NJDEP SRP STAKEHOLDER MEETING
June 29, 2007

ATTENDANCE

Irene Kropp, NJDEP
George H. Klein, NJDEP
Barry Frasco, NJDEP
Kevin Schick, NJDEP
John Doyon, NJDEP
Wayne Howitz, NJDEP
John Donohue, Fuel Merchants Assoc.
Donna Rendeiro, OSG
Tony Russo, CCNJ
Mike Egenton, State Chamber
David Brogan, NJBIA
Frank Scangarella, NJEIT
Bruce Katcher, Esq., MGKF
Darryl Borrelli, MGKF
Adam Liebtag, CWA-1034
Adam Zellner, NJDEP
Tom McKee, ICO
Jane Nogaki, NJEF
Olga Pomar, SJ Legal Services
Judy Shaw, NJDEP
Bob Gordon, Assemblyman, District 38
Sheryl Telford, DuPont
Steve Senior, TRAC
Buddy Bealer, Shell
Jenny Liu, DuPont
Kate McDonnel, Assembly Office
Andrew Robins, NJBA
John Hazen, NJDEP
Kerry Kirk Pflugh, NJDEP
Ed Putnam, NJDEP
Jeff Tittel, Sierra Club
Linda Greenstein, Assemblywoman, District 14
Thea Sheridan, Assembly Office
Jorge Berkowitz
Alyssa Wolfe, Commmissioner Office
Mary Anne Kuserk, NJDEP
Marcedius Jameson, Land Use & Pesticide Compliance & Enforcement
George Klein, NJDEP

IRENE: Good Morning. We are going to talk about schools today. Don't have a set agenda, what we are actually going to speak about, but in light of the recent situation in Paramus where the West Block Middle School was found to be contaminated pesticides, we got involved in doing a soil removal there. There's additional investigation ongoing and some additional clean up, but it begs the question of what's out there in terms of historic fill issues, historic pesticide issues from agricultural activities, and also just from application of pesticides or termiticides.

Kevin [Schick] is going to do a presentation and then I would like to open up a discussion about what we think is some of the bigger concerns. Obviously children in the area could play outside and there could be soil contamination which is not acceptable. However, going to every single school in the state, sampling and digging up two or three feet of soil is also extremely expensive, and it may not be necessary.

John [Doyon] is going to present on dry cleaner issues looking at programs in other states where they tax the manufacturers of solvents to create a fund to be used for clean up of ground water contamination primarily and then we will hear about risk based corrective action.

KEVIN: I was asked to give a presentation on historic pesticides with a slant on current issues related to schools. My name is Kevin Schick, here with the Department, with the Bureau of Environmental Evaluation and Risk Assessment. A wide variety of pesticides have been used in New Jersey. Arsenic-based pesticides were used early on, copper-based and lead-based arsenicals

mainly. The 40's saw development of organic chloride pesticides; DDT, aldrin, dieldrin, chlordane, toxaphene, lindane; used for pests on vegetables and fruits. They tend to bind strongly with organics and have strong half-lives, and that's why they still persist years later.

Dieldrin is one of the most limiting. It was applied at a higher rate than others, but its health based criteria is lower than the others at 42 parts per billion (ppb). Even though it has a half-life of two-and-a-half to four years we still find it is a limiting issue on many sites. With regard to chlordane, the last uses were limited to termites and fire ants. It was used until 1988. As long as land stays farmland, the presence of historic pesticides represents a minimal risk compared to other land uses. It is when farmland is developed that problems arise.

Problems began to arise early in 1996. First in Burlington County, Burlington Heights, Sunset Ridge and to give you an idea, this is the area that we are talking about in 1930 [aerial photograph shown]. If you look closely what you are actually looking at what is probably two-thirds orchards. Everybody see the round arches, those are orchards and the other areas that are not wetland would be croplands. Orchards typically worse than croplands since they are dusted on a weekly basis with arsenical pesticides, whereas the field crops would only get applications when and if needed, one or two times a year.

This is the site in 1995, you can see we have everything from townhouses to businesses to many residential areas, and in the current view it's mostly developed, and much more extensive on this farmland in terms of the residential developments going way off this picture.

These pesticides were found in newly occupied developments, and a large-scale removal ended up taking place. There was a ripple effect throughout the industry as a result. Developers had problems, real estate slowed down, banking, insurance, everything related to the funding of development slowed down because everybody was worried about liability and cost. The Historic Pesticide Task Force was created under Commission Shinn and released its report in 1999. [The full text of that report is at this link. http://www.state.nj.us/dep/special/hpctf]

Among the task force recommendations, soil sampling should be conducted when you are going to have a conversion from a farm use into housing, parklands or even industrial development. That guidance calls for discrete samples taken between zero and six inches from within the farm fields and designating a sampling frequency regarding site size with a minimum of two samples. For example, two samples for land up to ten acres in size, and one sample for land up to five acres in size, and for a one hundred acre site, 23 samples. Analysis would be required for arsenic, lead and pesticides. A No Further Action Letter can be requested, but is only needed if you find contamination. For transaction purposes sometimes people come in for an NFA Letter in the absence of contamination.

If you find levels above the soil clean-up criteria, you would follow the voluntary clean-up program and ask for a MOA to address these issues. We would then review and approve.

The remedial options in the Historic Pesticide Report called for everything from typical on-site capping controls that require Deed Notice to removal of the site soil and reinstating clean soils in their place.

Historic pesticides were government certified for application. The regulatory agency told people how much, how often and what for. They were used over such large areas in a homogeneous kind of application, that they can't be considered discharge. It would make it almost impossible to deal with the farmland development issue. [For historic pesticides] Contaminated soil can be blended with clean soil from either on-site or off-site, outside the area of concern. The blending of these soils is a common technique that is used because the levels typically marginally exceed soil cleanup criteria. When using deep soils or clean fill from the site you typically can achieve residential clean-up criteria and get a NFA Letter for the site.

New Jersey Soil Clean-Up Criteria, based on legislative mandate for carcinogens of one additional cancer in a million risk, makes the residential scenario yearly exposure and a 70 year life span. DDT and metatabolites are found frequently but often only amounting to fractions of a part per million (ppm), well below health based criteria. Dieldrin, (42 ppb), is oftentimes an issue at sites. Arsenic would be less than one ppm, but due to the prevalence of higher levels naturally occurring in the environment, we use a background based value of 20 ppm.

Recently the finding of historic pesticides has effected the citing of new school facilities and caused a school closure due to concerns with elevated levels found in a soil pile. Last June, in Upper Freehold Regional Middle School, we held the public meeting on this. [Kevin shows an aerial view] Allentown is a small community; entirely farmland. By 1995 it is still farmland; horse farms and residences starting to spread out. As of 2002 you will see it is quite different. There are developments going well out from the town and several developments all around the proposed school.

The School Board took hundreds of samples and spent $.5M to characterize the site. The sampling results were exactly the soil clean-up criteria; not that elevated. Lead wasn't issue, which means they didn't use lead arsenic as a pesticide. Despite the results, they are considering using another site in town.

Termiticides detected at existing schools impact construction and renovation and of concern among parents. Soil was excavated from around the foundation of West Brook Middle School in Paramus during the installation of new HVAC. The excavated soil had elevated Chlordane, Aldrin and Dieldrin, 1.5-2 ppm. Aldrin alone is rarely seen in the environment, because once applied it converts quickly to Dieldrin. In Paramus, it's deep underground or against the foundation. It hasn't been aerated or in the sun at all. This is not a fresh spill.

The Mayor closed the school by emergency proclamation on May 30. Probably the first person to know about this was Adam Zellner, who I hear received a call at 10:00 p.m. and we were out there doing a removal action, finishing at 5:00 the morning on the following day. 120 cubic yards of soil were removed and we took samples before and after removal. Results showed that we still had some elevated levels that remained in the area at the soil pile. A Memorandum of Agreement was signed by the School Board and we have had constant contact and conducted several site visits. A work plan and Remedial Action Plan were submitted based upon a full delineation that occurred a few weeks.

They did indoor wipe samples, which were entirely non-detect. The three indoor air samples showed very low levels of Dieldrin, and it is highly unlikely Chlordane would be a volatile issue.

I believe the Health Department is still evaluating that level and it may not be a level of concern. They looked at least 60 locations with multiple depth sampling and delineated the area of the soil pile. They found another area where another installation of electric line was put in where there are minimum exceedances, and based upon this, evaluated the entire acres of the property. It was found to be former farmland, and there's widespread presence of pesticides. The ppm levels were of no concern anywhere outside of the building foundation.

They sampled all school buildings. Everybody is working to get the school opened by September. We expect to have a majority of the remediation done in about two weeks. **(See attached Slide Show for more information)**

TOM: Developers of farmland often sell the first six inches of soil as topsoil. Are they required to sample it before they sell or redistribute?

