists today to warn people at the beginning of all the horror stories that I have heard today. This technology is available. It has been up and running for many years, and it has only been put in places where local governments have had the foresight to enforce legislation.

With me I have four pieces of legislation which I would like to give to the Committee for consideration. These systems have been retrofit to existing equipment or installed in new equipment locations. And, constantly, today, the service station, the bulk plant, and the manufacturing facility have been named as potential places where pollution can begin and go on undetected. With this type of technology, it has been proven by the Underwriters' Laboratory testing that if a leak occurred, it could be detected in less than twenty-four hours, and with a loss of less than ten gallons, particularly in the case of gasoline. It is obvious that if you can detect a leak of a ten-gallon magnitude at its inception, then you will be in a position to repair the leak, or take whatever steps are necessary, as opposed to going through all of the clean-ups and costs that have been outlined today.

In your testimony, in rebuttal to some of the points make, you said you were considering a testing ordinance for the State. It is our contention--

ASSEMBLYMAN LESNIAK: Did I say that?

MR. GELLES: Testing of gasoline tanks.

ASSEMBLYMAN LESNIAK: For leaks.

MR. GELLES: You are considering a State testing ordinance, where it would be required to test gasoline tanks, let's say, every year, or every five years.

ASSEMBLYMAN LESNIAK: We were talking about those that would fall into a suspect category -- those that have been in the ground beyond a certain period of time, where it would be more likely than not that they may or may not be leaking.

MR. GELLES: But, what is the criteria? Tank manufacturers do not guarantee their tanks for a day. Installing contractors guarantee their work for a year.

ASSEMBLYMAN LESNIAK: I am told that in terms of the corrosive proof tanks, the warrantees are fifteen and twenty years for fiberglass or catho-protected steel tanks.

MR. GELLES: But, those are the newer ones.

ASSEMBLYMAN LESNIAK: Those are the newer ones. We are not talking about the steel tanks that are in the ground now.

MR. GELLES: But, even the newer ones--

MR. MILLER: Age would be the criteria. In other words, more than ten or twelve years would fall into a "suspect" category.

MR. GELLES: Okay.

ASSEMBLYMAN LESNIAK: By the way, we are only developing the ideas now, many of which were developed on my ski weekend while I was snowed in. I had nothing

better to do. But, we are looking into all aspects of dealing with it, and we are maybe fifty percent complete in terms of drafting concepts. So, we are certainly open to ideas and concepts. Not only that, but once the legislation is drafted, we will then have other meetings where we will be open for amendments.

One of the thoughts we had in mind was in terms of a tank that has been in place -- a non-corrosive steel tank -- that has been in place beyond "X" amount of years, whether we would require removal after a certain period of time and replacement; testing over a certain period of time; or monitoring.

MR. GELLES: The point I am trying to bring out is that whatever period of time you suggest for testing, the test is only conclusive for the time that the test is applied, and then the increment of time between testing is an area that goes unmonitored.

ASSEMBLYMAN LESNIAK: It could happen the next day.

MR. GELLES: Or the next minute. Okay? Because you are putting undue loads on the tank and as the tank gets older--

ASSEMBLYMAN LESNIAK: It may even induce a leak.

MR. GELLES: Yes, that is a possibility. Whereas, with the constant monitoring, it alleviates that problem of, "are we causing a problem by testing?" We are constantly in a testing mode, and if any of the product finds its way to the sensor, it goes into an alarm.

ASSEMBLYMAN LESNIAK: Can you supply us with a cost analysis?

MR. GELLES: Yes, I can. There has been in these towns that you will see,legislation for--

ASSEMBLYMAN LESNIAK: Are these in New Jersey?

MR. GELLES: No. They are New York towns. New York seems to be much more progressive than New Jersey.

ASSEMBLYMAN LESNIAK: Do you have any in California or Florida that we can go out to investigate?

MR. GELLES: California is in the process of drawing up legislation.

ASSEMBLYMAN LESNIAK: I am only kidding.

MR. GELLES: But, very soon -- maybe this week -- the City of Miami is going to adopt a constant monitoring ordinance, as is the City of Rochester.

ASSEMBLYMAN LESNIAK: What places in New York do you have?

MR. GELLES: We have the town of East Chester, the town of Mamaroneck, Scarsdale, and New York City.

ASSEMBLYMAN LESNIAK: New York City?

MR. GELLES: New York City has quasi-legislation as a tradeoff against--

ASSEMBLYMAN LESNIAK: What is quasi-legislation?

MR. GELLES: Well, it gives you a choice. It gives you a choice of using a different type of piping -- a more expensive type of piping, or leak detection systems. Some of the better known companies use leak detection, as opposed to using expensive forged steel fittings for piping

ASSEMBLYMAN LESNIAK: That is prospective.

