NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION

Grumman Aerospace-Bethpage Facility
Naval Weapons Industrial Reserve Plant
Proposed Groundwater Remedial Action Plan

PUBLIC INFORMATION AND COMMENT MEETING

December 13, 2000
7:00 p.m.

P r e s e n t :

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MARK LOWERY, Regional Citizen Participation Specialist, NYSDEC
STEVEN SCHARF, P.E., Project Manager, NYSDEC
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MR. COWEN: I think we would like to have a goal of being out of here in time to hear what the Vice-President has to say tonight, if possible; I know I'd like to hear it.

Anyway, my name is Ray Cowen, I'm the Regional Director for the New York State Department of Environmental Conservation in Stony Brook, which is Region 1. Region 1 encompasses Nassau and Suffolk County.

The purpose of tonight's meeting is to present and accept comments on the proposed Remedial Action Plan for the groundwater clean-up at the Northrop Grumman facility and the Naval Weapons Industrial Reserve Plant in Bethpage. Tonight you're going to hear some presentations from D.E.C. personnel from Stony Brook and from Albany, as well as from the New York State Health Department in Albany.

Again, you're going to have an opportunity to ask questions of the staff up here, who have been involved in the remediation, after we make some presentations, and then after that you're going to be given an opportunity to make verbal comments on what you've seen here tonight

or what you have read previous to tonight.

At this and hundreds of other sites across the state, we're faced with the task of correcting what I like to refer to as legacy errors, so to speak. This site, as you probably well know, was a national defense site dating back some 50 years ago, and some of the disposal practices and material handling practices that were appropriate at the time resulted in some contamination of our groundwater, and those kinds of practices, of course, are not appropriate today.

Instead of focusing tonight on trying to place blame or point fingers at who might be responsible for this, the responsible parties have, in fact, stepped to the plate and have been extremely receptive in doing investigations necessary and the clean-up necessary, so we would like to focus our attention at this point on how we're going to go forward and what has been done to date at this site.

Again, Northrup Grumman and the United States Navy are the two responsible parties, and they are legally responsible for payment of the

cost of investigation and remediation of the site.

We have with us tonight Mr. John Young, who is the Vice-President and Deputy Business Area Leader for Northrup Grumman, and John has asked to say a few words.

If you want to come forward.

MR. YOUNG: Thank you, Ray.

I, like you, are anxious to get home and hear Mr. Gore give his concession speech tonight, so I will try to be brief.

Good evening to everyone here. As Mr. Cowen said, my name is John Young, I'm the Vice-President and Deputy Business Area Leader for the business that we have here on Long Island, called Airborne Early Warning and Electronic Warfare Systems; it's headquartered here in Bethpage.

I came here this evening to convey and reinforce the message on behalf of the Northrup Grumman Corporation to all of our neighbors and you here tonight. We want you to know that Northrup Grumman is committed to resolve the water condition that exists below our Bethpage

facility and below the limited area to the south of our facility.

Like many of you, I am a Long Islander, I grew up nearby in Levittown; I went to school there, grammar school, junior high school, high school, and I went to college locally here at New York Institute of Technology. I can't attest to being one of the 4.O students, but I enjoyed attending, they're local.

I saw Grumman as I was growing up, I saw them grow, I saw the planes fly overhead, as we all did, and the fact is, as I started my career there, I was fortunate and privileged enough to fly in some of those aircraft myself. I started in Grumman, now Northrup Grumman, over 27 years ago, and I'm still very proud to be a part of that historic company.

I want to emphasize that, like many of your here tonight, I am not an environmental expert. I've learned, for example, that the term "superfund" has nothing to do with the amount of pollution either in the air or in the ground, superfund refers to dollars that are set aside in case a responsible party, such as

Northrup Grumman, can't or won't take responsibility to pay for the clean-up of a given site. Grumman before, and now Northrup Grumman, is a good company, which has and continues to take its responsibility seriously. As I said, I am not an environmental expert, but I do understand that a good company is, by definition, a good neighbor.

That's why I wanted to briefly address you tonight as we consider the long-term solution to address the ground water. I want you to know that Grumman started the remediation process about ten years ago and has spent about 25 million dollars, to date, on that remediation project. That amount, by the way, does not include what the U.S. Navy has also spent on their remediation efforts. But please be assured that we are fully committed until this site and the affected surrounding area comply fully with the standards established by federal, state and local authorities.

So you will understand the extent of our commitment, we have a staff of professional environmental people, some of whom are here this

evening, who are guiding us through the remediation program. Some of these people are Northrup Grumman employees, others are outside consultants with extensive experience and background in these matters. They will be here this evening to address any questions or concerns that you may have.

As I said, they have been hard at work for the past decade to address this problem. Their every action is reviewed and approved by state and local environmental and department of health officials working in concert with the local water districts, and they do that before any action that we may take has been implemented. Those same officials monitor every remediation action we take to evaluate the effectiveness of that action.

For those of you who have followed this process over the years, I think you know that we are good neighbors and are working diligently to complete these tasks. For those of you who are new to the process, I urge you to speak to your neighbors regarding our actions in the past to confirm what I'm saying before you here tonight.

I would like to thank all of you for attending this evening and personally participating in this matter since it is one that is very important to all of us. And like I have said, we have our staff here tonight that are here in order to answer any questions or concerns that you may have, and hopefully all your issues this evenings will be addressed by the parties in attendance.

Thank you very much.

MR. COWEN: Thank you, Mr. Young.

In order that I can more fully concentrate on the presentations and on the audience reaction to those, I'm going to turn the remainder of this meeting over to our Citizen Participation Specialist here in the region, Mark Lowery, he will be our moderator this evening. I'm going to be sitting right here and listening, and I'll be available to answer your questions during the Q & A period and also after the meeting, if we don't get to everyone's questions. So I'm here, I'm going to ask Mark to come up and take over.

MR. LOWERY: Thank you, Ray.

Good evening. Given that I live in eastern Suffolk County and will probably get home at least an hour after the last of you gets home, I'm very much committed to getting through here as quickly as we possibly can, with no hope of seeing the Vice-President speak tonight.

As my long pretentious title of Regional Citizen Participation Specialist may imply, it's my task to facilitate two way communication between the Department of Environmental Conservation and members of the public. And so in that role I've been asked to make a few comments about the role of the public in the remediation process.

In a few minutes, Steve Scharf, who's sitting here to my right, who is the D.E.C's. Project Manager, the engineer who's overseeing the clean-up, will give you a presentation, but it's important for you to understand how your comments, how your parcipation will fit into the overall remediation process.

As Steve will explain, the remediation process, and when I say remediation process, I really mean the investigation of the contami-

nation and subsequent remediation. The remediation process includes a remedial investigation and the development of a feasibility study. The remedial investigation provides information about the type and identification of contamination, while the feasibility study uses that information to develop various clean-up alternatives that will reduce the threat to public health in the environment.

After the alternatives are developed, they are evaluated against a number of criteria to arrive at what the state, and by that I mean the State D.E.C. and the State Department of Health, considers to be the best solution for cleaning up the site. I won't go through all those criteria now, but there are eight or nine of them.

After the remedial investigation and the feasibility study are complete, the D.E.C. prepares what's called a Proposed Remedial Action Plan, and the engineers and geologists always refer to that as a PRAP, so you'll hear people say the word PRAP all through this evening. PRAP is simply an acronym for Proposed

Remedial Action Plan. And that PRAP, Proposed Remedial Action Plan, identifies the D.E.C. and the D.O.H's. preferred remedial alternative.

The D.E.C's. ultimate decision on the remedial alternative is pesented in another document that goes by the name of Record of Decision, or ROD, you'll hear people talking about RODs, they're not talking about sticks, they're talking about the Record of Decision, which is a statement of the department's ultimate decision on the remedial alternative that's been selected.

We have now reached, with regard to the NWIRP and Grumman Bethpage site groundwater, the stage at which the state has prepared a PRAP, we have a Proposed Remedial Action Plan, we have identified preferred alternative. The purpose of this meeting is to allow the D.E.C. and D.O.H. staff the opportunity to provide back-ground information and to present our preferred remedial alternative.

An equally important purpose of this meeting is to provide interestd members of the public the opportunity to provide comments on

the Proposed Remedial Action Plan. Comments, as I might add, may also be submitted in writing to Steve Sharf, and if you turn over your agenda, there is a form to facilitate that. The comment period was initially to close on December 22nd, that has been officially extended to January 22nd, so you have until January 22nd to present any written comments that you may have, and certainly we will be recording and responding to any verbal comments that come in tonight.

All comments, again, that come in tonight and we receive in writing will be reviewed by the department, all substantive comments will be addressed in a responsiveness summary that will be part of the Record of Decision. What I mean by that is that we will look at every substantive comment, and in the Record of Decision there will be a chapter that will describe either how that comment, how that thought, how that idea was incorporated into the final decision as presented in the Record of Decision, or why it could not be. Obviously, we can't incorporate every comment that comes in, but there will be a rational explanation as to why

any comment has not been incorporated into the plan.

The other important thing for you to understand is that it is highly likely that the remedial alternative that's being presented, our preferred alternative, will be modified in response to comments that we receive during the comment period. We are not here presenting a final plan, we are here presenting a draft plan that is subject to change upon public review.

All parties on the site's contact list will receive notice when the Record of Decision is placed in the repositories for review. However, it's important for you to know that this meeting and the currently running written comment period will be the last opportunity for the public to make comments on the proposed remedial action.

It is very important that all interested members of the public have the opportunity to have their questions about the groundwater remediation plan answered and to have their comments heard. To that end, I turn your attention to the agenda for this evening, which

is rather formal, but because of the need to move through the agenda and give everyone the opportunity to speak, we have to keep it more rigidly structured than we often do for these types of meetings.

We will have presentations from the D.E.C's. Project Manager, Steve Scharf, and the State Department of Health's William Gilday. So that we can stay focused, I ask that you hold your questions until after those two presentations have been made. After Mr. Gilday's presentation, I will open the floor to questions. Questions will be answered by the panel, staff members sitting to my right, and I will introduce those people at that time. I ask that those of you with questions approach one of the two microphones in the aisle so that everyone can hear your question and so it can be recorded by our court reporter sitting up front.

I ask that you keep your questions specific and succinct, and remember this is a question period, this is not a comment period, it is not the time to make comments; that will come after the question and answer period.

Due to the need for us to accept public comments at this meeting, I'm going to try to limit the duration of the question and answer period to 15 minutes. Now, if it appears that we're getting lots of good questions and we're not going to be able to answer all those questions in 15 minutes, we will certainly extend it, but if the questions get repetitive and we're not delving into new information, I'm going to end the question and answer period and move into the formal comment period. At that point, we will dismiss this staff, because the comment period is not a time at which we're going to sit here and respond to comments or respond to questions.

When we begin the comment period, I ask that you come to this podium, because we will be recording all the comments for the response of the summary both stenographically and electronically. I will have a tape recorder running only during the comment period. So please come to this podium, turn to Mr. Rehfield, our court reporter, and direct your comments to him for the record. You are

speaking for the record once we enter the comment period. And again, I want to emphasize that we will not be responding to any questions that are posed or any comments that are made here at this meeting. Questions and comments that come in during that comment period will be responded to in the Record of Decision's responsiveness summary.

It is not necessary to fill out a hearing registration card, there were some in the back, for questions. If you want to ask a question during the question and answer period, come to one of the two microphones and stand in line, you'll get your chance to ask your question. However, we do ask that if you're going to make a comment during the moderated, formal comment period, you fill out the registration card, hand that to my associate, Mr. Fonda, who's got his hand up in the back, he'll be walking around here picking up those cards, he will, from time to time, bring them to me. I will call up generally two people at a time; the first person to come up, come up to the podium, and the second person come up and stand behind him and

be ready to speak.

Again, because of the need for everyone to have their opportunity to speak, we want to limit your comments to three minutes. At three minutes the comment turns into a sermon and I will ask you to sit down. If you have more extensive comments, you are certainly free to submit them in writing.

I will, after you've been up speaking for two minutes, wave a little one minute remaining sign to you, and at the end of three minutes, I'm going to put up a stop sign. I do ask you that you surrender the microphone at that time so that everyone has their chance to speak.

With that, I will turn the microphone over to Steve Scharf.

MR. SCHARF: Thank you, Mark.

May I be the fourth in line to thank everybody for coming tonight and taking the time to come here. I think Mark gave a pretty good discussion of the overall process.

If you look real quickly up on the screen here, this is the process by which we list the site, investigate the site, have the PRP sign an

order, determine at that time if any interim measures can be done, if we need to break the project up into what's known as operable units, do a fesibility study, issue the proposed plan. Once we finalize that plan--

SPEAKER: Could you speak louder? We'd like to hear what you're saying.