KEVIN: Most of the developers strip the topsoil; they don't want to put foundations on it. There is nothing to require sampling farm soil to be used for topsoil anywhere else. People are doing the

due diligence in a Phase I or II. It is another issue when pesticides are present because then it needs to be called in as a discharge. It should not be sold, but no law restricts that.

TOM: That won't come up in due diligence of a site that received that soil probably.

JANE: Of all the recommendations you have had to remediate, analyze and delineate pesticides, the one deficit, was voluntary. That might be something that we look at now. You mentioned residential and municipal parks. School sites are not mentioned in the report. I would recommend that whenever farmland is turned into a school, residential use or municipal park, investigation and analysis be required, not voluntary.

BOB: Assemblyman Bob Gordon. I represent the 38th District of Bergen County, including the Borough of Paramus. I have spent many evenings over the last few weeks involved with the West Brook Middle School issue. In fact, in the last 24 hours, tests taken by the Department of Health indicate trace elements of Chlordane in the HVAC system in one of the schools and remnants of pesticides in an area that was supposed to be used for a summer camp. The community remains in a great state of consternation. Today's *Record* is reporting that another school district in Bergen County is undertaking a testing program, and some of my colleagues believe we should be requiring every school district to test the soil. We need to be more discriminating. We look to DEP for guidance on when and where we need to test. I hope that what comes out of this is some criteria and advice for the school districts around the State to avoid a blanket approach. I would also say that based on my own experiences with West Brook, the press comes out with stories about finding contamination X times the safety standard and the residents get very upset about that. Representatives of DEP and the Department of Health came and tried to explain those in terms of risk, the probabilities, and the cancer risk from exposure. That information is very important to get out early.

LINDA: I came in through various things that happened in my district, particularly in Hamilton. We had the W.R. Grace, Ford concrete aggregate and Mercer Rubber, plus several others. The common thread is the need for new standards when it comes to site remediations. I am glad to be working with all of you here on changes in terms of public awareness and involvement in the different standards. I was involved with the bill in Gloucester County on the school standards.

Adam Zellner remarked on responsibilities, the need for new legislation and the importance of stakeholder input.

LINDA: I appreciate you saying that. I have held onto a couple of my bills to give this a chance to work. I would rather have a good piece of legislation that everyone has bought into so we don't have the problem afterwards.

JORGE: I think there are some real valuable gems in the pesticide policy.

JANE: [Jane was on the task force] One of the most contentious arguments is whether this idea of soil blending on site should be permitted since it takes more contaminated upper layers and blends it with less contaminated soil to achieve the standard. From an environmental perspective, I was not inclined to support that measure because it entails spreading out the pollution, not eliminating it. We don't feel dilution is the solution, but I didn't realize it could be spread throughout the site. I actually thought it was allowed within the confines of 'deep till' which farmers would be doing anyway prior to ever developing a site. The idea of consolidation or capping with a Deed Notice is a less permanent remedy because there is the concern that cap or bermed area will be altered later on, and the homeowner may not convey the Deed Notice to the next homeowner. The concept of blending, because this kind of pesticide contamination was generally limited to the top six inches of soil and you went deeper, the contamination was minimal or nonexistent. It seemed to be an appropriate remedy, but it may not be the case for other kinds of contamination.

This issue of chlordane application around perimeters is different. We didn't discuss that issue of historic pesticide use. In the concentrated application of a termite application you are pumping gallons and deliberately drenching soil a number of feet down, for the depth of the foundation. I don't think that can be captured under the historic pesticide protocol.

JORGE: There are practical issues of dealing with it at a certain level, and even through point-by-point dealing with these sites and reasonable toxic materials under a normal protocol would dictate that clean-up is necessary. We said is clean up impractical in those situations. Therefore, we need to apply the practicability test as well implementability tests. What realize you cannot clean up all those sites to the standard that would apply. It allows us to move away from the point-by-point determination of safety. The mass is still the same. When we diluted it, the mass isn't going away, but we needed practicability in approaching these sites.

JEFF: Has anyone gotten back to the farm fields to see what exactly the pesticide levels are? Has anyone gone back and monitored to see what is happening?

KEVIN: That was a major issue. Do you address the situation from now on where the farmland occurs or do you look at something as extreme as potable wells? Do you require sampling of soils upon the resale of homes that were built on farmland? Everybody agreed that would be onerous. You may find widespread low levels, you may find arsenicals from pressure treated wood and then half the homes in New Jersey would be on the KCSL.

The issue of termiticide is a new one. There are thirty million structures in New Jersey that had termiticides applied, most treated with chlordane. You don't get a mortgage until you documented the application. They would use a 100 gallons of 1% concentration under the foundation of a home and start thinking, is that a discharge? It was a deliberate application. Would you want to take away what was put there as a deliberate application?

JEFF: We also have chemicals like chlordane and we may have a bigger risk then we realize. We haven't seen how the pesticide program is worked on-site because there haven't been studies to go back and test. In well data in Pennsylvania, in areas where there is no historic arsenic in the ground, they are finding arsenic in wells because it is not part of the north basin. Have we gone back to see what happened to see if it is working?

KEVIN: Some issues involving high levels of chlordane in some homes on military bases, and now there are indoor issues in some as well. With the half-life these pesticides being what they are, an application in the 1950's, of 10,000 ppm, should be in the range of 10 ppm now. We aren't dealing with issues that we would expect to find hundreds or thousands of ppm. The only time I would expect to see that, if we find areas on farms, specific areas of concern, like where the pesticides were stored and mixed. That is the only place very high levels of pesticides are present anymore.

ANDREW: I thought it was in sites where we had blending under Department supervision, have we gone back and looked at it. You have to show the RAR and the NFA, before the buildings are built, the blending had to meet the requirements, but if someone added pesticide and are living there; it's different. We do a disservice to the public when we don't communicate as clearly as we can in terms of how these numbers equate to risk. The number comes out in the paper but simple facts can be distorted. We typically drive everything towards the transactional mode; as if it's an appropriate approach for addressing human health. The risk is there regardless, and we pretend we should focus because it is an easier way to distinguish between one site and another. A school built years ago is as exposed to risk as a school being built today. When DEP comes up with the standard, that numbers should be applied to that as well.

Former residential sites are as much a risk as new residential sites. We force some of the new residential sites for developers who want to go through the process and many do. Let's focus on

transaction, let's focus on re-licensure for daycares, they all get re- licensed in a three-year period. I don't understand the risk of distinguishing between sites that are going through transactions, or sites that are going through a planning process; as opposed to sites in general.

OLGA: I hoped we would come back to the issue of school safety in general, which is much bigger than the pesticide issues. Urban schools are not so much exposed to pesticide as they are to various industrial contaminants. In Camden City, school safety has been a hot issue because we have so many problems with contamination in schools, and we were disappointed when the Legislation was so focused on the Franklinville Daycare Center. Why just daycares and not schools, particularly in elementary schools where kids are very vulnerable when exposed to contaminants? There is such a problem with old schools; lead, asbestos, underground storage tanks; all these things have just been neglected in Camden City.

We have six public schools that are on the KSCL and there seems to be no program for indoor air testing to reveal whether there is vapor intrusion from the underground storage tanks. The Cooper School has an underground storage tank that leaked into the ground and has just been sitting there. The Lanning School operated for years even though it was a known contaminated site, so there's real concern in the community. Is anybody checking whether these schools are safe and whether there is bad air quality and bad water and these kids are being exposed? That is something that the Legislation hasn't even started to address. We don't seem to have clear standards for schools, for daycares, parks, or playgrounds in terms of acceptable soil standard criteria in non-residential areas. We have a Salvation Army site in Camden that is being built on the Harrison Avenue landfill, one of the most contaminated sites in the state, and they are saying they can do little surface clean up. It is going to be capped and there is concern about the children's safety when you have ballfield and kids playing in the dirt. It doesn't seem we have clearly defined standards in the Legislature like we do for residential use. What is appropriate for schools, daycares and playgrounds?

IRENE: The Madden Legislation requires the Department of Health and assumed services to come up with indoor air standards that are specific.

OLGA: Are they going to test existing schools?

IRENE: That is subject to debate. DHSS said the bill would require testing of all schools. There is some debate as to whether if it's change of use, if it is based on the DCA building codes only, or if it applies to all schools.

ANDREW: The Madden bill does address all schools but it mentioned that there has to be some type of trigger, and the trigger is the need for an approval by a local construction official for a building permit or certificate of occupancy. So if there is renovation that gives rise to a need for a building permit and site assessment. It's not all schools, but schools of a certain sites. It is the least limiting of the criteria, those that are potentially contaminated, but we couldn't find in the statute as to what "potentially contaminated" might be.

OLGA: That is important, that there be some trigger for testing if a school is on a contaminated site, or near a contaminated site. Camden tells us they have no money to build or renovate schools; there will be no building permits in the future.