MR. GELLES: There was a change in the code in 1970, and the mistake was done during the change of the code. A follow-up brought strict adherence to the code so that the cost of installing tanks in New York City, by strict adherence to the code became prohibitive. As a give-back, the Fire Department said, "If you install constant monitoring leak detection, we will go along with this legislation."

ASSEMBLYMAN LESNIAK: But, this is all applied to tanks that are now

installed. Has there been anything in terms of tanks that are already in place?

MR. GELLES: Yes, the Scarsdale and East Chester laws require it for existing tanks that are in the ground. And, those are the ones that I would like to address. Both our company and our competition have been retrofitting existing locations -- installing, both labor and material, in the four to five thousand dollar range. In most cases, the tanks are owned by the oil companies, and the expenditure is capitalized, so that the long-range effect is such that it is no undue hardship to them.

ASSEMBLYMAN LESNIAK: This applies to underground tanks. Do you do it for anything else?

MR. GELLES: Yes, we do it in bulk plants. We do it in major pipelines. And, we do it in petrochemical plants and facilities. Basically, we provide constant monitoring for any type of hydrocarbon or petrochemical that is stored, transported, or dispensed. That is basically the type of material that these people are getting in their wells.

Now, if you follow my line, and you put in constant monitoring, as opposed to testing, you are eliminating the cost of supervisory inspectors going around to witness these tests.

In landfill operations, the gentleman before me suggested that you put monitoring wells around the landfills to make sure that no pollutants go out past the barriers if they are installed, or to its monitoring wells. Again, there is no criteria for the time between observations of the well. Whereas, with constant monitoring leak detection systems installed, there is no need to go there and physically monitor and take samples.

ASSEMBLYMAN LESNIAK: I have a landfill.

MR. GELLES: Okay.

ASSEMBLYMAN LESNIAK: We could put the system in?

MR. GELLES: You could put any one of these systems in.

ASSEMBLYMAN LESNIAK: And what would that tell us?

MR. GELLES: It would tell you that any pollutants, hydrocarbon in nature, would -- if they go down to the aquifer -- start to come out of that specified area and start to pass by a certain point and put someone else in danger. The idea, again, is to stop the need for personnel from going out and doing these inspections.

ASSEMBLYMAN LESNIAK: There is no requirement now?

MR. GELLES: There is no requirement for that. There is no requirement for observation wells. There is no national code that is really adhered to in the United States, as for testing, as for installation, or anything to do with petroleum or petrochemicals -- pipelines, storage tanks, or dispensing facilities.

ASSEMBLYMAN LESNIAK: Doesn't the BOCA code include that?

MR. GELLES: The one that is usually adhered to, but not necessarily as a rule, is NFPA-30.

ASSEMBLYMAN LESNIAK: Right.

MR. GELLES: Okay? NFPA-30 only really gives guidelines for local inspectors to follow. Many cities and towns write their own codes, and they differ so sharply across the United States that you don't think you are in the same country.

ASSEMBLYMAN LESNIAK: But, in New Jersey we have uniform standards.

MR. GELLES: Not necessarily. That really isn't true. There is a generalization, but it is not true. The only thing that New Jersey has, up to this point, is, on very large storage of over two million gallons there is an Impervious Barrier

Act, that some sort of impervious barrier has to be installed around large bulk storage tanks, built after 1980 -- of which none were built.

NFPA-30 also suggests the application, in suspected leaks, of Kentmore testing -- i.e. petro-type testing -- which is a very sophisticated testing procedure, which determines loss in gallons of hundreths of a gallon per hour. These tests in this area go between three and five hundred dollars a tank.

Again, as we stated before, testing is such that it is only good for the time that the test is on. If you take a normal service station that has three or four tanks and if you use the highest number of five hundred dollars a tank to do the testing, you spend some two to three thousand dollars to do the testing, and if you relate that to the cost of installing a constant monitoring leak detection system in the five thousand dollar range -- and that is a high number -- the advantages become obvious. It is not a one-time test; it is working for you twenty-four hours a day, three hundred and sixty-five days a year.

ASSEMBLYMAN LESNIAK: We are going to ask the department to give us their position regarding constant monitoring and the installation of that.

MR. GELLES: Okay.

ASSEMBLYMAN LESNIAK: I would expect that they will have that position ready for us on the 25th. We are having a hearing in Toms River at that time. I am sure you, or another representative of your company, will want to be there.

MR. GELLES: If we can get the location, we definitely will.

MR. MILLER: It is going to be held at the Ocean County Administration Building.