MR. SCHARF: We're at the stage right here, at the proposed Remedial Action Plan for the Northrup Grumman site, and this is Operable Unit 2 for the groundwater issues for this site, and you see Northrup Grumman and the navy facility.

Once we go through the entire process that Mark described and addressing public comment, we will prepare a Record of Decision and finalize that, and that becomes a part of law, and we then move forward with looking to sign a consent order with the responsible party, which in this case is Northrup Grumman.

There's actually two sites here, the Northrup Grumman site and the Naval Weapons Industrial Reserve Plant. Originally it was one site, but the defense department does not sign

consent orders with the state, and because of certain adminstrative issues, the two sites were broken up, but in this case we're going to have one remedy for both sites for the groundwater.

Once we sign the ROD, we move into the remedial design and remedial action phase, and after that, if necessary, as will be in this case, the operation, maintenance and monitoring.

Let me begin, real briefly, going through the site history. Some people, most of you are probably aware, but some may not be, that Grumman first came into being back in the 1930s, and that's when they started their operations at the Bethpage facility. In 1987, the D.E.C. listed the Grumman Aerospace and the navy sites on the New York State Registry of Inactive Hazardous Waste Disposal Sites under the New York State Environmental Conservation Law. In 1990, Grumman Aerospace signed what's known as a Remedial Investigation Feasibility Study Order on consent with the D.E.C.

At the same time, at that time, the U.S. Geological Survey had been installing monitoring wells all in the area, and there was some

groundwater contamination noted in areas upgradient of the Bethpage Water District. The district took the initiative and went out and put treatment on their wells, in the event that some of that contamination of volatile organic compounds might reach their well, in order to protect the supply and prevent any exposure, and maintain a totally safe water supply.

They then approached Grumman to recoup their costs, and after some discussion, Northrup Grumman did enter into an agreement with the district and reimbursed them for all their costs, plus a 20 year operation and maintenance agreement.

At the same time, the D.E.C. began negotiating with NOTEK as a memorandum of understanding, as I mentioned before, with the Department of the Navy, and that's under a program for Federal facilities in the Defense Department known as the installation and restoration.

Between 1992 and 1994, Northrup Grumman and the Department of the Navy undertook investigations at their facilities, and this

included installing a number of groundwater monitoring wells, soil samples, groundwater samples and soil gas surveys, and that was to identify areas of soil contamination and groundwater contamination.

Let me just digress for a second. Grumman was already aware that there were problems with the groundwater beneath their site. And going back, I believe, to the early '80s, they installed air strippers on their non-contact cooling water discharges. And the purpose of those air strippers was to treat that water to non-detect before they recharged it back into the ground.

In 1994, the RI at the Navy plant, the Navy completed an RIFS, and what we did was use that information to get a Record of Decision, issue a proposed plan and a Record of Decision on the soils remedy. There were a number of areas at the naval facility where there was PCB contamination, inorganic chromium and cadmium contamination, as well as volatile organic con-taminants in the soils.

That Record of Decision required-- that

the Navy actually wrote and the department signed off on-- required that the Navy clean up the soil around their site, keeping in mind that at that time both Grumman Aerospace and the Navy were active facilities, and also regulated under a separate program or Active Facilities Permitting Program known as REPRA. And I apologize, a lot of these acronyms are new to a lot of you, it's one of the facts of government that they tend to take over these programs to make it easier to define it.

In 1994 and '95, two Records of Decision were signed by the department to clean up the soils at the Northrup Grumman facility and the Navy facility. The soils ROD for Grumman required that they clean up the TCE spill in the soils around Plant 2.

After the soils RODs were signed, that was broken off into what's known as Operable Unit 1; the groundwater became Operable Unit 2. At the same time that Grumman Aerospace and the Navy facilities were looking into their ground-water problems, there was an adjacent site known as the Hooker Ruco facility. Hooker Ruco also

had groundwater contamination problems because of their past disposal practicies. The Hooker Ruco facility is on what's known as the National Priorities List, or NPL site, and that's under the jurisdiction of the U.S. Environmental Protection Agency.

Keep in mind that Grumman and the Navy were not entered onto the NPL. E.P.A., or the Environmental Protection Agency, and the D.E.C. sat down and together said we need to work out a regional groundwater feasibility study. At that point, they began to do that work on a regional study that would address the groundwater contamination.

At the same time, the information that had been gathered in the investigation in all the monitoring wells that were installed by the Navy, by Grumman, and also by Occi and the USGS, identified that two other wellfields of the Bethpage Water District could potentially be affected by some of the contamination in the groundwater. And once again, in order to avert problems, the Bethpage Water District took the initiative to totally protect their water supply

and make sure that the water was totally safe to drink, and went out, and through their consulting engineer designed and went to build air stripper towers on wellfields 4 and 5.

In turn, Northrup Grumman reimbursed the District for the work they had done at 4, and the Department of the Navy reimbursed the District for what they did at Well 5. This way the water district did not have to spend any money of their own in the end to take care of this situation.

One thing I'd like to say at this point in discussing the water district, Bethpage Water District 5 has only one time had a minute trace, below detection of it, of a volatile organic compound. At no time were any of these wells, the finished water affected, because the treatment was on all these wellfields before any problems ever got to the wellfield.

Wellfield 4 varies from non-detect to very low levels, only Wellfield 6 there was one well with some problems.

But once again, I want to reiterate, because I know that's probably a concern of a

lot of people, the water has always been safe to drink, it's been continually tested and monitored, and there has never been a problem with the finished water supply.

And that brings us close to the present. In 1998, for whatever the reason, it was decided that it would be better to split off the Hooker Ruco site from the Navy and the Grumman site and deal with feasibility studies for the ground-water issue separately for the two facilities.

At that point, Grumman's consultant, Gary Miller, put together eight alternatives in what's known as a feasibility study in order to come up with a solution to address the ground-water contamination from the past operations at Northrup Grumman.

Also, one thing I left out in the site history, in 1996 Grumman Aerospace was purchased by Northrup Grumman and the Northrup Corporation to form, they actually merged to form the Northrup Grumman Corporation.

What you see behind me, up on the screen here, represents most though not all of the groundwater monitoring wells that were installed

over the last ten years during the progression of this project; so you can see it's quite an extensive network. Some of these well locations have wells that vary in depths, so that we can monitor the different levels in the aquifer.

Overall, what the RI or Remedial Investigation determined was that there was groundwater contamination underneath the Navy site, which is up here, underneath the Grumman site and a number of their plants, which are here and here, and separately, the investigations that the Occidental Chemical was doing, as former owner of the RUCO facility up in this area. And what you see in blue is an area defined by five parts per billion total volatile organic compound.

And one of the things that this figure doesn't show is that-- this was an attempt to determine the lateral downgrade and extent of groundwater problems. However, it doesn't show you three dimensionally what really is going on, not all the groundwater in this area is affected, because this contaminant sinks in the water, and as it starts to move offsite, it had some downward component as it moves south.

In addition, during the years of operation of a number of non-contact cooling water wells by Grumman, they were pumping upwards of 20 million gallons a day during certain times of the summer; it drew a lot of this contamination down and also worked to contain it on the site. Today an estimation is about 75 percent of the groundwater contamination still lies beneath the Navy facility and the Northrup Grumman facility.

In 1996, a number of the manufacturing processes at the Grumman facility were shut down, and due to that, the need for the groundwater at the site was reduced, and so the department went over and approached Grumman and said we need to work to do a design system that will contain the groundwater from beneath the site and treat it, and make sure that no further degradation of the aquifer occurs, and that's what we call an Interim Remedial Measure.

Hold on a second, excuse me for a second.

Mark, can we turn the overhead projector on?

Northrup Grumman put together a

feasibility study at the direction of the department, and in that FS they evaluated eight alternatives to address groundwater contamination. First and foremost was to make sure that no more of the contamination in the groundwater was leaving the site.

So what we termed originally the IRN was now called the on-site containment system, and that was three new groundwater extraction wells were put in, and one existing well, to pump approximately 3,700 gallons a minute in order to contain the plume that's on-site. And what you see here, this is the Grumman facility, this represents Central Avenue here, and this is the groundwater beneath the site. And what this is acting to do is to-- these extraction wells, is to cut off the site groundwater from flowing past the southern end of the property line.

Today, after two years of operation, data has shown that this IRM or ONCT system is effective in containing the site. The shallow groundwater is already cleaned up in some of the wells to non-detect down gradient. And what this did, though, was to leave the remainder of

contamination that's gone past there to be dealt with.

Here you can see, this is based on the core of the monitoring that's been done by Gary Miller on behalf of Grumman, and this shows you conceptually how the containment system works. And you see here, these are the southern recharge basins, these are the four capture wells, these three along the south end were installed in 1997-98, and this well, GP-1 was existing, already in existence.

The treatment train for the effluent of the groundwater that was pumped out was already in place, and so piping was just rerouted to use the air stripper and the carbon filtration on the air stream to prevent any offgassing of chemicals.

It's my understanding that approximately 35 to 50 gallons of solvent are recovered between every two to four weeks from this system that's ongoing right now.

So of those eight alternatives, every one included the on-site containment system, a well-head treatment contingency in the event that any

municipal supply wells located south of the Bethpage Water District area that might be affected, a long-term operation, maintenance and monitoring plan, which would include the monitoring of the containment system, the monitoring of outpost wells upgrading Bethpage Water District Wells 4, 5 and 6, additional outpost monitoring wells be put in place down-gradient of the leading edge of the groundwater contamination to determine its extent, an off-site-- then some of the other alternative processes were a pump and treat system for the elevated areas of groundwater contamination off-site, a full plume containment system, and also a treatment of an area of elevated contami-nation on the Navy facility.

It turned out on the Navy facility, once all the groundwater pumping stopped in that area, the monitoring well on the southern end of the Navy property, the concentration dropped by orders of magnitude. In addition to which the main source areas of solvents in the groundwater was in the back, known as Site 1, on the eastern side of the Navy facility, they began to sparge,

what's called air sparging in that area, to bring the contamination out of the shallow groundwater, and they put in a soil vapor extraction system as part of the soils ROD that I mentioned earlier; that system has been on line for two years and it's been working quite effectively to remove mass amounts of solvents from the shallow groundwater and from soils, and in addition, what's known as the HN-24 area, concentrations have dropped dramatically.

So just to sum it all up, all the remedies that had the HM-24 alternative were basically kept in place because it was the sampling that determined that it was done after the FS was almost complete, but alternatives 2, 4, 6 and 8 were pretty much screened out for that reason.

The other part of the proposed remedy, if you look at this figure, this gives you the location of all of the groundwater recovery wells that were screened and assembled in all of the alternatives. The full plume containment had a minimum of six offsite wells, each one located in each location, had its own

independent air treatment and groundwater treatment system in place. And these locations would have had to have been in backyards, people's homes, in addition to which the amount of groundwater that would have to be pumped out would have been even much greater than initially envisioned in the FS, and it was deemed technically impractical.

So what we came up with, after the screening of all the alternatives in the eight criteria that Mark talked about, and protection of human health requirement, compliance with regulations, long-term effectiveness and permanence, short-term effectiveness, production of contaminants in the groundwater, implement-ability and cost and community acceptance, which is the one alternative why we're here tonight, we came up with alternaive three in our proposed plan.

And what alternative three will do, in a nutshell, is to include the on-site containment system for groundwater contamination, or the ONCTRI, the IRM, offsite groundwater pump and treat for the one elevated area south of the

Grumman facility off of Broadway, south of Central Avenue, and there happens to be also an area where we can locate a treatment system to make sure this one area of contamination doesn't move any further south.

And this one here, I want to go through a list of explanations. Continued operation, maintenance and monitoring of the wellhead treatment at the Bethpage Water District. And what that's saying is that as long as the water supplier or that district or any other district that may be affected wants to maintain that well, the responsible party will pay for that operation and maintainance and monitoring of that system. This is not saying that the district must maintain or use that well.

And as a separate issue, long-term operation, maintence and monitoring of the IRM, which is now called the ONTC system, a whole series of groundwater wells down gradient to track the plume, where it's moving, make sure it will never affect any other water supplies. If it's determined, based on the groundwater monitoring network that will be installed at the

requirementa of the department, that treatment must be implemented at other supply wells to ensure that no groundwater contamination ever enters a water supply, then the department and the D.E.C. and the D.O.H. will make that determination based on information, and institute a program by which Northrup Grumman and the Navy will supply those wells with treatment.