BARRY: Just as a follow-up on the Madden bill relative to the triggers as to whether or not the indoor analysis needs to be performed; one of triggers is if you are on a known contaminated site, the other is if you suspect there's been a discharge.

ED: DCA has put out information for Code Officials on their web page. You see letters that they put out to the Construction Code Officials advising them.

JEFF: Some of us were trying to have this meeting about five and six years ago at the beginning of the school construction boom. We were trying to get separate standards for schools and were rebuffed by previous administration. We found out during that process that many of the communities were deliberately taking the most contaminated sites for schools because they felt it was the only way to get them cleaned up. Other places like Gloucester City, wanted to put the school in the superfund site because the other land that the school board owned was to be sold for development. I hope that the commission can come up with rules for siting schools on contaminated sites.

ADAM Z.: As we are talking about this, keep in mind what I opened up with in terms of responsibility. Jeff's point is well taken. As we start to talk about this, we need to look at who is responsible? Should school boards be testing everything from the beginning? What is the State's responsibility in setting standards for those tests? Who is in charge of oversight to make sure that it all connects?

Donna: I am trying to grapple with how the intercity districts deal with the cost. One thought might be expanding HDRF to include some of the outer districts. You can't afford to open it up to all school districts, but opening it up to the school boards then in the districts for testing and possible clean up. Once they test to see if there's something to clean up and find out these school boards do not have the money to do it, maybe HDRF is the way to go.

BARRY: By policy we have defined daycare and school scenarios. Our proposed remediation standard, the residential numbers are applied at schools and daycares. If the situation is one where you are looking at a specific standard, based strictly on a school exposure scenario, it changes the approach. All of our standards are chronic exposure. For carcinogens we are looking at a 30-year exposure. If you want to adjust things for school exposure, then you are going to have to factor in what is the typical exposure for a child at a school? That may be five or six years. You are going to have to adjust that. Then you run into the situation of, do you take a chronic exposure toxicological factor, plug it in, or do we have to now again look for some chronic toxic state which may or may not be available? Making that adjustment (from a 30 year to a six year) is probably going to be higher than residential.

IRENE: Residential is more conservative, but it is something that we look at to come up with acute or sub-chronic standards, something we can consider.

BARRY: That is carcinogens. Non-carcinogens may be a little different. For carcinogens, there is theoretically no safe level, everything is on a zero-based value, and you calculate and drive it back to zero. For non-carcinogens there is a threshold that you have to reach before the adverse effect kicks in.

So I believe that if you did the calculations on a school basis versus the residential, I think the numbers would probably come out almost identical.

JANE: I was hoping to clarify that issue of whether in the proposed standards; schools will be residential standards, which they should. I really disagree with the calculation; a middle school for three years or an elementary school, only five years.

In today's age, kids are in school longer than they are at home. In some cases they to go for breakfast and after-school programs. They are there for summer camps. You can't say they'll be less exposed at school.

A SPEAKER: Faculty can be 20 years at an individual school.

JANE: In the younger years these kids are at their most vulnerable time of cancer. Kids get 80 percent of their cancer risk in the first five years of life. So exposure at this time to carcinogens

for an adult staff person is a different story. Children are more vulnerable at that age and should have additional protection.

IRENE: That additional protection being the residential standards, which is the most conservative not assuming a shorter time period or they are not there as many hours a day.

ED: When you use the residential standards, those are the standards that you use to take action, that action can be capped, doesn't mean that material is removed down to those levels. It would be acceptable if it is capped.

TOM: That means that any standard you apply would be the same. Didn't matter what standard you apply if you cap it; right?

ED: It has to be protective.

JANE: What are housing developments doing? My guess is that when there's minor orchard farmland contamination and they blend the soil and everything is clean and tidy before they come to you that is being done.

KEVIN: Absolutely.

JANE: In other areas do you see more of a preference for actual removal or is there a lot of berming and paving going on? I know that in Hamilton with that shopping center at 195 and 130, there was a lot of berm going on and that wasn't required to come in for historic pesticide contamination. Arsenic was an issue. They weren't required to assess it and berm it, but they wound up doing so under some public scrutiny. So what is your experience with residential development going on? Is there a lot of berm going on?

KEVIN: In the majority of residential development that I see, people do not. I know of no instances where people have come in and said, "I am going to take the residential areas, accept the elevated levels, and Deed Notice the whole site." Typically what is blending is done in place without bringing in soils. 80% of the time we have sites, orchards particularly, where the levels were just too high to do that. So we had to do removals. The top six inches, top foot or so. In some places you couldn't blend 10 feet and reach the numbers, the typical scenarios you have minor exceedances; two, three, four times. They know that it is clean by twelve inches or so. They can blend two or three feet and all this requires post blending sampling. They make sure the blending is homogeneous. We require one profile sample for every four acres.

If someone blended for three feet, they have to continuously sample and analyze every interval after that, which would be 1.4 acres, which is common. Some residential developments are coming in and may have higher levels. So they may do a skim of the top and blending of the lesser, and consolidate under a parking area, a landscape berm, in an area that is not a residential property. That might become a liability for the association where they would have to come in under the biannual certification. That is done under roadways or, on non-resident developments such as Hamilton Marketplace, along with many others. They need to prevent the view of these from residential neighborhoods, so 30-foot landscaping berms are installed. The soil is deeply contained under a clean soil cap and Deed Notice and biannually certified. So the landscaping berm is widely done.

JANE: There was an issue with the Seneca School in Lenape District, there was arsenic there. They did removal. Has it come up with any other schools?

KEVIN: We had a few come in and the options are the same for them as for anyone else. On the Upper Freehold School they came in with proposal after proposal. Everything from blending in place to burying in a confined space under a parking lot five feet deep, and the community was adamant that a molecule should not be left on-site. I clearly showed them that they all lived on former farmland, and may have the same levels in their backyards. Because it was a school they

wanted no blending, no containment, and they walked from the project after spending about half a million dollars. Schools are very sensitive issues.

The risk communication is very important. You start from a logical discussion. The risk communication becomes critical and once it gets to the point of the whole community being up in arms, it makes it very difficult to justify any of this scientifically.

ADAM Z.: I will add school budget; Upper Freehold no ratables, they went with another referendum and spent a lot more money to pass it.

IRENE: Did they find a site in Upper Freehold that isn't historic?

KEVIN: They had a site on Bresser Road that they are evaluating. I don't know if they submitted a MOA for the new site, but we would require them to go through the same thing with the number of samples required and address it the same way. Hopefully it would be clean and we don't have to go through this issue.

FRANK: If we look at just the cost of testing with the standard in place, forget the remediation because that is quantitatively greater, when the standards are created, whatever they are, there is going to be a cost of implementation because of the testing element. Half a million dollars here or there doesn't seem to be unreasonable for a site, but if you multiply that by the number of schools in the state you are talking about a big number. The legislative vehicle needs to be sensitive to the element of being able to pay. There is no vehicle in this state that confronts it. HDSRF would be out of its league. The only way to get this funded is through something new.

SHERYL: Have other states looked at this? Do other states have different criteria for school or sensitive subpopulations? What is the state of the science, nationally?

KEVIN: When we started to work on the historic pesticide other states weren't addressing it. Even states with huge apple crops, like Washington and Oregon, with such high levels of arsenic they had to stop farming because they got to 400 and 500 ppm because they have been doing it for eighty years. Now there are municipalities in New Jersey that require the equivalent of the task force with a PA/SI on developments, any redevelopment from farmland, residential, or school. I don't think it would matter. Your town is probably one of them right?

JANE: Medford, Moorestown, Mount Laurel.

KEVIN: It was put out in the hopes that the Legislature would continue as regulation, it has not occurred. It is widely used throughout the State. I have to say that things come in all the time under Memorandum of Agreement. People know what is required of them, and what to do in investigation. I rarely see inadequate samples. They know what they have to do. We work in a lot of parks, and every time that you look at a park or school scenario you are going to have what was mentioned, is that the typical residential scenario incorporated; very conservative, long term chronic approaches.

Any time you start looking at a park, even if you say you will get twice the dose of soil because you might be more involved outside, you are still not there everyday. There are a limited number of hours and how many people have been going to the same park for 30 years on a daily basis. Regardless of what we do, it turns out when we do park scenarios, alternative remediation criteria, typically higher than residential, but a little lower then the industrial. The residential alone is protective enough we think for the typical school scenario.

IRENE: We are saying that residential is the appropriate standard for schools and probably parks too. We are not sampling consistently through legislation or regulation. When there is conversion from farmland to park, school, or daycare.

KEVIN: If it goes to a Green Acres program does it mandate what they do in Phase I and II or PA/SI? We get many sites that go through the Green Acres, both through the state and the municipalities conducting the work. Municipalities don't typically go out and buy land until they do an evaluation. Developers don't buy farmland without looking into this because they don't want to get saddled with a large liability, especially once a development is built.