MR. GELLES: I'll write that down. As I said--

ASSEMBLYMAN LESNIAK: Yes, can you please give us your recommendations for the record so that we can look them over in terms of other statutes?

MR. GELLES: Yes. Really, in closing, what I would like to do is to give you copies of the legislation from these far-reaching--

ASSEMBLYMAN LESNIAK: Isn't that what I just said? Yes, you will?

MR. GELLES: Yes, I will.

ASSEMBLYMAN LESNIAK: Thank you.

MR. GELLES: Thank you for your time.

ASSEMBLYMAN LESNIAK: How come you guys always stay to the end? The same thing happened in Trenton. You were the last one to testify, and oftentimes what you have to offer is very interesting.

MR. MILLER: We identify the problem and they come in with the solution.

MR. GELLES: Exactly.

MR. MILLER: If we heard what the solution was first, he could have saved us a lot of time.

MAYOR BISHOP: Would you allow just one quick question, gentlemen?

ASSEMBLYMAN LESNIAK: Yes, sure.

MAYOR BISHOP: You are talking about conductivity or resistivity.

MR. GELLES: We have both.

MAYOR BISHOP: You are talking about both.

MR. GELLES: We are talking about a system that has a degrading cable sensor, or a conductivity sensor.

MAYOR BISHOP: All right. You then translate the differences in cost by the presence of hydrocarbons?

MR. GELLES: Yes.

MAYOR BISHOP: Okay. That's all.

MR. GELLES: Okay. And, it can work in both a dry well or a water well.

MAYOR BISHOP: Yes.

MR. GELLES: And, we have a monitor that gives both audible and visual alarms, as all people in this industry do.

MAYOR BISHOP: And, you would translate that so that people wouldn't confuse it with a burglar alarm, right?

MR. GELLES: Burglar alarms or smoke alarms, exactly.

ASSEMBLYMAN LESNIAK: Do we have any other witnesses? (no response) Mayor, again, thank you very much. It was very worthwhile meeting today. I would expect that we will develop some very substantive legislation as a result of this meeting.

MAYOR BISHOP: We full expect so too. I want to thank you folks for coming, profoundly. I want to thank you for the using the good sense to use this area, because we have the total problem and the total answer here, with the hardware in the Rockaways.

I would like, just briefly, to say -- and so briefly that I am not even going to sit down -- as I said to you earlier, that I think municipalities need a place to go from a litigational sense, other than their own local ordinaces, and other than the Attorney General. I think that one possible answer to that is the method -- the vehicle -- of legislation, which would help the municipalities, if they need litigational help, to perhaps go to the county prosecutors, rather than having to wait the long wait to go to the Attorney General, or rather than having to use their own ordinances, which get down to shooting at tanks with B-B guns.

ASSEMBLYMAN LESNIAK: If I may interrupt you, I think if I am not mistaken, the A.G.'s office is developing that.

MAYOR BISHOP: Very good.

ASSEMBLYMAN LESNIAK: He is going through a training process, training prosecutors for that.

MAYOR BISHOP: Yes. Mr. Rayback, as you know, is the Chairman of the New Jersey State Prosecutors' Association. We have been in contact with him. He has told us that the problems they would have with that are not insurmountable and we would hope that those costs could, somehow, someway, fall out from under cap.

One more thing, just for the record, if you will allow me -- and this is only seven sentences. In the windup of the speech that I delivered to the American Groundwater Association, I said at the request of two folks there who said, "what would you do if you were going to write a primer for this business of meeting the problems that occur in the groundwater municipal systems?" I think maybe the seven things I said back in September might be translated into legislation. I wrote:

"If I were asked to write a primer for the treatment of groundwater pollution of municipal wells, the first principals would include these:

1. Be totally open and forthright with the public.

2. Listen to everybody, among the dross of complaint are the diamonds of wisdom and help.

3. Allow your employees to rise to the challenge.

4. Negotiate, the world is not completely peopled by villains.

5. Work with your experts and vendors; don't just watch."

I would just like to say, parenthetically, that Calgon and Pittsburgh helped us over some terribly rough spots. Lainco,

in the installation of our stripper, helped up over some terribly rough spots also.

"6. Don't rush to blame; rush to solve.

7. Test, test, test, and test."

Gentlemen, again, we extend to you our profoundest thanks for picking us to be the hosts of your meeting. We hope that we have helped you to expand the consideration of this great and far-reaching problem. We hope we have helped you to expand it more nearly to the limits of its impact and its potential answers. Thank you very much.

ASSEMBLYMAN LESNIAK: Thank you. The hearing is adjourned, and will begin all over again, to hear the South Jersey problem, on the 25th of this month. Thank you.

(hearing concluded)