Once again, it's going to have monitoring of the ONCT system and the GM-38 area to keep that elevated portion of the groundwater contamination from going any further. And it's our belief that where that area came from is most likely that the well network, production network that Grumman had on their facility, as it was pumping, contained a majority of the contamination, but it wasn't designed to do that, and that there were likely areas where the contamination passed by.

In addition, we're going to have a comprehensive monitoring of the groundwater attenuation, which generally, in this instance, is dilution and also some natural remediation of

the contaminants. Again, the municipal wellhead treatment contingency by outpost monitoring. The outpost monitoring will indicate that a water supply needs treatment, and they will be strategically located at a distance of way up gradients to give time for that municipality to take care of their water supply.

And once again I want to reiterate, because I'm sure that's a concern of everyone here, all the water is safe to drink; it's tested on a routine basis down to a level below a part per billion, and no one is being affected by the contamination, because where it is in the groundwater is below a hundred feet below grade, at a minimum, when you move offsite.

And just real quickly, just to reiterate what we're going to do here now, we have the alternative, the proposed plan out there, I would hope that a lot of you had a chance to go over to the Bethpage Public Library and take a look at it, and after my presentation here, if you have any questions or comments in the format that Mark laid out, I would like you to do that, to present your concerns at this time.

And once we do that, we want to move forward with signing the Record of Decision, because the sooner we get that Record of Decision signed, the sooner we can enter into consent order negotiations with Grumman, and they can then determine between themselves and the Navy how this project will proceed without affecting the timeline that we set forth in the consent order.

And, in fact, predesigned studies for the GM-30 area have alreay been started. The Navy has taken the initiative, based on the initiative of the department of Grumman to put a hydrogeologic monitoring plan together, and we've gone out and done some vertical profile borings, at great expense, they've drilled all the way down to what's known as the Raritan clay, which is about 800 feet deep, and they've made some determinations that indeed the GM-30 area does need, require remediation, and they're on board to get going with this as soon as possible.

And that's it. I think that sums it all up, and what I'd like to do now is turn the

microphone over to Bill Gilday, and he's going to just briefly talk to you about any health related issues that you may have.

Thank you.

MR. GILDAY: Thank you, Steve.

My name is William Gilday, I'm with the New York State Department of Health. One of the things that the Health Department does is we come out and we talk at public meetings about health issues.

We've been involved with the state superfund program from the earliest years, in part because, well, D.E.C. is the lead on cleaning up these sites, working with the companies that have generated the pollution, or other avenues of getting the pollution cleaned up, they often have to deal with health issues, and the health department will typically look at those-- work with D.E.C. in coming up with appropriate clean-up remedies that are protective of public heath.

When we say appropriate clean-up remedies to protect public health, what we're referring to is are there exposures associated with the

chemicals from the site, and if there are these exposures, what are the nature of these exposures to the chemicals, how can we stop these exposures to the chemicals, how can we make sure that these exposures never come back, that they're not recurring.

When we talk of exposure, people can be exposed to chemicals or contaminants in various ways. We could ingest contaminants through perhaps drinking contaminated water if our water supply is contaminated by chemicals; if we play in-- maybe have children that play in dirt that's contaminated with contaminants, perhaps the children could ingest small particles of dirt and be exposed in that way; people could be exposed if there's dust from a dirty site blowing around, soil contamination areas, that could be ingestion.

There could also be inhalation, we could breathe contaminants, say trichloroethylene, it's a volatile contaminant; where you use the trichloroethlyne in high quantities, certainly it will volatilize, we could be breathing it, inhaling it. On my way over here tonight,

actually I had my room switched, because they did some painting in the hotel and I walked into the room, I said, "Wow, I'm getting exposed to these solvents here." That's an inhalation exposure to a chemical. We look at those types of exposures.

People are using groundwater, well, we can drink it and be exposed that way, but people could also inhale it, if they're cooking or boiling their water in the kitchen, and, gee, the vapors are going through the house, or if we take a hot shower in the morning, I don't know too many people who take cold showers, we take a hot shower, maybe you're getting some of these volatile chemicals, inhaling them while you're taking your shower.

And contact issues, also. We contact these chemicals, they're on our skin, when you're taking a shower, you're not only breathing the stuff, or maybe if you're drinking it while you're taking a shower, you may be absorbing through the skin. That's one route of exposure that we're concerned with.

We want to look at those exposures

associated with these chemical facilities and contaminated sites, if people are being exposed, we want to eliminate those exposures, we get rid of those exposures.

This particular site, in this particular aspect of the project that we're working on is contaminated groundwater. It became an issue basically in the mid '70s when the State of New York, actually the chemical industry actually developed methods to start testing water for low levels of chemicals, volatile organic chemicals, synthetic organic chemicals, and once that capability was available, we thought, hey, it would be a good idea to check the public water supplies, let's check the public water supplies.

And in the early years of that program, '75, '76, '77, Nassau and Suffolk counties, because of the concern of the development and the aquifer, started comprehensively testing every water supply. Well, several of them came up with contaminants. Bethpage Water Supply Well was one of those.

Now, in those days we didn't know, gee, what do these contaminant levels mean? We had

been working with toxicologists on the national level, anyone in the state level, certainly, and the number that was used in the early days, 50 parts per billion for this type of chemical, that was-- the numbers in the Bethpage well were below that, but Bethpage said, and a lot of the water districts said, "Look, we've got these chemicals, the state's not sure, the Federal Government's not sure if these things, you know, we should be exposed to these kinds of things, we're shutting the wells down."

And most of the water districts like Bethpage shut down the contaminated wells until such time as treatment methodologies were developed. Steve mentioned air strippers, PAC tower air readers which actually remove this chemical very effectively. We don't just trust the fact that we know they're very effective, we monitor routinely. In Nassau County, in fact, there's more stringent monitoring, Nassau Department of Health, who we work with a lot, says that quarterly sampling, which is the State regulations, that may suffice, but we want to do monthly sampling when we have these types of

chemicals near these wells, these wells have been affected and they're treating it, we want to make sure that these removal systems work. And as Steve indicated, there's been no exceedences of the standards.

Subsequently-- I had mentioned the early number of 50 parts per billion. In 1989, after a number of studies had come in, the Federal Government and different state governments, including New York State, felt comfortable with the data in promulgating standards, we actually did, and we said five parts per billion is the standard for trichloroethylene and similar chemicals. And that was based on a number of studies, the toxicology, the health effects, that issue always comes up, sometimes we deal with these issues when people have been exposed and people want to know, "Gee, what are the health effects?"

Now, when we talk about health effects, if you look at some of the literature for trichloroethylene and you see, well, TCE could cause some sleepiness and dizziness, some headaches, people can get a little giddy. Keep

in mind that those effects are from people who work with TCE, the straight product, they pour it out of a drum, 100 percent TCE when they do whatever they do with it. Most of the data that we have on human health effects from trichloro-ethylene, are very high exposures, people that are working with the chemicals.

OSHA is the government agency that deals with exposures in the workplace of these chemicals, for people who use these chemicals. We have data from high exposures of laboratory animals, particularly when we get into the carcinogenic issue. Is something carcinogenc, does something cause cancer. Does TCE cause cancer, do these chemicala cause cancer?

Well, we don't often have human data, it's very difficult to say if somebody's got cancer from exposure. You can look at workers, but workers change jobs, the cancers typically have a latency period, it takes a long time to develop, we don't know. But we have these laboratory studies where people can, they actually do dose experiments and determine if things are cancer causing and laboratory animals

have indeed shown that at high levels their TCE is carcinogenic. Based on that data and based on other evidences, the groups that deal with cancer believe that trichloroethylene is a probable human carcinogen. There is no clear evidence, indisputable, there are some suggestions in the literature that people exposed at moderate levels of the contaminant could have some health effects, could have some carcinogenic effects, but we don't know for sure.

When we set our standards, we assume that, hey, it is carcinogenic, and one of the reasons why that number I had mentioned, the earlier number of 50 parts per billion was lowered to five parts per billion was, in fact, because there was pretty strong evidence, there was a link in laboratory animals that this particular chemical would cause cancer.

That's how our standards are derived. We don't use the level, because it's a high level, we don't say, well, that's the acceptable level. We typcically will go considerably lower than that, often in the order of a thousandth, more than a thousandth of the exposure of whatever

the laboratory animal, whatever the data is. If we have human data.

Suffice it to say that the level that's established is very conservative, very protective of public health; we use one in one million, that means that if one million people were drinking water at five parts per billion TCE, out of that one million people, one of those people we would expect would probably develop cancer that wouldn't ordinarily be diagnosed with cancer. Keeping in mind that cancer, unfortunately, is a very common disease amongst humans, one in every two men will be diagnosed with some type of cancer during a lifetime; one in three women. But our standards are based upon conservative assumptions that no more than one in a million people so exposed would develop cancer related to that exposure.

Those are some of the early issues that we addressed, not just with Bethpage, this is something that was going on in other water districts that we started testing, we could see it in the water and what does it mean? And the agencies were involved and doing their best and

coming up with protective numbers. And as I mentioned, the water districts said, "Hey, we're not going to allow any exposures here."

And so we've dealt with those issues all along, and while the remedial investigation was going on, what Steve had talked about, while we were coming up with looking at different remedies, how might we address the contamination here, how might we ensure that these exposures don't occur in the future, we worked with the Department of Environmental Conservation to ensure that there were enough remedies here, enough components of the remedies, what was the selected alternative. We have to agree, this is the Department of Health, with these proposed remedies before the Department of Environmental Conservation goes forward with it. And we decided that, yes, there's enough in here that will prevent exposures to these contaminants, we're pleased with this proposed remedy.

And that's basically it. We want to make sure that the exposures, they have been cut off, we want to make sure that this problem is taken care of, that we're not here forever dealing

with it, that we don't have to come back, there's enough in here in terms of monitoring and protections and getting the chemical out of the environment that the exposures will be mitigated.

I'll be here for questions and answers, if there are any.

Thanks.

MR. LOWERY: Thank you, Bill.

I like having Bill around, because he's one of the few people that's old enough to give us the historical perspective on some of the environmental remediation problems we face.

At this point we're going to start the question and answer period.

I want to reiterate that you're free to come to this microphone and we've placed a microphone in that aisle, so during the question and answer period you may come to either of those microphones, wait for me to recognize you, ask your question to me, and then I will decide which of our panelists, to whom I'll introduce you here in a minute, is best to answer that.

We also have some other people in the

audience, I will point out that we have Bruce McKay and John Lovejoy from the Nassau County Department of Health here in case any questions come up that are relevant to their area of expertise and regulation. We also have a bunch of suits from Grumman, and so forth, here, and they can answer questions, as well. So there are lots of people here who can answer questions, but I think most of your questions will be addressed by the five people to my right.

You've met Mr. Cowen, my boss, who I should also point out is a professional engineer, so he sometimes gets a bit technical, but I don't hold that against him too much; to his right is Steve Scharf, who you've listened to. You can be assured that Steve understands remediation technologies much more than he understands computer projection technologies.

To his right is Sal Ervolina, Sal is the director of the Bureau of Eastern Remedial Action within the department's Division of Environmental Remediation, he's Steve's boss. And to Sal's right is Bill Gilday, who is a senior sanitary engineer with the Department of

Health, and to his right is Steve Bates, and I apologize, Steve, I did not get your title.

MR. BATES: I'm also with Bill, I'm actually Bill's supervisor, with the Enviorn-mental Closure Investigation Bureau in Albany.

MR. LOWERY: Okay; at this point the floor is open for questions. Please come to the microphone.

MR. GILDAY: And just to clarify, while we're waiting for the first question, I wasn't around and involved in those studies in the '70s, I just happen to have read about it and know about it.

MR. LOWERY: Again, I just want to remind you that this is now a question period, please keep your questions succinct and specific, we are not at this point recording comments, the comments will be recorded at the comment period, not during the question and answer period.

I ask that you limit your questioning to one question and one follow-up question at each turn at the microphone; if you have other questions, you can go back to the end of the line, so we can move through everyone and get

through everybody's questions.

MR. SADOWSKI: My name is Joe Sadowski.

That was very good, 30 years and we get one question each. Good.

All right. In 1970, the problem took place in the mid '70s; is that not correct? Why did it take the time from the mid 70s, to date, to come up with an answer that was already answered in 1992, before the Board of Health did nothing for the people?

MR. COWEN: You have several questions rolled into one there. We can start off by saying that groundwater problems with some of the production wells on the Navy and Grumman property were first identifified in the early '70s; that's correct.

MR. SADOWSKI: With the Navy.

MR. COWEN: In the 1970s.

MR. SADOWSKI: Right.

MR. SCHARF: During their production, the use of groundwater for their production purposes.