OLGA: I am very concerned about the potential disparity and standards. New schools in more affluent areas and the level of public concern and scrutiny that go into them compared to intercity schools where poor kids go to school.

Where you have a population that can afford the property taxes to build a really clean safe school, in a place where the legislators and the local school board are responsive to the public, we are going to get a high protective standard. But in a place like Camden where the school board does nothing, the elected officials do nothing, there isn't the outcry; residents feel they are getting treated very differently than the places that get the attention.

IRENE: Which would support legislation that impacts all schools and parks, and not just people in the areas where people want to pass an ordinance.

OLGA: We need the ability to enforce those clean standards and we need funding to make it possible, because the rich areas are going to be able to do those really safe clean schools voluntarily. And in the lower income areas people don't have that options.

JANE: Where the local ordinances have been passed it is fairly simple. They just say that when new construction happens, it has to meet the DEP soil standards, and the way that it gets to it is that the preliminary assessment has to identify former uses, industrial, farm, et cetera that could trigger the second stage investigation with actual testing.

So that kind of structured authority is what drives it, not municipalities setting their own standards. When something is brought here, it has to meet the DEP soil standards. That might be a simple way to cut through the legislative authority to require that for construction in schools and parks and residential.

OLGA: The poorest places don't have construction.

IRENE: Talking about some sort of testing across the board. One of things that I keep struggling with is how you handle more of the deliberate applications for termite purposes because all or most of the schools would have had that happen over the years. You don't want to prohibit it. What do they use now?

IRENE: I am not sure how you tackle that issue. Going to every school and dig around the foundation?

KEVIN: This was an issue for which we didn't want to put out criteria, knowing that it would be easy for someone to look for it right next to a foundation when they are taking out a tank. Before you know it, we would be digging up all the houses because of chlordane. That's why it wasn't put in there.

SHERYL: I really don't know, in terms of the application of the termiticide to the foundation, if left undisturbed what is the exposure pathway, is it indoor air flow?

JANE: That is what really led to the cancellation of chlordane as a termiticide. Even when applied properly, the holes drilled into the soil or into the foundation are plugged, there would be indoor air levels of chlordane; months or years after the application and that speaks to what the HVAC system is; a route into the building. Any cracks into the foundation as well. These are volatile chemicals.

SHERYL: If the exposure isn't the foundation and the soils, is there a need to focus on the indoor air quality as opposed to spending a lot of resources and money digging things up?

JANE: It is not necessary to remove the chlordane application if it is not vapor intruding into the building.

SHERYL: Do you need to sample it for exposure? What if you were to look at the indoor air quality of the school and there is an issue; that would be far less costly than sampling around the perimeters of the school and you would have to do the other test anyway.

KEVIN: At West Brook Middle School they realize they all have their own associations; the business administrator, the superintendent, they have associations. They told us that they are working on policies and procedures for their school that would probably be used in others, and would forward a resolution to us for review. They would like regulation in terms of any time work is done immediately adjacent to a foundation. You would expect that it would be contaminated and tested prior to doing that so workers aren't exposed unnecessarily.

If you have contaminated soils and they have to be removed, they are handled as such. So the resolution would be any work done. I think they were talking about within four feet of a foundation. We would require a sample. Something is in the works already on that. The issue of volatility, absolutely chlordane. I imagine it reeked with the levels that they were using. The half-life situation now is we shouldn't have anywhere near those kinds of levels. There is a lot more work having to be done prior to letting our kids back in there.

TOM: When you talk about schools and the applicability of the residential standards, is that everything from daycare to colleges? Is that the universe of schools that we are talking about?

BARRY: I think we have defined it as daycare, elementary and secondary, up through high school but our definition is not colleges.

Drycleaners Discussion

JOHN: Irene asked me to talk about the state-funded drycleaner programs. There are about 13 other states within the nation that have this program, and I have had the fortunate experience of meeting some of people that run these programs in other states such as Florida and Tennessee.

Drycleaners for the most part use a chemical called Tetrachlorethylene (PCE) to clean the clothes. PCE is a recalcitrant chemical that gets into the ground water very easily from standard practices of these drycleaner programs. It is very powerful for vapor intrusion issues and ground water. So as a result states had implemented what is called a State-Funded Dry Cleaner Program.

The basic concept here is that the state creates a fee program or a tax on users of the drycleaners. Some of the states also use registration fees and taxes on the solvents to fund a program that the state implements, to address the remediation aspects of the drycleaners.

[Reference to attached handout]

Table One shows the elements of the state program. Basically there are minor differences between the different programs, some of them are more than others, but the first category is who is covered. It is a legislative action and who is going to be covered under the Legislature.

Alabama I think is the most comprehensive. They cover owners, operators, wholesale distributors, adjacent land owners, impacted third parties, and abandoned drycleaners. Connecticut and Missouri probably do the least and only cover active and inactive drycleaners. At least Missouri used chlorinated solvents only in their dry cleaning.

You can see the benefits that each program indicates. Basically the programs provide liability protection for the drycleaners, not at the federal level but at the state level, and also provide clean-

up funding either through cleanup costs the state oversees or through a reimbursement program. And each program has some sort of a limit, not all have limits, but there are typically limits to the funds that are provided.

It goes from No Limit to $50,000, which isn't going to cover very much when it comes to cleaning up solvent. Some of the other requirements for the clean-up program are that you fill out an application; usually a lot of these states provide an opportunity of about two to three years to develop the application to become eligible. They are required to do a PA/SI, and then they are ranked. There's also fees and upgrade system requirements that are involved also.

I believe Senator Rooney, from Bergen County had quoted a dry cleaner bill a few years ago that required some of the upgrades to the systems to prevent spills from the future. I don't think that bill actually passed, but this would be something that we could tie into that.

The next column is Program Sunset which varies also. If you move on to Table Two, it shows the Fee Structures that are set up by different states and these run from gross sales taxes to annual registration fees to solvent fees to receipt taxes. Each state has a combination of just one or a combination of all of them. There's typically a deductible required. This provides a bit of an incentive for the drycleaner. If it is going to be a percentage to maintain as low as cost as possible.

If you move on to Table Three, it breaks down administrative end of the different programs. The last three columns give you an estimate of the assessments that are initiated through remediations inactive and the phase provided and they vary.

These were implemented at different times; Florida is probably the first one to implement it, most of the sites have NFAs and Texas was the last one to implement it. And if you look at it they hardly give you any information on where they are at with that.

When this was initially enacted in most of the states, it was initiated by the dry-cleaning programs and the environmental regulators were opposed to it. Now, they think it is a good program.

Understand it is a shift in the mindset for regulators; taxing the users to pay for the clean-ups. There are two mechanisms for clean-ups; one is a reimbursement program, and the other is direct oversight by the state. Like our publicly funded program and they seem to both work well.

With the reimbursement program there definitely needs to be some sort of table on what the appropriate costs are for the different types of technologies. If it is directed state clean-up, it is a little bit easier to handle, or as a hiring program where they do both direct state clean-up, or if somebody wants to get cleaned up before the state gets to it, they can do it and then be reimbursed. Some of the benefits that we are going to be looking at could provide additional state funding for the department. We could have a dedicated staff to address these things.

In the State of New Jersey we have about 2000 active drycleaners and about 5,000 gas stations. We have an underground storage tank program. 2000 drycleaners is enough of an incentive to indicate that there may be need for a dedicated program also.

I think it would provide for a faster clean up of these sites and would also provide relief to the small business community, a sector of the small business clean-up liability.

TONY: Just a question and I haven't gone through the list. The last time Irene mentioned that there was some discussion of possibly prohibiting the use of the dry-cleaning chemicals. Has there been a ban in other states?

JOHN: California, but I don't know the other states though.

IRENE: I think that the ban that we are talking about is going to be via the Air Permit Rules. The Air Permit Rules that are being currently worked on and there have been discussions with the dry-cleaning industry about this; to upgrade equipment. I can't remember what it is called, level three equipment, third generation equipment or something along those lines by a certain date, and then totally stopping the use of PERC by 2013 or 2020, something like that.

TONY: Does the Department need legislative authority to do that or they can do that through regulation?

IRENE: I can't speak for the Air Permitting Program. If they feel they have the authority, I am behind them.

LINDA: Are there other industries that you are targeting, either large or small? Is there a particular reason to target dry cleaners? I know there is a lot of pollution involved but a lot of other industries have it too. Have we looked at some of the others as well?

IRENE: I think one of the reasons that states do this is because of the persistence of the PERC in the ground water. When it spills, it could be a mile, two miles long. And for the most part you are not going to find a drycleaner with the financial ability to pay for the remediation.

JOHN: When you look at gas stations, you are talking PCE. It doesn't break down easily. It is a much more complicated investigation and remediation and does tend to cost a lot more. As Irene said, these are small businesses; they don't have a backing of the petroleum industry. It is not going to be easy for them to pay for these clean-up costs.

LINDA: Is there going to be a big out cry? How will environmental groups react to this?