In order to address that, the Department of the Navy installed, I believe, correct me if

I'm wrong, in the early '70s an air stripper-- no, excuse me, they turned off that water supply to the building and brought in the Bethpage Water District water supply for their potable purposes on the plant.

As time went on, they began to realize that there were ground water problems based on past disposal practices, not unlike many facilities all around the country; as the country began to become aware that these are problems. And so, in order to address that, and the foremost of which in most of our minds is Love Canal, which started the EPA to administer the CERPA process, or the Comprehensive Environmental Program to address these issues.

In the meantime, as Bill had said, the county began to go out and test all the municipal wells to find out, or require testing, to find out if there were problems, and that's how we've evolved to where we are today. As our understanding grew and our understanding of the contamination problems, we became more aware and what the-- help me out here, Bill, about what the effects of these chemicals are, and the

answer really is a problem that needs to be addressed.

MR. SADOWSKI: What was that, the expectancy of the chemicals; is that what you said?

MR. SCHARF: No, not the expectancy, the toxicity of some of these chemicals.

I mean, let's not fool anybody, we're an industrial society; on Long Island in particular the groundwater is sole source. Everything that we drink on Long Island comes from the ground water that's recharged through the soils, and as we became aware of these problems, a lot of these sources were affecting the groundwater, we had to start investigating those sites, clean them up, and also address the groundwater contaminantion.

MR. GILDAY: Let me also just reiterate, because you're saying that the health department didn't care. That's not true at all.

These treatment trains, which you can see right here in front of me, some of them have been placed for quite of number of years already on some of the municipal wells based on the

initial testing that Nassau County was aggressive in implementing on their municipal supply wells and, to date, just to show you the extent of the problems, I believe it's somewhere around 80 municipal wells in Nassau County have treatment trains on them to remove volatile organics.

And so, unfortunately, it's a problem that we need to address, clean up the sources and restore the aquifer to predisposal conditions.

MR. SADOWSKI: Is that the reason why there's 400 superfund sites on Long Island, and each one of those superfund sites has the same chemicals and compounds that only the Navy is and was allowed to use, as only 50 companies in all of United States, including Alaska and Hawaii could use this sole only chemical, and that is the reason why the Lloyd Aquifer is now polluted?

MR. SCHARF: Again, you're throwing a loaded question.

MR. SADOWSKI: That's the question.

MR. COWEN: Let me answer that.

I'm not sure what chemicals you're

talking about. The chemicals that we're speaking of here are volatile organic chemicals like trichloroethylene, they were ubiquitous, they were used all over the country, not just 50 companies.

MR. SADOWSKI: I'm talking about the chemicals used from the Navy when it started back in the '50s and the '60s.

MR. COWEN: I'm not sure what chemical you're talking about.

MR. SCHARF: Under the federal regulations, called the Installation Restoration Program, the Navy, the Army and other defense department branches had to go around, identify the contamination at their facilities and address them.

I just went through 15 years of history in about 30 minutes. It's impossible to give you details of everything they did. They took a number of samples in the soil, identified areas that had what's known as polyaromatic hydrocarbon contamination, inorganic contamination, (indistinct) in the soils, and one by one these areas were addressed under this IR

program, which was all coupled into the first ROD.

The other thing that I really didn't cover here, because we don't have enough time to discuss all this, is that as Grumman decided to close down some of their operations at the Bethpage facility, the Navy then decided to close the naval plant, because there wasn't a need for it at this location, and as part of that, under what's called the REFRA, Active Facilities Permitting Program, all the insides of the building had to be cleaned out, as well, from all the different chemical, industrial and manufacturing processes.

I think what you're trying to say is that, you're sort of trying to imply that there was some sort of coverup or some information was being withheld; am I correct when I say that?

MR. SADOWSKI: No. I'm glad you opened that door. There is no coverup.

MR. COWEN: No.

MR. SADOWSKI: The constitution clearly states if the Navy or the Army or any one of those agencies did cause any kind of contamina-

tion they must correct the problem and pay compensation to each of the families or home-owners that have loss, whatever the loss may be.

MR. SCHARF: Well, they did that.

MR. SADOWSKI: They haven't.

MR. SCHARF: They did. They stepped in. I don't want to get into a discussion. They did. They took care of the problem before it ever got to the Bethpage wells as part of that.

That's the route in this area where the contamination could possibly be-- people could be exposed to it, through the water supply, and so that had to be prevented before it ever got there.

MR. SADOWSKI: How could they have taken care of it if they only picked it up in the mid-'70s, which it took at least 15 years for it to be detected, and it's still now ongoing, and this is 2000.

MR. LOWREY: Sir, we have half a dozen people standing by.

MR. SADOWSKI: I said I'll go on the back of the line and come back again.

MR. LOWREY: Okay.

MR. LISA: Hi, my name is Angelo Lisa.

I'm fairly new to this, but I have some questions regarding the chemicals that were found in the water and in the soil, and why we don't have the specific breakdown of the items that were found, as well as the material safety data sheets associated with them and the permissible exposure levels that OSHA has set on these chemicals.

MR. SCHARF: Once again, you have to remember that the Navy facility is over 100 acres.

MR. LISA: Right. But they're not exempt from the right to know.

MR. SCHARF: Right; that's absolutely correct.

And in the PRAP list of ranges of chemicals, but for a more detailed evaluation of the site--

MR. LISA: Is this available in one copy of this report that's available in the Bethpage Library? And why isn't this very important information more accessible to the homeowners, and should be basically part of a group mailing

since it does have the potential to affect all of us?

MR. SCHARF: I think you have the right to be concerned, I assume you live nearby the facility.

MR. LISA: Yes, I do.

MR. SCHARF: And as part of the investigation, there was a concern that some of the contamination on the Navy facility and/or the Grumman facility may have migrated offsite. And the New York State Department of Health took the initiative and went out and sampled a whole number of yards and facilities and street locations offsite, and none of the contamination that was found on sites, such as PCBs or PAHs or the cadmium or chromium, the inorganic or the volatile organics, which are the main contaminates that were used in the process, were found offsite.

And, Bill, I don't think you were working then, but you have those reports.

MR. GILDAY: Yes, we have information about that. I'm not sure what you're asking as far as the type of data.

MR. LISA: I'm asking where is the breakdown of the exact chemicals that were found, what are the hazards associated with each and every chemical that has been found, and what were the specific levels that were found in ground soil, in the water, and if there is any discharge or contaminated discharge from these air stripping water purification systems, and who is monitoring the air discharge from this, since it's air based, what type of filtration, are there any levels of exposure we should know about regarding the discharge from these units?

MR. SCHARF: There are no MSDS sheets in the library right now, I don't think that we normally do that. However, the MSDS sheets are more for the right to know and the employees that work. These MSDS sheets can be made available to you, but I'm not sure exactly how.

MR. LISA: They can be made available to anybody.

MR. GILDAY: All of that medical data, the environmental data that you're referring to is in the reports, I mean there are voluminous reports, I mean we're talking about hundreds and

hundreds of samples.

MR. SCHARF: Right. And it's unfortunate, because so many people, they started this investigation in one area and they expanded it to the entire facility, and a number of different reports, and even the most technical person involved in this project initially can be somewhat confused, I'll admit that; there's a lot of reports, a lot of information, there's no two ways about that. But if you work through some of those reports you can see the tables where the soil samples were taken.

MR. LISA: Where would these reports be available?

MR. SCHARF: In the Bethpage Library.

MR. LISA: They can't leave the library.

MR. SCHARF: That's correct.

MR. LISA: I'm sorry I don't have seven hours a day to sit there and go through volumes and volumes of information.

MR. SCHARF: Let me answer some of these questions for you. You're worried about the air discharge.

There's two different things going on;

okay? The groundwater that Grumman is using for their production purposes and now the containment system is treated on-site with an air stripper. Now, the air discharge from that, because the contamination is high on the site, is treated with carbon, so they remove the volatile organics from the airstream before it goes out into the air. The carbon is then steam stripped and they recover that and they send it off-site for disposal. So that addresses that question.

MR. LISA: Actually, it doesn't.

Is there any monitoring of the discharge that goes through the activated charcoal filters?

MR. SCHARF: Yes. Grumman monitors the discharge.

MR. LISA: Shouldn't there be an independent third party monitoring? It's sort of the mouse in charge of the cheese, no offense to Grumman, but, you know.

MR. COWEN: This is a question that comes up at every single meeting that I attend, so I might as well address it right here.

Grumman has professional engineers, for instance, working for them in a consulting capacity. There is absolutely no professional engineer that I know in New York State that would ever jeopardize their license by submitting false data or any other subterfuge along those lines, it does not happen. We use the exact same consultants that work for the State of New York to do split samples on sites that we have that other people employ. It does not happen.

MR. LISA: Well, I hate to differ with you, but most hazardous waste situations do require the hiring of an independent third party monitor, and that's true with lead abatements and asbestos abatements. So I don't see where there's really a difference.

MR. SCHARF: Keep in mind that the key point is they are monitored by people like myself and people in the regions that drink the water, take samples of their water discharges back to the recharge basins, they do occasionally check their samples. The labs that we send the information to has to produce these

quality assurance reports, and there's a whole--

MR. LISA: So if a bad report does come back, and let's say your engineers do detect a higher than normal level, or possible contamination level, are we to get a phone call? That's what I'm looking for, a little more freedom of information here and a free flow of information and having it more accessible to the homeowners.

MR. SCHARF: Sure; I understand your concern.

MR. GILDAY: Let me give you my card with a 1-800 number here, and you can call me, I'll talk to you about the data, I'll give you some of the tox--

MR. LISA: You understand, it's not just me, it's the 25,000 other people that couldn't make it here tonight for whatever reason that they haven't.

Is there an upcoming website that's going to be available for the residents of Bethpage, or someplace where this information is more accessible?

MR. SCHARF: You know, a website isn't a

bad idea, because the consultants for our department has most of this data in tabular form and on disks and from different sources, and that's maybe not a bad idea in today's day and age, to put all this information on a website. It's certainly not something we're required to do, but being it's your suggestion tonight, they can maybe take you up on that, from one citizen making the statement at a meeting, maybe they'll do that.

MR. LISA: It certainly would make information more readily available to the average person.

MR. SCHARF: I agree.

MR. LISA: I won't take anybody else's time up, I'll get back on.

MR. SCHARF: With all the reports that are there--

MR. LISA: It's going to take me months to go through all those reports, and, you know, this might be critical information. I have small children at home and I do get concerned.

MR. SCHARF: Absolutely. I, myself, I grew up, as Ray mentioned, on Long Island.

MR. LISA: Do you still live here?

MR. SCHARF: No, I don't.

MR. LISA: Well, I do.

MR. SCHARF: But other places, where I live, there's problems they're, too. I live by the Watervliet Arsenal where there's problems there.

MR. LISA: Did you know about it before you purchased your house?

MR. SCHARF: No, I didn't.

MR. GILDAY: Could I just reiterate that number for anyone who wants to take that down? I'd be willing to talk to anybody about the data that's out there, I don't hide anything, I'm interested in making sure that there's no exposures in the various pathways, air, ground-water related to this and other sites in Long Island. I'll be happy to talk to you, William Gilday, G-i-l-d-a-y, 1-800 458-1158, extention 27880. I'll repeat that. 1-800 458-1158, extension 27880.

And regarding the data that's out there, like I said, I'll talk to whoever wants to, and if it's toxicological information, either I can

provide that or get someone to respond and provide that.

There aren't any exposures related to the contamination at the site, from the site; we're working with D.E.C. to ensure that's the case, whether it's air monitoring issues or whether it's the continued water supply issues.

I can tell you that historically the numbers that were in the water when we first started testing, one well had about 30 parts per billion of TCB, the guideline that was in use at the time was 50 parts for that.

We can discuss that at some time if you want; right now there's non-detect.

MR. LOWERY: You had your turn; let others have a turn, please.

MR. LISA: Okay. But he just brought up another important point.

MR. LOWERY: Get at the end of the line, please.

MR. LISA: Okay, I'll wait. I'll come back.

MRS. HOBBINS: My name is Rose Hobbins, President of North Massapequa Civic Association.

I want to thank you gentlemen for having the meeting a week and-a-half before Christmas; the timing could not be more propitious.

MR. SCHARF: Just to respond to that.

No matter when we have a meeting like this, there's always a problem. If we have it at 7:00, people say why don't you start at 7:30; if you have it before Christmas or before Labor Day or in the summer; it's difficult.

MRS. HOBBINS: You guys know I've been dealing with the agencies for 25 years, invariably you either have it the day before July 4th, the day before Thanksgiving.

Let me go on.

The gentleman is quite right, there are other issues, other areas where we have concern. When we have a meeting, the D.E.C. or the E.P.A. does supply information regarding the VOCs or metals in the ground and the measurements of same.

What I would like to know, one question is has the chromium been speciated?

MR. SCHARF: In some of the sampling that was done back in the original part of the inves-

tigation, yes.

MRS. HOBBINS: So if we get the information, that would be defined?

MR. SCHARF: That's correct.

MRS. HOBBINS: Okay, fine.

My main concern is the offsite contamination, the tremendous area of contamination, and what is being done. I heard tonight about wells on Central Avenue, but it is my understanding, from having read quite a bit on the site, that this contaminantion is falling south of Hempstead Turnpike. That's quite an area.

MR. SCHARF: Absolutely.

MRS. HOBBINS: Okay.

What is being done in that area; anything?

MR. SCHARF: As we get down towards those areas south of Hempstead Turnpike, the concentrations drop off dramatically as to what they are at the site. Unfortunately, we looked at full containment of all of the groundwater contaminantion associated with the site, and we found that it was technically infeasible.

And I know that's, in some ways, a hard

pill to swallow, because we want to look to restore everything to predisposal conditions, and unfortunately that's just not possible.

MRS. HOBBINS: Could you give me, for instance, what I'm trying to get for some of the people here, rather than say 3,000 feet wide, could you tell me like there's an area of contamination from Wantagh Avenue to past the high school? Could you tell me where the plume exists?

MR. SCHARF: Hold on, let me back up here for a second.

Keeping in mind that this was based on five to six year old data, we talk about the extent of any measurable contamination from the Grumman site, and if you look at it here you can see that it's almost as much off-site as it is on-site. Then you say to yourself, it's a quite a magnitude. This is Hempstead Turnpike right here, so obviously it was already known it was approaching Hempstead Turnpike, but the one thing to keep in mind is that--

Mark, could we turn on the overhead projector?

What happened is the contamination concerned in this instance here is volatile organic contamination, trichloroethylene, it's heavier than water and it's a chemical, it's like oil and water in an Italian dressing; however, at lower concentrations it has some degree of solubility. So it moves slower than the groundwater flow, because it tries-- tends to try to stick to the soil particles, but it has a degree of admissibility.

MRS. HOBBINS: How about cadmium and chromium?

MR. SCHARF: Cadmium and chromium is limited onto the site in areas around Plant Number 2.

MRS. HOBBINS: It does not exist off-site at all?

MR. SCHARF: Only in a few shallow groundwater wells in the area near the BOCES facility.

Now, over here, if you look, you see it starts to sink down, it moves slower.

Also, probably 75 percent of that volatile contamination is still underneath the

site even though it extends to the same area to the south. The concentrations are almost all magnitudes lower, except in that one area that we found, which is highly elevated around GM-30 and D-2.

As part of the program, because so much time has gone on for a number of reasons before we were able to put this proposed plan together for a groundwater remedy, the department, at my direction, directed Grumman and also the Navy to install a number of off-site additional monitoring wells to begin looking at the condition off-site further down south of Hempstead Turnpike and then beyond.

They went to areas that they thought would be the end of the plume, and we found that the concentrations have dropped from on-site, but they are at Hempstead Turnpike, which means it is beyond Hempstead Turnpike; that's correct.

MRS. HOBBINS: Okay.

In your presentation, you mentioned that Grumman had leave to long-term operation, and, you know, oversight monitoring and maintenance. What exactly does that mean?

MR. SCHARF: You're right, that's a loaded title, because the PRAP actually in some ways was written very generically so it would cover everything. When we go forward and sign a consent order, that's got to cover, for example, you're running, just from an engineering stand-point, these recovery systems that they're operating to contain the plume on the site; you're talking about four wells pumping close to 4,000 gallons a minute, you've got process control that has to be maintained, the pumps, the treatment train, the monitoring that we talked about in the air stripper, that all has to be maintained.

At the Bethpage Water District, for example, they have the air strippers in place, and only one of which is really, really needed, but they run all three of those, and we have to put in a record document as a Record of Decision as part of the law, to require Grumman to pay for that. Up till now it's all been what we term, under the law, interim remedial measures. But the district wants us to make sure that they will be reimbursed for all this cost.

MRS. HOBBINS: Would you let us know exactly what "long-term" means, or what does maintenance-- does it mean somebody is going to come there once a year and say--

MR. SCHARF: Long-term, under what's called the CERPA process, or as defined in the actual contingency plan, is a 30 year time frame. They use 30 years to estimate the cost, and when you look at the site, the extent of the contamination and what needs to be done, we had to base this out on a 30 year cost. And so that's what long-term is. Because, in all likelihood, in 30 years those on-site containment wells will still be necessary based on the time rate of travel if contamination is present.

And that's an unfortunate event, I know; we would like to clean it up in a year, but that's just the way it goes.

MRS. HOBBINS: Finally, how deep is the plume?

MR. SCHARF: It varies; that's what some of these figures are, because this is taking data from not all points on a continuous plane, but it goes down as deep as-- in some areas,

actually, down six, seven hundred feet.

MRS. HOBBINS: Which is where our wells are.

MR. SCHARF: That's correct.

And that's why we put together a wellhead treatment contingency plan, to make sure that, before any of this reaches any of the municipal wells, that a treatment train will be put in place.

MRS. HOBBINS: Thank you.

MR. SCHARF: You're welcome. Thank you for your question.

MR. ELLIS: My name is Harold Ellis.

I, first of all, want to say I'm highly gratified that you did this. I think it's very enlightening. For me, it's the first time I've heard of this entire affair, which came through a leaflet, I guess, distributed by New York State Department of Environmental Conservation.

MR. SCHARF: That's my newsletter, I wrote that.

MR. ELLIS: Thank you.

And it's a little bit-- it concerns me quite a bit, I was living in a vacuum, I guess,

before this.

I bought a house in Levittown 17 years ago, I guess before this whole thing became a festering problem or people heard about it. I live two blocks away from the BOCES school that you mentioned, a half a mile or 11 blocks away from the Grumman and Navy facility, and naturally I'm concerned about what I have been ingesting in one way or another during the past 17 years.

Just as an example, I love to grow vegetables and fruit trees on my property, and I thought I was doing a great job of keeping myself free of contaminants, and the question is what have I been absorbing through my produce as a result of this?

But that's not really my question. My basic question is, when I bought the house nobody told me that there was any problem, not the real estate agent, the attorneys, the town, the county, nobody said a word about any of this, although possibly by then they knew some-thing about it, so I plunked down my money.

Now if I want to sell my house, how does

that affect what I am going to be able to sell it for, and naturally I will have to explain to buyers that there is a problem. I'm not going to hide that. In fact, I suppose there's a law that says I must, and I'm willing to obey that. So that's my question.

MR. COWEN: Your concern is-- it's an area that's rather gray, quite frankly.

MR. ELLIS: It's what?

MR. COWEN: It's rather gray, as far as how I can answer your question.

Technically speaking, there is no defect in your property. The plume may be passing, I don't know exactly where your house is on a map.

MR. ELLIS: Satellite Lane, it's on the map.

MR. COWEN: Okay. But let's say, for instance, that it's over the plume, for the sake of argument, I don't know whether it is or not, there's no exposure pathway for you to come in contact with that contamination that's in the ground. Therefore, there is no technical defect in your property.

However, and I'm not addressing this next

comment about this particular facility, but all across Long Island and the United States, for that matter, from time to time when sites like this facility and other sites that have problems with the groundwater, there has been a public perception that there's a problem with resale of real estate. Never mind that there's no real effect, there is a perception of a problem, and that, in itself, sometimes is enough to drive real estate values down.

Usually it's a very short-term issue. When people become aware that there is, in fact, no problem physically associated with that contamination, the public perception issue fades away and it's not a huge issue for people. I've seen that happen right in the very community that I live in, in Stony Brook, where there was a huge gasoline spill in 1987, and when it was discovered the contamination is in the ground like 120 feet below the surface. Once again, no direct impact on property values.

However, the people who owned homes in the immediate vicinity of that site, because the media carried stories about it, for a number of

years it was extremely difficult to sell property in that area. Today it has absolutely no effect whatsoever on the real estate values in that area.

So I don't know whether there's that kind of a perception in the real estate community here in this community, but I can tell you that there is no physical problem, no physical defect with your property that should affect the value, quite frankly. There's no other answer that I can give you beyond that, unfortunately.

MR. ELLIS: The gentleman who spoke before mentioned, for example, BOCES school. Now, I can throw a baseball from my house and land it in the BOCES school yard, and I know water doesn't really adhere to county lines or state lines or any kind of lines that are drawn by planners, water just flows. So that it's hard for me to agree that I have no contamination on my property, unless a test is made.

And so I wonder whether the town, the county, somebody, could arrange that, before a sale is made, or when it's contemplated, that a test is made of the property and an affidavit

issued that it is or is not contaminated that the homeowner has to give to the potential buyer. I think that would be fair.

MR. COWEN: Well, actually, I don't believe there's any reason to do that, quite frankly, with respect to this particular site, there just isn't.

The areas around the facility that were thought to have the potential to be impacted, for instance, from a surface deposition of contaminants, were tested and there was no problem found. Areas where you live, I think are too far from the plant site itself to have any surface contaminantion from whatever went on at that facility, and there's absolutely no way for your property to be contaminated by what's in the ground 100 or 200 or 400 feet below, it's just not possible.

MR. ELLIS: Thank you.

MR. BATES: Let me add to that a little bit.

We frequently get questions from not only realtors but prospective purchasers of property about what might be on the property, or what the

effects of a nearby hazardous waste site might have on that, and certainly if you go to sell your property and you have a prospective buyer who asks questions, by all means have him call us and we'll walk him through the process, as far as whether we believe there are or are not expsosures associated on that property.

So it's something we do fairly frequently, it's not a strange issue to us. Certainly give us a call if that situation arises.

MR. SCHARF: I would just like to add one think. I assume that the BOCES, which is right here, your home is probably situated right in here.

MR. ELLIS: You're pointing exactly at my house.

MRS. HOBBINS: What street?

MR. ELLIS: It's on Farm Edge Road.

MR. SCHARF: What I was referring to in the answer to the question before, when I was being question about the wells that were sampled with some inorganics in it, there's a series of monitoring wells up in this area, and what I was

talking about was contaminanation in ground water that is 50 to 60 feet below grade in the watertable, not in the surface soil. So I want to clarify that.

And, also, these wells in this area are all sampled, there are several wells that are sampled here on a quarterly basis for the monitoring program because the containment wells are all-- one is here, one is there and one is here, one is there. So the results from those samples will be made available, there in the library, if they aren't there now, they will be placed in the library and you can look at those, locate those wells on a map and look at the results of what was found.

MR. ELLIS: Will that tell me where my water is being drawn from?

MR. SCHARF: Do you have a private well to water your grass?

MR. ELLIS: I have no private well, no, I'm using the Hempstead town water, the Levittown community water, wherever it comes from.

MR. SCHARF: The health department has a

map for that. They can help you after the meeting if you want to.

MR. GILDAY: Certainly if there are any water problems, your particular file would be available from your particular water district that provides water for you. So certainly that's data that's available that we can give to you.

MR. ELLIS: Thank you.

MRS. NILSEN: My name is Janet Nilsen.

How come you're not talking about the Levittown water and you're only talking about Bethpage? Because Levittown is like right there, too.

MR. SCHARF: Bethpage is foremost in the plan because they already have treatment in place that was required as part of this project and that was paid for by Grumman and the Navy.

However, one of the integral parts of this program, under that term "long-term monitoring," and also it covers outpost monitoring, and any additional municipal supply wells that might be affected in the future, and in fact this afternoon we had a meeting with all

those suppliers that might possibly be affected by this at some point in the future, and what we are going to put in place is a program to make sure that any well that might be affected will have treatment before it ever does get affected.

And a key for you to remember is that all the water supplies in Nassau County are sampled on a routine basis, and if you have any detailed question, you can talk with John Lovejoy and Bruce McKay, they have that information, not with them, but they can get that for you.

MRS. NILSEN: But Levittown hasn't been treated at all yet is what you're saying?

MR. GILDAY: They have not been impacted, they have not been affected. It's not moving in that direction.

MR. SCHARF: You can contact your supplier, okay, and you can ask them for the results, and they must supply it to you.

MRS. NILSEN: I'm not in that area, I'm north, and Satellite is north of Hempstead Turnpike, closer to Grumman.

MR. SCHARF: Right. Well, you're somewhere right in this neighborhood.