JANE: In essence it is a "polluter pays" program. If the drycleaners are assessed and there is a solvent charge on the PC itself, then in essence it is polluter pay.

IRENE: If you look at a combination, the different way the programs would pay, they would have to up their bills and a certain percentage of that goes to this.

JOHN: I think if you look at the large corporations, they internalize the cost. And as a result the person purchasing their product is the one that is actually paying. We are essentially going to be doing the same thing with the program.

JANE: As a follow-up to what Linda said, are there other industries or other contaminates of concern that you might look to control chromium and mercury. There's been a lot of efforts with mercury batteries and getting them out of waste, but since it is such a persistent and health damaging pollutant, that as a strategy looking at all the sources of mercury and attempting to eliminate them.

IRENE: Generators of chromium and mercury.

JANE: Yes, generators, emitters, users. That kind of the pollution; site remediation is the result.

WAYNE: You have the old drycleaners, closed and the pollutants, and then you have the new operating drycleaners. Do any of the states require financial responsibility on drycleaners about paying insurance for their tax and operations to ensure against future discharges as opposed to everyone paying into one fund, possibly depleting that one fund over time? Is there any way that is regenerated like for new operators you have insurance policies that will cover the discharge, historic discharge will be under this fund that they will pay into?

JOHN: In most of the programs that fund covers both the old closed drycleaners and the active drycleaners. I don't think there is any program that doesn't cover at least those two. Some of them cover some additional. In respect to how it is designed, some require that there be some sort of insurance policy before they are taken into the program. Some call it an insurance fund.

FRANK: I see all different amounts of the clean up fund limits. What the objective of these programs? The percentage of reimbursement for cost looks like you mentioned a $100,000. Didn't seem to get you very far. Are they looking to do 25% reimbursement as incentive, 50%?

JOHN: I think it is not 100% because there's a deductible for most of these programs depends on the state. Florida has a flat $5,000 deductible fee and everything beyond that is covered by the fund.

There is another program that has a percentage that you pay like a $5,000 flat and then you pay 8% for anything over a hundred to $250,000 and then it goes up from there. I believe that was Tennessee and that was designed to try and have the drycleaners control the costs of what they are paying. The more the clean-up costs, the more they are going to have to pay.

FRANK: You recommend a deductible program--

JOHN: One is a flat rate and one is a percentage. When it comes to a cost cap, the total cost to that, the fund is going to pay from $50,000 in one state all the way up to No Limit. Looking at what these things cost, I think a lot of the states I saw have a $5M cap on their cost. I think that is probably an appropriate cap but that is something when the regulation does get written, that is going to be discussed.

ED: I am starting to see drycleaners billing themselves as organic. Are they not using the chemicals in question and if not, should you consider centralizing a conversion from the traditional drycleaners to using these organic methods?

JOHN: They are using different petroleum; they used petroleum in the dry-cleaning industry. I think they are going back to that to some extent, a starter solvent is typically used, and also an alternative using carbon dioxide. I am not familiar with the process, but there are alternatives out there now and you will probably see more of them come out in the future.

MIKE: What is the recommended alternative that the drycleaners is using? Do you have data some of the surrounding states what they are doing; New York, Delaware, Pennsylvania and such?

JOHN: This actually came from the State Coalition for Drycleaner Remediation. New York is involved with them. There wasn't a whole lot of information on what New York is doing. These are the states in the coalition. That's why they were picked.

ANDREW: We have been involved in a number of cases, both landlords and drycleaners. They are heartbreaking cases because they don't have the means to do it. There should be more information obtained about the conversions to petroleum-based cleaners, and the "green cleaners" because I see some programs include them, some programs don't.

If there is a decision, there is information out there then there needs to be conversion. One of the aspects should be providing the loans to be able to do that. The new units cost between $100,000 and $130,000. Sometimes they are financed by the person who brings them in, but usually it is a small business person, and a lot of them are recent immigrants into the country. Spending that money and getting into debt at the rates that the suppliers provide the debt for, is substantial, when they just bought a relatively new store or relatively new investment. So I think that needs to be considered as well, both the alternatives and whether there be a loan or other type of conversion process.

SHERYL: I am not opposed to the program, I just wonder with all of the things that we have been talking about in terms of the stakeholder process and the limited resources of DEP and the private sector; at what point in the white paper process would we talk about the priorities? Can we do all of this?

IRENE: I think that might be something we end up discussing as part of the legislative session. I think the intent was to put together white papers for the legislator to look at what we feel the issues are, and what the potential solutions are.

JORGE: I am wondering if there is a role for the private sector to function in the role of cleaning up and remediate these sites. I wonder if any state has considered a required insurance policy, purchased by the drycleaners or whoever, and have standard terms and conditions throughout. Has that been done in any state?

JOHN: One of the states requires $500,000 insurance.

IRENE: Looks like Illinois.

JORGE: Something that has been probed, but maybe not as explored as it might be.

TOM: Do you know how many drycleaner cases are working right now?

ED: I don't know the numbers, anecdotally from the potable well arena. I would estimate probably a third of the cases we deal with as far as drinking water contamination are probably related.

TOM: A third of the cases that effect drinking water supply.

ED: Keep in mind that you need five of the contaminated cases [to prompt a DEP investigation].

JANE: No, you are talking private well.

TOM: That is a third of a thousand cases.

ED: Couple hundred.

BUDDY: Which group is handling it now?

ED: Basically handled through well field remediation programs. They are handled public supply wells and private homeowners and --

IRENE: Clean-up aspects, a lot of the clean-up centers get stuck with the dry cleaner cases.

KEVIN: What percentage of sites wind up having been a responsible part of the drycleaners, with the childcare facility testing, the indoor testing going on? We are getting a larger and larger number being identified as the source to ground water and indoor air contamination, and several superfund sites based upon. Typically not the mom-and-pop drycleaners but the large ones. I know of three off hand.

TOM: That would be in addition to the ones that are affecting water supply, another universal effect.

KEVIN: The indoor sampling is based on drycleaners and strip malls. Strip malls are the big ones, a daycare center that come in to get evaluated, find the high levels, you find leaking equipment. One strip mall we had to take out a lot of the building materials. It saturated the building materials even after closing the facility.

FRANK: We are talking about how many staff it would take and how many cases you have and I guess the point occurred to me that even though you have only a hundred, 150 cases the rhetorical question is what is the impact to the public by infiltrating the ground water? In essence you are not aggressively doing a couple hundred cases. Potentially we would be looking at a significant public benefit by avoiding the contamination --

ED: Those ground water cases I am dealing with often fall within multiple homes.

JOHN: When you look at these programs other states put together, most of them have some sort of a risk, when they come in the PASI that site will get ranked and put in the order.

TOM: Does the industry itself set any standards for containment, transfer, recycling clinic that would be by way of preventing spills.

JOHN: A lot of the programs where they have the state-funded programs, there are requirements for upgrading the systems.

ED: I think when they talk about third generation, fourth generation, those are the type of changes that go into that equipment as it produces less waste.

TOM: Do they come under UST?

ED: I know UST has a couple cases.

KEVIN: There are known cases where discharge is from an UST and they fall under UST. The Federal Program phased out. If you just bought one of these new machines that allows you continued operation and there are interesting provisions now in construction of these facilities. They have to have vapor proof materials. So if there is contamination it isn't getting into the adjoining and connecting --

IRENE: Actual physical structure.

KEVIN: I believe there are new restrictions on any new facilities in residential units like apartment buildings, I think, already prohibit it.

Performance Based

TONY: These slides were put together by a group called the Site Remediation Network. We meet biannually; all site remediation professionals, to discuss the issues in Trenton. What you are going to hear, we have four speakers; Jenny Liu is going to kick it off for us, followed by Bruce Katcher talking about what happened in the State of Pennsylvania and followed by Buddy Bealer about the State of Massachusetts and I will wrap it up with recommended changes and policies. I would like to thank the two Legislators for staying and listening to the presentation.

JENNY: Jenny Liu here representing the Site Remediation Network and really what we wanted to provide was a responsible party perspective on the site remediation process.

Many of us work in a number of different states and we have seen elements of those state programs that we think can really improve the site remediation process in New Jersey when they are implemented. We first started talking about risk based approaches. What makes these state programs successful? We realized it was not only successful on the risks to human health and the environment but it was the fundamental focus on results. The focus on one was the goal and not necessarily the process to get there.

I thought we would talk about the goals. Can we agree on what we would like New Jersey Site Remediation Program to do? First and foremost, to protect human health and the environment. To safely redevelop sites for beneficial use, and to efficiently use the resources of both the public and the private sector. The question is how do we get there? How do we mutually achieve these goals? There is a better way than the current process. The better way starts with looking at key program objectives, your priorities and then building a program to meet those objectives. We have been having a lot of discussions today about schools, daycares, drycleaners; and the question is what are the State's priorities? If it is schools and you are going to focus your resources on indoor air testing for reporting at every school in the state, then those resources will have to be diverted from something else.