MRS. NILSEN: I want to tell you if your websites are like your maps, we can't even read it, it's like useless. You know, this is like ridiculous.

MR. SCHARF: Well, you know what the problem is here? You look at the size of the area, you've got the Navy site, up here the Grumman site, and then the Ruco facility here.

MRS. NILSEN: If you would have made this a whole page, it might have been a little more legible. I've got a lot of your material, one of them has a legend, with a key, and only one. We have all these legends, we don't know what they mean.

MR. SCHARF: In the proposes plan, there's more detailed picture, but I think your best bet is to go to the library. I know people do that, but unfortunately--

MRS. NILSEN: I know people have done that, but they had trouble getting it; but I haven't gone, so I'll have to try.

MR. SCHARF: You can contact Mark Lowery, he can direct you to where to go, he can refer your questions to me if there's certain specific

information you need; you can send it to me.

MRS. NILSEN: Where is Plant 6 on there? Is Plant 6 on there?

MR. SCHARF: I'm not sure which--

MRS. NILSEN: I can't find it. I only have the two big ones, Plant 2 and Plant 3, I can't find Plant 6. You were saying it was treated. They said Plant 6 is the one that was leaking; right?

MR. SCHARF: Bethpage Water District Well 6 is right here, and that has two problem wells.

MRS. NILSEN: I just want to circle it.

MR. SCHARF: Sure. That's right here.

MRS. NILSEN: Okay, thank you.

MR. SCHARF: If there's any misunder-standing on your part, or you require more information, we want to get that information to you; believe it or not, that's the case. And if you contact us, you--

MRS. NILSEN: I just find it very hard to read most of the stuff that I get. I got three things from you, I guess they're all your news-letters, not one of these has something that I can understand and interpret.

MR. COWEN: You know what, I agree with you.

MRS. NILSEN: I have a question for you, Bill.

You were saying statistics on adults, how many adults get cancer in their life. How about kids under 18; do you have any statistics on that?

MR. GILDAY: Yes; all the cancers have to be reported in New York State regardless of age.

MRS. NILSEN: Yes; and you should have some statistics about our area.

MR. GILDAY: Right, yes. They're available, and in fact we've recently released cancer maps for that area.

MRS. NILSEN: And how do we get those?

MR. GILDAY: They're on the web, they are at www.health.state.ny.us.

MRS. NILSEN: Because I could tell you, we have a very small school district, I can tell you five kids off the top of my head right now being treated, and that's a scary thought. We have a very small school district, under 16 years old. So that's what my concern is.

MR. GILDAY: If you jotted down that 1-800 number, let me give you another number and they could tell you if there's actually smaller incidence investigations that are going on.

MRS. NILSEN: I've actually gone to the high schools, and the oncology nurses have told me that we have a good area; a lot of their kids that they treat are from Levittown. So that was a pretty good source.

MR. GILDAY: Did you take down the one I gave you?

MRS. NILSEN: I have yours at home.

MR. GILDAY: Let me give you an extension. I gave you my extension; if you do extension, that same 800 number, extension 27950, and you can ask them about specific studies, local area, small area studies where there's unusual disease patterns where the health department has looked into those areas.

MRS. NILSEN: And so our area in Levittown has not even been addressed to try to decontaminate yet. So we're talking long-term.

MR. GILDAY: It's monitored regularly. We're addressing places that have contamination.

MRS. NILSEN: Thank you.

MR. SCHARF: Or potentially will be affected based on the groundwater monitoring of gradients. For instance, at Bethpage 5, there's treatment in there, and only once in its entire history did it find a two part per billion level of TCE, and since that time it's always been non-detect. The district runs the strippers anyway to make sure that it's a non-detect, safe water supply. And I can't emphasize that enough.

MRS. NILSEN: Okay.

Well, I've always said for a long time, since I've seen the incidence in our area, that there is some kind of contamination. It could be our power lines, everything else, who knows? I don't plan on staying around here.

Thank you.

MR. SCHARF: Thank you.

DR. CARLEY: My name is Dr. Rebecca Carley.

Mr. Sadowski and I wrote a 92 page comment with exhibits, which we submitted to the E.P.A., and it's available in the administrative

record files at the Hicksville Public Library and also New York City if any of you would like to look at it and see how all of these questions are being ignored and covered up.

Now, Mr. Gilday just said that Levittown is not affected, as the plume is not moving in that direction. I assume you're talking about the vinyl chloride plume, Bill; is that correct?

MR. GILDAY: No, I'm referring to the flow components of this Grumman-Navy plume that we're looking at here, the TCE plume. If there's a flow component and we're looking at more monitoring and making sure that there's no flow component, and if there is in that direction, they're covered, as Steve mentioned, because there's a treatment contingency plan. Should any wells in Levittown otherwise become affected in the future, there will be a plan in place to put the treatment on there necessary to get some alternative water supply.

DR. CARLEY: Okay. If the contaminants go down to 800 feet, isn't it true that the Lloyd's Aquifer, which extends from Queens to Montauk, is being contaminanted with these

chemicals?

MR. GILDAY: That I don't know, because the extent, 800 feet, at that depth there is a Raritan clay unit, and I'm not a geologist, but I can tell you there is a unit that prohibits transfer of contaminants between where we know the contamination to be and the Lloyd Aquifer.

MR. SCHARF: If I could be more specific on that question.

I think what you're asking, is there contamination in certain places in the Lloyd Aquifer? We haven't found that on this site yet, and we got down to that clay that Bill mentioned, and we just did two borings down to that clay on top of the Lloyd Aquifer.

DR. CARLEY: Well, isn't the Lloyd's Aquifer one contiguous aquifer which extends from Queens to Montauk?

MR. SCHARF: But you got to remember the groundwater direction, it's not in the way in which you're thinking.

MR. COWEN: The Lloyd Aquifer does not exist in the eastern part of Long Island, for one thing, and it's not a continuous aquifer,

actually there is no, technically speaking, continuous aquifer in Long Island, because it's not homogeneous; there are various layers and lenses of clays that tend to isolate parts of the aquifer from other parts of the aquifer. Furthermore, the flow directions on Long Island are north and south, there's no east-west flow component in the aquifer system.

DR. CARLEY: Would you put this transparency up, which is your own figure 4.2, which shows the Lloyd's Aquifer extending from one area to the other; which is Exhibit 2 in our submission.

MR. COWEN: That is a cross-section of Long Island, a north-south cross-section, and it has nothing to do with going to Montauk. That shows you from Long Island Sound south to the Atlantic Ocean, which shows a cross-section of the Island, presumably up in the westerly section where there is a Lloyd Aquifer.

DR. CARLEY: And you are saying that contaminants have gone down to the Lloyd's Aquifer in some areas that have been tested; is that correct?

MR. COWEN: We're saying I don't believe we've penetrated the Raritan clay in this area to see whether or not there's contamination in the clay.

DR. CARLEY: Okay.

MR. SCHARF: Could I just ask you why you're honing in on the Lloyd Aquifer, as opposed to more important aspects of this project?

DR. CARLEY: Well, because my point is that the chemicals are going to continue to go down; I mean it just makes sense, they're going to keep traveling south, and eventually they are going to get into the aquifer; I'm sure they are in the aquifer even if they're not being admitted to be in the aquifer, it's just pure common sense.

MR. SADOWSKI: And her point also shows clear and directly, you people have said how far and deep the wells are, at 600 and 800 feet, as it's written in the minutes of the last hearing, okay, the Lloyd Aquifer in dark green at the bottom of that map clearly shows that you are drilling contaminants outside of the Lloyd

Aquifer. As the Lloyd Aquifer runs from Queens out east to Riverhead, it is clearly contaminated; there are 400 superfund sites that are contaminated by the same chemicals which will be read in two minutes.

MR. COWEN: Listen, the Lloyd Aquifer is a confined aquifer, there is an aquaplume just above it; and yes, we know that at certain locations in Nassau County there is contamination in the Lloyd Aquifer, I'm willing to stipulate to that. So what's your point?

MR. SADOWSKI: The point is all of Long Island is contaminated, contaminated by Grumman and the Navy.

MR. COWEN: That's absolutely untrue.

MR. SADOWSKI: It's so untrue as you being here.

MR. COWEN: You know what? Now you're making statements, why don't you do that in the next section? You're not asking questions, you're sort of lecturing.

DR. CARLEY: Okay. I would just like to ask, is the only chemical being addressed presently the vinyl chloride, which is being

addressed by the biosparging which you've been proposing in the newspaper, etc.?

MR. COWEN: No.

MR. SCHARF: Let me give you a little more-- more of an explanation of what you're referring to.

The vinyl chloride or the VCM, that's a--

Mark, could you put the projector back on?

The Ruco polymers facility discharged pure vinyl chloride in the recharge basins from the late '50s to the early '70s. It was mixed in with their other wastewater discharges out to their recharge basins located on-site. And that's right up in this area, it's right in the Ruco Polymers.

Now, vinyl chloride was not the only contaminant that Ruco discharged basically out the back door; there were a number of con-taminants of concern there. Most of those have now migrated off-site from the Ruco facility onto the Navy and the Grumman property. One of the reasons for that is that, in this area, during their zenith, the high point of

production, the groundwater wells on the Grumman property drew that groundwater over to the east, so it comingled the plume.

Now, in 1998, we split off the ground-water, regional groundwater feasiblity study with EPA for Ruco and D.C. took over Grumman and the Navy. The feasibility study that you're referring to, that you commented, on and the proposed plan issued by the EPA, which subsequently became a record decision, is for the off-site groundwater component of the Ruco facility. That remedy selected the biosparging, which is found to readily break down the vinyl chloride found in the groundwater to a pretty good depth, I think 3 to 400 feet to the south, southeast of that plan.

In addition to that, the remainder of the contaminants are going to be picked up by the on-site containment system on the Northrup Grumman facility. E.P.A. will be going into negotiations with Occidental, the former owner of the Ruco facility, they will sign a consent decree, and if they refuse to sign that, we'll issue what's known as a unilateral administra-

tive order, to bring Occi to the table to deal with that, and they have already agreed to do that.

In addition, that brings them as, even though that's something that has to be worked out amongst the parties, that they're partly responsible to continue to maintain that containment system.

So vinyl chloride is not the only contaminant from the Occi site; we're dealing with the other contaminants from the Northrup Grumman Navy site, that, through the containment system, through the offsite groundwater recovery system, and through the monitoring system to make sure it never affects any other water supplies.

DR. CARLEY: So you're containing them, but you're not getting rid of them, the other chemicals.

Would you let me just mention some of them. Trichloroethylene, tetrachloroethylene, dichloroethylene, dichloroethene, trichloroethene, dichloroethelene, hydrocarbons, polychlorinated biphenols and semi-volatile

organic compounds. These are all listed in your own report as contaminants which are in the water, they all cause cancer.

Why is not more than containment being done?

MR. COWEN: The word "containment" is being used to describe the fact that no more of those chemicals are being allowed to migrate off site in the groundwater regime. They are, in fact, being removed from the groundwater, treated through a stripper system, and as you heard before, the vapor phase of that stripper is being further treated with activated carbon so that none of those chemicals are being discharged to the environment, they are being removed from the groundwater.

DR. CARLEY: Okay.

MR. LISA: I'd like to know-- well, actually, what I wanted to get to before, throughout the program before, 50 parts per per billion was considered the risk, the permissible exposure level back 25 years ago, and since then the number has been moved down to five parts per billion. How do we know in five more years it's

not going to be down to one part per billion, and exactly how many different toxic chemicals are we talking about the water being contaminated with? I hear so many numbers being thrown around tonight, and everybody likes that catchall VOCs, which seems kind of harmless, but how many different chemicals are we talking about in the water?

MR. BATES: I think, as far as the offsite groundwater plume, which is the subject tonight, we're looking at 3 or 4 or 5 VOCs, I'm not sure of the exact number, but they're very similar compounds and basically they're outlined, I believe, in the graph.

As far as the second question was the standards. Standards are always under review, so I can't guarantee that they won't go lower in the future. Certainly it's always a possibility. The current technology has resulted in the the current standard of 5 micrograms or 5 parts per billion for those VOCs.

MR. LISA: Again, if it is only 5 that are in the water, then why hasn't the information on these five chemicals been provided in

more detailed form, including, while the level might be below the 5 parts per billion, is it 4, 4-1/2?

MR. BATES: Are you talking about the water quality?

MR. LISA: Any one of the five different chemicals that you say are in the water

MR. BATES: You're talking about the water being supplied.

MR. LISA: Right. What purity is it?

MR. BATES: Certainly, I think they're very low and non-detect. That data we'll get for you from the water suppliers, we'll make sure you're provided with that.