To address all the inactive drycleaners in the state takes resources. Before you start to build a program, it is important to understand those priorities and what the objectives are.

One common thing we have seen in some of the successful state programs is that they have established goals and have established metrics to measure success as they achieve those goals. They design the program around those metrics. They measure progress on the metrics and then report back to the public on their progress and any opportunities for improvement.

One state we will talk about a lot because they have a successful program is Massachusetts. They have everything on their website where they measured against their metrics and reported on the progress and that is helpful. Again, these are all elements of a performance-based program that is focused on true environmental results and not getting bogged down on the process to achieve those results.

[Referring to PowerPoint]

This slide is intended to be brainstorming ideas. We are not here to define what those metrics are today, but we wanted to throw out ideas for today's discussion.

The metrics of the program could be the number of sites or the number of cases closed. Is that for all sites or the number of school sites closed? Is it the number of daycares or drycleaner sites closed? It comes down to what are the priorities of the state of the program. Is it average time for closure? That is another thing that we have seen. How quickly can they get sites closed? How quickly can they get it through the system? The quicker they get through the system, the less the resources they take and you will get the sites back into beneficial reuse faster. Is it the acres available for reuse, acre remediated and available for reuse? Certain types of acres. Does the State care more about acres for residential use, open space commercial or residential use? Maybe those are different types. Again just to generate ideas and some thoughts.

What are some of the obstacles under the current program? These are some of the current obstacles. All the sites are treated generally the same under the worst case scenarios. It is both on the assumption side in terms of developing standards and also on the implementation side. Kevin, when you showed the results for pesticide testing and you said that New Jersey does point by point comparison; if you use statistical averaging that makes a big difference, regardless of what the standard is and the standard can vary by significant amounts depending on the results.

The process does not focus on the end use. It is the use that was for a hundred years and likely to be remain for another hundred years. The process does not encourage use of risk and exposure analysis for soils or ground water. It doesn't use the current legislative mandate to the full extent, and that is when you look at a site and you think of where you can really focus on the resources, you have to consider the exposure potential. Can someone actually be exposed to that soil or is the ground water actually being used as drinking water, and that is something that we will talk about today using Pennsylvania and Massachusetts' programs.

When you look at the slide you might think, "Well, this describes a program that is very protective of health and the environment." Actually it is less protective of health and the environment if sites are not getting remediated and the exposure actually last for a long period of time, and that's when Massachusetts developed the Massachusetts Contingency Plan. The environmental groups were on their side and helped to develop the program, because they saw that sites were not getting cleaned up.

There's been a lot of focus on the LSP Program and DEP limited resources and we wanted to emphasize that resources are not the sole issue in Massachusetts. If you have the LSP Program itself, the system won't work. It works because of the Massachusetts Contingency Plan and the policies in place.

We have some benchmarking data that shows it is not just a matter of resources. We need to not only address certain sites differently. The LSP is a good program but not sufficient. We need

to address the process at the program level; what are the goals, the metrics to achieve those goals, and at site level, what is the end use of the site? What is the vision for the site? What are the priorities at the programmatic level, and within those priorities which site should get priorities?

Bruce and Buddy are going to talk about a couple other states that successfully addressed the issues; first being Pennsylvania and then Massachusetts.

BRUCE: I am an attorney with Manko, Gold, Katcher & Fox. I have a New Jersey practice. I chair the South New Jersey Chamber's Environmental Committee. I am going to draw comparisons and contrasts between the Pennsylvania Program and the New Jersey Program.

I have with me today some of what comes up on more of the scientific related aspects of the program, the in-house technical service group. In the beginning, Pennsylvania was stuck. Sites weren't getting cleaned up. They languished for years because Pennsylvania was required to clean up to pristine conditions with something called ground water protection, which required clean up everywhere. It would cost the State. It was expensive and nobody could afford to do the clean-ups. It took forever and consequently nothing was getting cleaned up. The primary impetus was the desire to get sites redeveloped and back into productive use, but holding a site that there was no environmental public health protection going on, because the contamination would just stay there and people would continue to be exposed to it.

So a coalition of business, public and regulatory groups got together and came up with what is referred to in Pennsylvania as Act 2, or the Land Recycling, which is the first part of the name of the Statute and Environmental Remediation Standards Act to recycle land and provide standards to clean it up. The other thing that was missing was a clear path for it procedurally; to get the sites cleaned up.

Act 2 was enacted in 1995, and I have a brief quote here: "Cleanup plans that should be based on the actual risk, that contamination on the site may pose to public health and the environment, taking into account its current and future use."

The actual risk and the actual use of the property is extremely important to the whole process in Pennsylvania and not just on clean-up policies aimed at requiring every site be turned to pristine condition, regardless of the risk and regardless of the use. In addition, the goal was to get these sites through the process quickly while focusing on environmental protection and public health requirements and to leverage DEP resources to focus on results. The first way that the Legislation tries to achieve these goals is, there is a choice of three remediation standards or approaches to remediation, and these apply to both soil and ground water. You will see that is an important distinction in New Jersey because there's one approach to ground water in New Jersey whereas in Pennsylvania there are multiple approaches.

In Pennsylvania you can clean up to background standard. Background means either a natural condition or if your site is being affected by off-site contamination, you would clean up. You wouldn't be responsible to clean up somebody else's contamination that is coming on your site. That is similar to New Jersey. New Jersey has a provision in its law saying you don't have to clean-up contamination that is coming on to your site, its someone else's responsibility. But in Pennsylvania you can get a NFA letter or the equivalent for that background situation, when you are in a contaminated situation whereas in New Jersey if that's the case you can't get a NFA letter because the contamination isn't your problem. That does facilitate transactions to be able to get a piece of paper that says it is not your problem, but somebody else's. That is the first standard; the background standard.

The next is state wide health standards. These are "look up" tables, just like the New Jersey soil criteria, however there are many more options in connection with those look-up tables Pennsylvania than there are in New Jersey; keyed to end use.

There are look-up tables for soil and look up tables for ground water. There are residential and non-residential standards for both soil and ground water. There are, as in New Jersey, soil to ground water standards that apply like the impact ground water standards, but there is also something called the "Used and Non-Used Aquifer Standards for Ground water."

There is a procedure in Pennsylvania to designate an aquifer as a non- used aquifer where it is not being used for drinking water or agriculture, and it is not planned to be used, and the feeling was in Pennsylvania if that is the case then why spend our resources on getting that cleaned up? Let's spend our resources on something that is an actual risk. There are different ground water standards and those actually translate into different clean-up standards for the soil to ground water impact standards.

There are a lot of different options to perform a clean-up in Pennsylvania on kind of an off-ramp that doesn't exist in New Jersey and helps to get sites through the process quickly.

The third is the site specific standard. You can meet the site-specific standard by eliminating pathways. In other words, if you cut off pathways for the contamination to take receptor, for example, by capping a site with an engineering control, then you can opt out of the system. If you show that you have done that, eliminated the pathway, and show that you have met a site-specific standard. Sometimes if you don't want to go that pathway elimination route, you can also perform a risk assessment, and develop your own site specific numeric standards based upon the assumptions that exist for the end use that you are trying to clean up the property for, at that particular site. Say you would change the exposure assumptions in your risk assessment equations to meet the actual risk at the site rather than some theoretical risk and you have your own site-specific numeric numbers. That is probably one of the big differences between Pennsylvania and New Jersey; this site specific approach is used very often and is a great mechanism to get sites into the program quickly while getting them cleaned up, while still being protective of human health and the environment for the specific end use.

When you use a site specific standard, you need to put an acknowledgment in the deed for the property, much like in New Jersey, and you have to have a post-remediation care plan for a site specific clean-up where you have engineering and institutional controls. New Jersey is more advanced than Pennsylvania; they are still struggling with how to monitor those IC/ECs, and there is not a biannual certification process in Pennsylvania like in New Jersey.

Pennsylvania recognizes that more needs to be done and is under discussion now. As you can see, the program, in terms of the remediation standards, has a lot of risk-type concepts in it. We are looking at the actual risk and at the end use regularly when we are doing clean-ups in Pennsylvania.

In addition, there's some very specific risk based concepts that are in the program that are from the remediation standards. I mentioned the non-use aquifer designation process. In order to get ground water designated as a non-use aquifer there's two ways; one way you have here, the party performing the remediation has to petition the DEP to get it designated and demonstrate that the ground water is not being used, or not planned to be used for drinking water or agriculture. There's public notice to the municipality and to all water purveyors who operate within the aquifer. There is public participation where they can submit comments on a non-use aquifer designation, there is a comment period and then DEP will make its determination at the end of the day. There's also a process whereby a municipality petitions DEP to designate an aquifer to non-use aquifer, and that is done sometimes when the municipality is interested in getting redevelopment in a particular area and knows that area is not being used for drinking water.