MR. LISA: You're saying there's only approximately five chemicals that are contaminating the water supply within this plume area?

MR. GILDAY: We're dealing primarily with T.C.E., basically 90 to 95 percent of the volatile organic chemical that we're dealing with is trichloroethylene, TCE. There are lesser concentrations of some related contaminants, dichlorethenes, some of the ethanes were mentioned and perchloroethene.

We have the data, as far as the water supply data, it's been non-detect, it's not detectable. We go down to less than a part per billion, we look routinely and it's not detectable.

MR. LISA: One other question that I had is how far exactly has this plume moved since you began tracking it back in the '70s, and to date, and how much further is it expected to move before you actually enact some of these plans that you're talking about?

MR. SCHARF: I think, if you take a look at the figure we have up here now, this shows you an approximate extent of the plume, not through all the groundwater straight down, but basically the most horizontal extent.

MR. LISA: Is it moving a mile a year, 500 yards a year?

MR. SCHARF: It's moving at about a foot and a half a day, but most of it now, this area is moving deeper, it's probably about .25 feet per day.

MR. COWEN: That's the groundwater movement.

MR. LISA: Actually I asked about the contaminated area, and is it spreading beyond this?

MR. COWEN: Yes.

MR. LISA: Can you guarantee that it's not spreading, and are these wells and test wells being moved out accordingly with the rate of movement of the--

MR. COWEN: The short answer is yes.

MR. SCHARF: In fact, the Navy has just indicated to me, as of Monday, that even before-- because they're being proactive on this project, even before we get a record decision that requires long term maintenance, they're submitting a workplan to us to install wells further down gradient to find beyond the edge of where the plume is now.

Now, keep in mind that what the remedy is calling for is containment of the site, treatment of the elevated areas in this location, and the rest is going to naturally be comprehesive monitoring of plume attenuations, which means we're cutting it off at the source and the concentrations, by themselves, will drop, and

eventually it's going to move away. That's going to take a long time.

This is the reality, we cannot deal with all of the contamination, because we just take a few. But when it gets down, eventually, to a low enough concentration where hopefully, eventually, it will work its way to being non-detect. And it will, in the Bethpage area, immediately clean up in the very immediate future.

MR. LISA: That's just our neighboring communities will have to worry.

MR. SCHARF: We have to monitor those five wells and make sure, upgradient to them, make sure that they're not be affected, and that's what all the different monitoring programs are involved in.

And keep in mind, too, in this presentation I did, as much as I really tried to get this computer program to work right, I tried to do it in a very general sense. There's so much information here, that it's very hard for most people to understand that, and the most important thing, let me reiterate, is that the

pathways of exposure are being monitored here and people are not being exposed to the contamination in the groundwater.

MR. LOWERY: We've been at the question period for almost an hour now; I'll take one question from each of the two gentlemen that are standing here, then we're going to cut off the questions and go to the commentary.

MR. SADOWSKI: Thirty years. Grow up. I have some questions here.

It took you 30 years to figure this out; we're the public, we have some questions for you to answer.

Will you drop that down a little lower? I want to show the public what the water line divide is.

My name is Joe Sadowski, Esq., again.

Right in the center, you see the highest point of the line that runs right from the top down into the bottom lower green. That's called the water line divide. That's approximately, supposedly, according to the record, a mile and a quarter away from the study site.

Now, the study site, which we're talking

about right now, is a place where there are chemicals, as the Board of Health just acknowledged that Dr. Rebecca Carley was correct in saying that there were other chemicals in there, approximately 113, according to professors that have looked at the chart in the State of Maine, which is the University of Maine.

Now, we'll go one step further. Being one mile and one quarter away from the waterline divide, which is the replenishing system for all of Long Island's Lloyd's Aquifer, is now being, as they say, polluted due to the fact that the heavy compounds, as they start to move, they lay and they lay flat, they start to move out. And as they drive outward in a circular area, as it rains, these contaminants run down into the waterline divide, there is nothing to stop it, as this gentleman over here says, there is a wall.

MR. COWEN: Sir--

MR. SADOWSKI: There are walls in people's heads.

MR. COWEN: Excuse me. You are sadly

misinformed about the geology of Long Island.

MR. SADOWSKI: No, I'm not.

MR. COWEN: Do you have a question in there somewhere, please?

MR. SADOWSKI: You're sadly misinformed. I'm speaking here.

MR. COWEN: What's your question, please?

MR. SADOWSKI: I'm the one that has a law suit against you.

MR. COWEN: What's your question, please?

MR. SADOWSKI: My question is why, number one, didn't the Board of Health, in 1992, put out an advisory to pregnant women and women who get breast cancer, when they had the complete study, and that study was dropped, put into the hands of the people, you people, when it clearly stated 100 percent that there were eleven chemicals that causes cancer, and each cancer, these cancer-causing elements, which has been proven in laboratory rodents, okay, was never given to the general public to go by bottled water. But bottled water can't help; can it, sir, because they take showers. And when you take a shower, your skin opens up, and you know

what, when your skin opens up, all those chemicals go inside of you, because your pores are now opened up, that's why you say breast cancer; a woman stands in front of a shower with their breasts first.

MR. COWEN: Where is your question?

MR. SADOWSKI: The question is why was it not reported to the people on Long Island that there were chemicals inside this water that causes cancer for each and every one of the people on Long Island. And why, number two--

MR. COWEN: Let me answer that question, please.

MR. SADOWSKI: Number two-- go ahead, answer.

MR. COWEN: To the extent that any water supply on Long Island has chemicals in it, those results are routinely available to the public. And I can tell you that right now there are no water supplies on Long Island serving water to the public that has contaminants in it, period. It does not happen.

Next question.

MR. SADOWSKI: Long-term is equivalent,

then, equivalent to walking into a situation and getting one good hit of anything; long-term exposure, and it takes long-term exposure to show and prove; doesn't it, sir?

MR. COWEN: I'm not following your line of reasoning.

MR. SADOWSKI: That's the question; does it or does it not?

MR. COWEN: Does it or does it not what?

MR. SADOWSKI: Long term exposure.

MR. COWEN: What's the question?

MR. SADOWSKI: The question is if you're taking these chemicals, these contaminants and you're wearing them by going into the shower and it gets into your system, does it not take long-term to get into your system before you get sick?

MR. COWEN: If you're asking me does cancer have a latency period, absolutely it does.

MR. SADOWSKI: It does; thank you.

MR. COWEN: But I'm telling you that there's no public water supply on Long Island serving water to its customers with that con-

tamination in it, period. It doesn't happen.

MR. SADOWSKI: Do you know how many times water companies have told everyone that there is a problem, please boil your water? You know when you boil that water it makes those chemicals more intense, they cannot come out?

MR. COWEN: The boiled water thing has nothing to do with chemical contamination.

You know what, you're not only sadly informed about geology, you're sadly informed about chemistry.

MR. SADOWSKI: What is your--

MR. COWEN: If you'd like to speak with these gentlemen about the safety of the water supply in Nassau County, they can provide you with the data.

MR. SADOWSKI: What's your name?

MR. COWEN: My name is Ray Cowen; I'll be glad to give you my card.

MR. SADOWSKI: OK, I want it.

And where do you do work from and out of?

MR. COWEN: I work in the Stony Brook office, I'm the Regional Director for the New York State Department of Environmental

Conservation.

MR. SADOWSKI: Right; I love it.

MR. COWEN: Can we move along? You've had your point.

MR. GIARDINA: My name is Michael Giardina. Good evening.

The question I have is has Northrup Grumman and the Navy fully disclosed any and all contamination, storage of chemicals that they are aware of and sent it to the D.E.C?

MR. COWEN: Did you say storage?

MR. GIARDINA: Storage, use, any and all areas of contamination, chemicals, storage of chemicals, or anything in that general line, making full disclosure.

MR. COWEN: Steve explained a little bit tonight about the two different programs that we have in this agency with respect to the use and storage of chemicals and then the clean-up of those chemicals that happen to get into the environment.

The program that we regulate the use and storage of those chemicals under is called the RCRA Program; Resource, Conservation and

Recovery, RCRA. That program has evaluated this Grumman facility and the Navy facility with respect to the buildings where the chemicals are used, and all of the various use areas have been investigated and, quote, unquote, closed. That is, they've been investigated, to the extent the problems were found, they were fixed, remediated, and I believe the RCRA closure is done, it's a done deal at this time; right?

MR. SCHARF: That's correct.

MR. COWEN: So that part of it is over with. So the answer to your question, I believe, is yes, they not only disclosed areas that they said they used these chemicals and what they were, and we went in and checked all the buildings and made sure that everything was cleaned up properly.

MR. GIARDINA: The only other question I would have then is why, as recently as three months ago, the new construction that's going on in those sites that have been sold, etc. have there been discoveries of in excess of 200 fifty-five gallon drums of contaminated materials and toxic waste that one of Grumman's

representatives show up at the site, they show up with paperwork indicating, oh, yes, there's 200 buried over here and there's a sewage treatment plant that was abandond, buried over there.

If full disclosure was given, then why haven't those chemicals been removed out of the ground, which are now still seeping into the ground water?

MR. COWEN: Actually, I'm not aware of that. I don't know if anyone here from Grumman--

MR. SCHARF: Unfortunately, the person from the RCRA program that issues the active permits for the facility is not here tonight. And I think-- are you referring, in our discussion we had last week, about the location you said that they were digging and drums were uncovered in parts of the Grumman property?

MR. GIARDINA: Not only drums. Not only drums. There were numerous sites, numerous different area locations.

MR. COWEN: But not on the Grumman property?

MR. GIARDINA: On the Grumman's property,

or what was owned by the Grumman or part of the Grumman property.

MR. SCHARF: It's not uncommon, if you're going to dig somewhere around a former airport, let's say you find a 55 gallon drum, it may have been used as a marker for the end of a runway or whatever. Or even that maybe there were some areas, from past disposal practices, that haven't been quantified when we thought we had everything done.

MR. COWEN: Let's see if anybody from Grumman or the Navy wishes to comment about this.

MR. SCHARF: I am not familiar with anything about 200 drums as of three months ago.

MR. LESKOVJAN: I'm Larry Leskovjan, I'm the manager of safety at the Bethpage Grumman facility.

I'd like to know what you found out. We're not aware of what you claim as far 250 buried drums.

We are aware that on one of the plant sites that we were cleaning up, probably about a year and a half or two ago, that there were some

drums that we found in conjunction with some of the clean-up that we were doing; it turned out that those were drums that had been left by Pittsburgh Plate Glass at that facility when they owned and operated before we bought it.

MR. GIARDINA: No, sir, I'm talking about construction that is underway right now on sites that were sold by Grumman to individuals, that as they excavate they are bringing up contaminants.

MR. LESKOVJAN: I'm not aware of that. I mean, before we had sold the property, we did our own environmental assessments to determine what was there, if there was anything that was there, we cleaned it up.

MR. GIARDINA: Thank you very much.

MR. LESKOVJAN: You're welcome.

MR. COWEN: Can I just say that, you know, you seem to bring up an interesting thing here. If you have actual information specific about that, if you could get that to us, I would certainly appreciate it.

MR. GIARDINA: The unfortunate thing is it's been reported a number of times, a number

of times. I'm not saying it was reported to you directly.

MR. COWEN: I'll give you my card. If you want to call me on this--

MR. GILDAY: I'd be interested in that information, the Health Department certainly.

One of the things that we've done, in part, when we knew there was a groundwater contamination problem, we wanted to know where was this groundwater contamination coming from. We did source area investigations all across the property, the Navy and Grumman's different parcels. Two of those ways that we do the source area investigations are soil vapor analysis; the types of chemicals we're looking are very volatile, you can punch holes in the ground and you can actually test and see if there's vapors. You're going to be able to find where those contaminants are, because they give off vapors, and this is a way of honing in on the source areas, because we don't want to just treat contaminated groundwater if the source is still out there. We want to treat the contaminated ground water and get the source to get rid

of it once and for all. That was one method of what we call source area investigation.

The other method was monitoring those. We had the contaminated monitoring wells, knew they were there, well, let's back up, start going upgradient until you find the source. You can hone in on the source areas of contamination. And because of those investigations, a number of different areas across the Grumman and Navy parcels were remediated, we found the source areas of these chemicals.

This is something that we use to hone in on these source areas. Other things that were mentioned are soil investigation. Thousands of soil samples had been done across this property. If areas were found, they were cleaned up. When they were cleaned up, we said take more samples, make sure it's cleaned up. That's endpoint sampling, you make sure you go far enough to end the remidation and make sure you've got all the contamination.