Philadelphia is a perfect example. Philadelphia gets its drinking water from the Delaware River. Is there really any need to ensure that the ground water in Philadelphia is cleaned up to

drinking water standards? The State has made a decision that no, there isn't, and there are many areas within Philadelphia that are designated under this non-use aquifer program. This means that the ground water doesn't have to be cleaned up at all, but it imposes less restrictive standards on ground water clean-ups if you can show the pathways have been eliminated. In other words, nobody is drinking ground water. There's no connection between the contamination and the receptor so you can opt out of cleaning up the ground water under the site-specific standard. It's a straightforward process to get ground water through the clean-up program.

WAYNE: How successful has Pennsylvania been to cleaning up the aquifers?

BRUCE: In general, it's been done in the bigger cities and metropolitan areas. DEP is much more receptive to non-use aquifer designation in Pittsburgh, but less so in the middle of the state.

JEFF: You would have to repeal the section to the New Jersey Clean Water Act. The first paragraph says all waters of the state are to be considered potable. We want to make sure that will happen. The other reason you don't want to have what you are saying is the NJ City of Camden gets [its water from] ground water, as does all of South Jersey. Good portions of North Jersey may have to go to ground water because there's not enough surface water. The other big issue is vapor intrusion. When you have contaminated ground water and older homes, you get vapor intrusions. If you don't clean up the ground water what's going to happen to all those homes? I will give you an example. In Jersey City, the seasonal high water table comes to the surface.

JENNY: Both Massachusetts and Pennsylvania have standards for the vapor intrusion pathways so it is not that you don't have to address the ground water; it has appropriate standards.

JEFF: Most of the cities have fractured bedrock. There is no way you can eliminate pathways. It is geologically impossible.

JENNY: You use the appropriate standard for that use, there's appropriate vapor intrusion.

BRUCE: There are various vapor-venting systems that can be installed relatively cheap.

JEFF: You are coming to us saying you have to put in vapor intrusion systems?

JENNY: There are ways to be protective that wouldn't need the installation system.

JORGE: I want to point out the division is not necessarily ground water versus surface water. It should be ground water or individual homes and private wells versus publicly treated ground water. There is a significant ability to clean up, restore and make the water useful. A lot of surface water going through many of the streams [doesn't meet ground water standards] are not permitted to be ground water, but yet used for drinking water purposes safely all the time.

TONY: Shouldn't the discussion also involve the whole fact, if you look at the ground water quality standards, they are set so low. I can't tell you how many members have come to me and say "Tony, I have been pumping and treating for years now, and the Benzene level is more ppm. I can keep pumping forever and I may never get below the 1 ppm because of the detect level."

BRUCE: There are standards to protect against vapor and you do have to do an analysis, not withstanding that in a non-use aquifer area you address that. The alternative is going back to standards so conservative that clean-ups just don't happen. Would you rather have the contaminated ground water and not have vapor addressed through venting systems, et cetera? I'd say that you are much better off having clean-up go forward.

OLGA: I think it is very offensive to make the conclusion that we are not getting clean-ups because the standards are too strict. It is short sighted to say we are going to contaminate our ground water for the long term and future generations because we don't have the political will or the financial incentive to clean it up. I think one of the main reasons that clean-ups aren't happening because there is no consequence if you don't do the clean-ups and there is no enforcing

clean-ups. So it is easy to have them sit there. And perhaps with the public remediation process we haven't allocated enough resources or created enough to find the resources to clean it up

TONY: The problem is not the strict standard. It is the process.

OLGA: This presentation, one of the key points is the strict standard and that is what I am responding to.

BRUCE: Let me say there is a mechanism in Pennsylvania to deal with changes in land use. Whether it had been a clean up that is geared towards a particular land use and that land use changes, DEP may require additional remediation in the event of that change. There is an approval at the end of the process like a NFA Letter in Pennsylvania, but that can be re-opened when there is a change in land use, and that is one of the reopeners. DEP and the person who changes the land use is the one who is responsible for the remediation which seems to make a lot of sense, if you are going to change the land use in connection with that change you should be doing the additional remediation.

DEP has to demonstrate that the level of risk associated with the new use is beyond the acceptable range under which the old use was cleaned up, because it is possible that the old use clean up was beyond what needed to be done for that use, for example and made it adequate for the new use. Finally, the Act requirements do apply to any new remediation that has to be done.

This process was a very important part of reform in Pennsylvania in order to get the sites cleaned up; not having language because of unrealistic clean-up standards that are not based on actual risk, and because the process didn't necessarily add to quality of the clean-up.

In Pennsylvania we have an initial notice to open the case, like New Jersey. At the end of the project, a final report is submitted containing the site characterization, all the testing that was done at the site, the characterization, and a report on the clean up. That report is submitted to the agency, and you don't go through this back and forth which takes a lot of time. However, the reports are as comprehensive in Pennsylvania as they are in New Jersey, yet the cases are closed out a lot quicker.

Sometimes there is more than one report, particularly for a site-specific standard clean up. There has to be at least two reports because for those clean-ups, since you don't have the existing look-up tables that have already been promulgated by the DEP, you are coming up with your own approach to the clean-up. DEP has to approve that clean up before you can finalize it. Even in that site-specific clean-ups where you are eliminating the pathway and you don't need an engineering control that can be done in one report. That goes for soil and ground water; you can do a ground water remediation without getting prior approval from DEP. You do the remediation, and then submit the final report.

There's also an opportunity for an informal pre-review meeting with the agency and we take advantage of this with our clients. It is a great way to flesh out any problem issues and to make sure the final report addressing those issues. It takes an hour or two and streamlines things considerably. The report details are left largely to the consultants; professional judgment with broad objectives and guidelines that the legislation, regulation and guidance documents provide to protect human health of the environment.

There is a guidance document that would be roughly the equivalent of the regs. It doesn't go into detail but it is in the performance of a guidance document; it gives flexibility to meet the standards. There are agency review deadlines for the various reports that have to be submitted depending on the clean- up standard used; either 60 or 90 days and if the agency doesn't review and respond within that time frame, you are deemed approved.

Now before everybody gets all upset about the deemed approved; I have never seen a deemed approved in Pennsylvania for two reasons; the parties that submit these reports want that final No Further Action Letter from the State, because nobody knows what deemed approved means, and you can't give a deemed approved to a bank. Number two; the agency wants to meet these deadlines. They don't want to be chastised by the public for letting deemed approvals go through. So they meet the deadlines. Sometimes that means reports are returned for additional work, sometimes reports are approved in those time frames. In fact we find that fairly frequently.

Public participation is a big concern too. In Pennsylvania the initial notice of intent to remediate is published in the newspaper, in the area where the project is taking place. The clean up is taking place and also published in the Register, the Pennsylvania Bulletin, and a copy is sent to the municipality for clean-ups that are meeting the background and state-wide health standards. The final report that is submitted, the documents have clean up also, to the municipality. There is a more rigorous public notice and participation process for site specific clean-ups.

Since these standards were generated on a site specifics basis and not the look-up numbers and gone through a public review process, this is where there is going to be the most public interest in the clean-up. We should be more attentive to the process here and in the municipality when it gets the notice of the initiation of a project.

They have the opportunity to request a public involvement plan and then the party performing the remediation, if the municipality requests, has to prepare a plan that has opportunity for community input, municipal input. There's a whole range of things indicated in the statute that can go into the public involvement plan, which can be quite extensive, and we have been involved in a few of these public involvement plan situations. Generally they work quite well and the community gets involved in the process and has a chance to participate. They comment on the clean-up plan. They comment on the final report and those comments must be submitted along with all the plans to the DEP for their consideration in their final action.

The non-use aquifer determinations are all subject to a public review process as well. Okay so that's what we've got in Pennsylvania. I know we focused a lot on the non-use aquifer determination, but really the elements to take away are the fact that the clean-up standards are designed to be protective of human health of the environment. Many of the standards are similar to Pennsylvania, but they give more options geared towards the end of the remediation by getting the sites through the process, addressing the actual risk and the process itself is much more simplified. The material that needs to be submitted, the document to be cleaned up, is every bit as rigorous in New Jersey, the process is streamlined, and it gets through much more quickly.

JEFF: Does Pennsylvania track those diversions when they change the use of the aquifer to non-use? Can you go on the web page and go in and see where they have done that?

BRUCE: They track the data acknowledgments and they have a registry for the data acknowledgments. Pennsylvania is as conscientious as New Jersey in putting things on their website. They do have quite a bit of information there.

JEFF: Pennsylvania holds the record nationally for the most miles of streams that are treated for toxins. There is a direct relation between ground water contamination in large parts of Pennsylvania and stream contamination because ground water does come out into rivers and streams. Secondly, the clause is not only very troublesome, but violates RLPRA. I don't know how Pennsylvania signed off on it.