Through all those areas of investigation, we believe we've honed in on all the source areas. If there were buried drums, I can tell

you that they're not a significant source of contamination to the groundwater or to the vapors.

So that's one main-- maybe there are empty drums, certainly if you have that information, bring that information forward, we'd like to see that. But I do want you to know that we did an extensive source area investigation to find these pockets of contamination that might be out there, be they buried drums, be they spill sites, whatever.

MR. SCHARF: Under the two programs, Grumman was made to do extensive soil gas and soil samples around the entire facility, much more even than when most industrial facilities were transferred under a routine sale. And they did quite-- in fact, I don't have the map here, but there's an extensive map where all the testing was done, and we identified those areas that are problems and we're having them addressed.

MR. COWEN: Okay, we're going to have to move on to the comment period.

MRS. HOBBINS: I have to ask a question.

MR. COWEN: One quick question, that's all I'll allow, because it's now 9:25.

MRS. HOBBINS: Okay. The Lloyd Aquifer, you did say that it was contaminated.

MR. COWEN: In certain places in Nassau County I believe there's contamination in the Lloyd Aquifer.

MRS. HOBBINS: Okay. I was led to believe by members of the EPA that if the Lloyd Aquifer is contaminated, there is no remediation, that's it. We cannot remediate the Lloyd Aquifer. If that's the case, all of our water is doomed.

MR. COWEN: No, that's not the case at all. That's why you need to know something about geology before you start making statements like that; that is not the case whatsover.

MRS. HOBBIBS: Well, is it true that-- can it be remediated? Let me ask that question.

MR. COWEN: Sure. Anything can be reremediated. What happens is that when the Lloyd Aquifer gets contaminated, it usually, and as far as I know, this is the case, very, very minute quantities of contaminants can ever make

it down to that aquifer, because of all the different layers of confining material, which is very fine and very difficult for contaminants to migrate through.

The Lloyd Aquifer is what's known as a confined aquifer, there is an aquatard or aquaclude, which is a fancy name for clay, over the top of the Lloyd Aquifer which pretty well protects it from above.

It is true that it does get recharged from water above at a very, very slow rate. I don't remember the exact numbers, I once knew these things, but it takes something like 4,000 years for the water to get down into the Lloyd Aquifer, I don't know, something crazy like that, it's a lot, a of lot of years for that water-- the water that you find down there is extremely old water, because it takes that long to get there, because the path is so tortuous to get to the Lloyd Aquifer.

By contrast, the Glacial Aquifer is young, like we are. I mean, it's a matter of decades, that water comes down and runs to the Sound or to the Atlantic.

MRS. HOBBINS: I would like your card, because I was told by the E.P.A. that the Lloyd Aquifer is not contaminanted, so I would like your card so that I can make a statement to them.

MR. COWEN: I can give it to you.

MR. SCHARF: Can I just say, also, that there are members of-- the people that you probably contacted from the EPA who are here tonight, that the EPA probably that you had this discussion with, with the Hooker Ruco project.

And please keep in mind that what we showed you with respect to this project, we have a very good handle on where the contamination is and the concentration of those contaminants. We don't know it all, we still have to do some further delineation. We have enough information here to properly screen alternatives, to make sure that human health and the environment are protected.

Despite what Mr. Sadowski might say, I happen to disagree with his statements, and I also agree with Ray Cowen that he's slightly misinformed on the geology. But we will take

the time to explain that to him if he so desires as to what the facts are.

MRS. HOBBINS: I'm just concerned about the Lloyd Aquifer and what I was told.

MR. SCHARF: Can I ask you one question, and then we end the discussion.

Why this one concentration on the Lloyd Aquifer, when the aquifer of maximum concern is the Magothy, where the drinking water is?

MRS. HOBBINS: We know that the Magothy has been contaminated, that we know from other sites that I've worked on. But I have been told time and time again is that the Lloyd Aquifer has not been contaminanated, and if it ever is contaminated, we're in trouble. Where, in fact, one man said we're doomed, and that scares the hell out of me, so I'm going to check this out.

MR. COWEN: That's not true. My statement about the Lloyd being contaminated has to do with certain wells in Nassau County here and there that are showing extremely minute traces, and the likelihood is that those traces of contamination have come from the well itself in its penetration down through all those layers;

the casing itself is not a perfect seal, and sometimes the well will draw contaminants down along the casing. I don't know if that's the case or not, maybe these guys can shed some light on it.

MR. LOVEJOY: John Lovejoy, Nassau County Health Department. Just some general statements about the water supply.

There have been a lot of questions about the drinking water supply, and maybe I should just try to clear a few things up here.

First, you know, I'm not quite sure what the obsession with the Lloyd Aquifer is either. There are no drinking water wells in this area in the Lloyd Aquifer, so even if it did become contaminated, that's not where we're drawing the water from; there's just a few on the south shore and a few on the north shore that get their water from the Lloyd.

I think what the E.P.A. person might have been saying is that-- because we know there's little to no contamination in the Lloyd Aquifer, and what Ray was saying, to my knowledge, is the only contamination we know of, up in Manhasset

area there was a well where the casing was cracked, and at a much higher level there was some contamination in the glacial area inside the casing, it wasn't being drawn down through the aquifer and through the Raritan clay into the Lloyd. It went in the casing, it went down the well. We took a sample out of the well, and that was contaminated. They repaired that well, and that doesn't happen; now we take samples from that well and it's clean.

You know, just in general with the water supply, again, the water is routinely tested here in Nassau County, and, you know, we've heard some things about people worried about the standards are high, but what if they lower it? It should be known that the treatment being used in Bethpage now does remove any contamination if one wellhead needs it to a non-detectable level.

Bethpage has pretty much made it a policy not to supply water to their customers that has any detectable contamination in it of VOCs, so, you know, that's their policy. Could they have contamination up to 4 parts per billion, or five? Yes, they could, but they've decided not

to. More power to them. And that's the policy they intend to continue to do. So their water is safe to drink.

Levittown we've heard about. No contamination has reached the Levittown wells yet. The plume is moving somewhat more in an east direction, so we haven't picked up any contamination in Levittown wells. It's going to be monitored, you know, the width of the plume is going to be studied further, and, you know, we'll act accordingly, but right now Levittown wells have not had any contamination, and if they did, the same thing as Bethpage, you've got to put a stripper on it and you've got to treat it down to very strict levels.

So, what I'm trying to say is your drinking water is safe here, and I think that's why we're getting into a lot of questions about why wasn't I notified and this and that. You're notified if there's an exposure to you. As far as your drinking water goes, that's the one area where you do have to be notified about the quality of it whether or not there is an exposure, you get a yearly water supply state-

ment in that thing, and now it's called Consumer Confidence Report, it comes out, I think, in the middle of the year, that tells you exactly what's in your water.

So, to the gentleman who said he's not being notified about his drinking water, you are. It's been a law for about ten years now, and it comes in your bill. So, as far as the drinking water goes, you are notified.

As far as the site goes, you know, maybe there can be better notification. I think the website is a great idea, maybe the D.E.C. will look into that. But your drinking water, which is what could impact your health, is being tested, it's safe to drink, you are notified of the quality, and, you know, I just hope everyone leaves here understanding that you're not being exposed in your drinking water to any of these chemicals. I just don't know how to be more clear about that.

I'll be happy to talk to anybody after this meeting, you know, who wants to know what's exactly in your water district. If it comes down to it, we'll test your house. You know,

your drinking water is safe, I feel totally confident in telling you that.

I don't know, is there anything else I should say about the drinking water?

MR. SCHARF: I couldn't have said it better.

Thank you, John.

MR. COWEN: Okay, at this point I'm going to--

MR. SADOWSKI: I have two more questions.

MR. COWEN: I'm sorry, sir, we are way past the time, it's 9:30, we have to get out of this building by 10:00 o'clock.

MR. SADOWSKI: Why are there no PVCs listed in the water? There's no pesticides listed in the water. Why is it in your own Federal Report it states that?

That's right, shut it down, boys. I made my point.

MR. COWEN: The question and answer period is over.

MR. SADOWSKI: I made my point. They're fraudulent reports.

MR. LOWREY: I have several cards here,

people who indicated to us they wish to make a formal comment for the record.

I'm going to dismiss these gentlemen and ask them to go sit with the audience. I'm going to call out these commenters in the order in which the cards were handed to me. If any of you who have not handed in a comment card and wish to make a comment, please hand one to Mr. Fonda.

The first commenter, each of you will have three minutes, Mr. Willis Carman. Please come to this microphone, please address the court reporter, and I will turn on the electronic recorder.

MR. CARMAN: My name is Willis Carman, Jr., I'm the attorney for the South Farmingdale Water District.

I'm here just to observe that the Commissioners of the South Farmingdale Water District are here, Mr. McCormack, Mr. Atoria and Mr. Hirt; we're also here with our consulting engineer Garry Loesch from H2M.

I want to notify you that we have retained H2M and Gary Loesch to review the PRAP,

and we will be submitting a formal response to the PRAP to make sure that you address all of the considerations that we have with respect to any migration of the plume south of Hempstead Turnpike, as it may affect the South Farmingdale Water District.

Thank you very much.

MR. LOWREY: Thank you.

The next commenter is Michael Gardina and following him will be Rose Covers? I apoligize. You don't wish to comment?

Then following Mr. Gardina, and I apologize for any names I've mispronounced, will be Frank Signorella.

MR. GARDINA: First off, again, I'd like to say thank you, and for the record I would like to commend the Bethpage Water District for their involvement and their diligent efforts in trying to protect the public.

The statement that I would like to have for the record is I do not agree with the phase that's being proposed. I do not feel the public has been given sufficient time to review a compilation of approximately 25 years worth of

records and testing when it was just brought to our attention that they were available for review last week, and in order to comment intelligently, we've only had approximately seven days to review those documents, which, at the Bethpage Public Library, are kept in the basement in numerous, numerous boxes, which I viewed.

But, again, the most important part is I did want to commend the efforts of the water district.

Also, the speaker had stated that there has been no one affected by the contamination. I feel that that is not a proper statement that you should be making at this point in time, because of the fact that all the results are not in.

Thank you.

MR. LOWREY: Mr. Signorella.

MR. SADOWSKI: He's passing.

MR. LOWREY: Mr. Sadowski, and then, following him, Dr. Carley.

MR. SADOWSKI: I believe that the situation is a little out of control and there's

an easy way to fix the situation, and it would be the intake of everybody's home water system, a computerized water system.

You guys want to take 15 or 30 years to fix and repair it, it can be repaired one, two, three, cheaper and at a lesser cost by doing this. It costs us a lot of money to have filtering systems put in, aerators, air strippers put in, that the public has to pay for, that they are now using to say that it is going to clean the water of the chemicals.

At this time, I declare that there are 15 days needed, after the transcripts are ready, for the end of the public comment period. And at this time I propose that plan. There can be no reason why we have to have a public comment period closed on a certain date without having the information of this hearing.

Thank you.

MR. LOWERY: Dr. Carley.

Dr. CARLEY: I have no further comments.

MR. LOWERY: Mr. Caruso.

MR. CARUSO: My name is John Caruso, I'm a water commissioner with the Massapequa Water

District.

We just, in brief, this morning for the first time, although my fellow Commissioner, Frank Flood, and I have served on the Nassau County Department of Public Works and are thoroughly familiar with the plume, we at the Massapequa Water District do not agree with any kind of wellhead treatment.

We agree that the plume can be confined to the site which it's on; we believe that you should recover the plume and flow that are now probably down near Jerusalem Avenue and close to our northwest wellfield. We've gone through a similar problem with the Liberty site, and our position is clear on this.

And we also believe that there hasn't been enough modeling or testing done. We think that you must take your model to another extent, as we discusse this morning, we're very surprised that you hadn't contacted the Nassau County Department of Public Works, Peter Wiskowski and the wealth of information that they have there.

And we also want you to know that in the

1980s, I am old enough to remember that, we had to clean up the Purex site, which was very similar to this site. We did the on-site confinement, we did not allow the plume to migrate to Hempstead Turnpike, we recovered the plume, the cost in those days was 30 million.

We're not looking for any scallops. We believe that what was done here was done in the best interest of this country, to build Tomcat and put a man on the moon; however, what is left here, if it costs 50 or 60 million dollars, is insignificant in the budget and what was spent on this site.

We also request an extension with our fellow commissioners from South Farmingdale to afford us the opportunity to respond in writing to this.

Thank you.

MR. LOWREY: I want to mention that the comment period has been extended to January 22nd.

Does anyone else have any other comments?

(No response)

MR. LOWREY: Okay, with that, I will

declare this meeting adjourned.

I thank you for coming out tonight.

(Time noted 9:35 o'clock p.m.)