BRUCE: There is a memorandum agreement between Pennsylvania DEP and USEPA, pursuant to which USEPA actually refers to Pennsylvania under corrective action: allows sites to go through RLPRA corrective action under the Act programs.

BARRY: How many sites are they managing in Pennsylvania?

BRUCE: For the statewide health they use 10^{-5}. They took the risk range 10^{-5} for any individual compound would reflect the fact that in general, there is not going to be more than ten of those compounds present at any one site. So the cumulative risk would be still less.

BARRY: New Jersey is 10^{-6}.

BRUCE: I was explaining the difference. I am not advocating a specific risk ranges, with respect to the clean up. I think the important thing is that the different options available are directed toward the end use of the property. I think New Jersey can readily do that with their existing risk standards.

BARRY: Is there a depth limit for direct contact relative to delineation?

BRUCE: Residential is feet. [15]

BARRY: Non-residential?

BRUCE: The numbers change from zero to two and two to fifteen. That is reflective of the actual risk concept

BARRY: In New Jersey for relative direct contact we don't have a depth limit. I would have to say that the difference between 10^{-5} and 10^{-6} is a significant factor in the sense that just by making that change from a public policy perspective, would I think significantly change the number of sites that would be involved in New Jersey. I would say that is major.

IRENE: Are you saying that because it is 10^{-5} in Pennsylvania they would, by virtue of that number alone, have less contaminated sites.

BARRY: I would say on a relative scheme, yes. But the other thing is like apples and oranges. You are talking about a state that is two or three times larger than New Jersey, and I don't want to make a direct comparison.

BRUCE: I would view it differently because I think the sites that go through the process are sites that until you get your NFA Letter equivalent in PA, most people don't go and sample the soils and say, "here is contamination, but we are within the 10^{-5} range." They want the No Further Action Letter and want the DEP to say "yes, you are within the 10^{-5} range and we will sign off on it." I don't think there would really be a difference in the number of sites going through the process just because the standards were based on a different risk range.

KEVIN: You mentioned the range to the Superfund policy and cumulative risk, what is used in that state? Do they have set a level of which permanent remediation is required - that DEP typically strives to remediate at least 10^{-4}? Is there a level that is used in Pennsylvania or any other state that you know of, where let's say 10^{-3} whatever requires permanent remediation not just perhaps a cap?

BRUCE: You can't use the site-specific standard if your risk is higher than 10^{-4}, but other than that is there a number where it requires absolute removal rather than cap? Not in Pennsylvania.

JORGE: Did I hear that Pennsylvania was cumulative? Is that what you said Kevin?

KEVIN: 10^{-5} is any individual contaminants, so there is still a cumulative risk for a number of chemicals.

JORGE: What is that number?

BRUCE: Risk range, 10^{-4}, 10^{-5}. Massachusetts I am not [completely] familiar but I think there is an upper concentration limit.

JENNY: That is quite high.

TOM: Is all of this work done at risk by the responsible party, if they set their own standards, design their own clean-up and deliver a report at the end, if it is rejected do they have to go back to zero and start again? How does that work?

Darryl: If they want that NFA Letter from the DEP they would have to modify their clean up because you know what they are and you go out and clean it up to the standard and take your samples, and come in at the end of the process when you are doing that type of clean-up. They don't usually get rejected because people are on notice. If you are site specific you are going to be talking with the DEP throughout your process to make sure that you have the right idea. Not as if you are going to actually clean it up and go in at the end of day with a report. With a complex clean up there's going to be some back and forth, but not a lot of reports going back and forth. There's a lot of communication by email, telephone.

TOM: Interim approvals of any sort?

BRUCE: For site specific clean up there is an interim approval of the clean-up plan before you implement. You can also get interim approval of your characterization if you want it.

On the site specific clean up you have to get approval before you perform the clean up of your site characterization and your clean up plan. You can submit those two together on one report, if you want to, or submit them in two reports.

Actually, you can have up to four reports for site specific clean up. That is not only done you can have your site characterization, your risk assessment, your clean-up plan and then your final report, but usual the first three are often combined so that you usually only have at most two reports for site specific clean up.

BUDDY: I am going to talk about Massachusetts. They call the program the Massachusetts Contingency Program. What we find in all the states, all the states programs have to answer the same questions: How clean is clean enough? What is the clean up goal for our sites and for our state? And second, how do we get there?

This is from a Massachusetts fact sheet and you see back in 1992 when they adopted the MCP, they recognized some of the problems. DEP could not oversee clean up of thousands of sites at an expeditious pace. They recognized their resource limitations and implemented the LSP program, a privatized program and its goal was to ensure compliance with the MCP.

It allowed the MADEP to focus its resources on key stages of assessment and clean up at specific sites. The MADEP reserves its right to oversee any site and to oversee any priority site. Some of the lower priority sites have a little more freedom to move on and check in at certain key points. This goes to answer the question of how clean is clean?

Massachusetts adopted a risked base approach and they evaluate each current and reasonably foreseeable site activity and use; they took a realistic look at the site what it is used for now, and in the future.

The site does not have to go all the way through each step to the end before you apply the risk standards. They allow for two interim steps; Immediate Response Actions and Release Abatement Measures; where you can take action on many sites right away. If you know where the source area is, you go in, you attack the source area and then complete the assessment, and that way you can get the risk managed much quicker then if you wait to the end of the process to begin to remediate. And then at the end it says after you go through that process, in the end to get to the closure level you still have to meet the State Standards.

So it is not getting out of state standards just a way to get there faster. This is how they do it. They have three methods to get there.

Method One is look-up tables. They pre-program a set of tables that if you meet these standards under these conditions, the site is closed. They have three ground water tables and nine soil tables in that initial method. Most sites do not close in Method One as these standards are fairly strict. They are all risk-based and protective of human health and safety.

Most sites go into Method Two, which allows for exposure control. Now you can go in exposure assessment. Method One assumes that you are in contact with whatever table you look at. Method Two says if that soil is 10 feet below the ground, will the kid ever really play with it? You can begin to look at the pathways and controls that would be added into it to prevent exposure at those levels, and you can do some things; using method one look-up tables to control the site.

Method three is site specific risk assessment. On remedy selection, the IRA, the RAM, these are the interim steps. The natural attenuation is allowed and Activity Use Limitations, these are controls, environmental controls, engineering controls, institutional controls and they have a rigorous process in how to do them.

This is how they do it. It's registered, it is essentially a permit, like a deed, and generates, if you are going to set up a standard of the site that is different than method one, it generates a requirement for public involvement. And one key component of the program is a MCP holds person violating Environmental Restriction responsible for costs and damages.

The person can buy the property with the restriction and they are responsible for maintaining it that allows economic development and transferring through much quicker. By not being involved in every step of the way on every site, they look at the high priority sites and let the LSP manage the lower priority site. LSP still needs to report on key steps; phase one, phase two, remedial action selections and the Department can approve, not approve, or ignore them. The LSP can move forward and at the closure, the Department reviews to make sure that meets agency standards.

The MCP has programmed in a schedule. Once you report a site to the DEP you have a certain amount of time to get some of these things done, and you have one year to do a tier classification. That is essentially ranking risks of the site. Is it high priority, low priority? And based on how you rank a site, other schedules come into play. So you can see a site should close or have an action in place within six years of the initial report.

The MCP is a difficult, rigorous program. The LSP program a three legged approach; three legs that hold up the stool. The LSP is a potentially responsible party. You have to meet the requirements of an LSP and still meet the requirements of the DEP public participation of Massachusetts. They have a program with two components. One is how to get the information and the second is how to get involved. How to get the information? DEP maintains files that can be reviewed; same as New Jersey. Information is maintained on DEP database, the same as in New Jersey. The PRP sends copies to the local officials so the local towns and agencies get copies of key reports and also publish those in the paper. The involvement is a petition process, so through those notifications, if the community decides that they want to have involvement, they need to petition to the responsible party and the DEP, and then if a formal PIP is required, then one will be set up.

The DEP has built in requirements for public notification and involvement and in many cases the informal process is as effective, if not more effective, than a formal PIP. So they allow that to happen. The PIP is the formal process if a petition is granted by the Department.

Now, a quick summary of the Massachusetts Program. The MCP, what we wanted to do is run through a site; an average gas station. We made some assumptions: no potable wells within a thousand feet of the site and looked at Benzene numbers to illustrate what would happen in the

different programs. So we have an intersection of four properties; gas station, tank field, dispensers, flow station. The dots are monitoring wells.

This is the first ground water sampling. The forms are Benzene; you have the highest concentrations 980 ppb, 36 and 1.2. So the question now on this site is, how clean is clean enough? How do we go about it?

In Massachusetts, you use Method One look-up tables and find that if the ground water has not been used for potable use and will not in the future, the site would be closed. Because these are the look-up tables. This is what is in the MCP. GW-1, GW-2, GW-3 are the three tables.

GW-1 is the drinking water standard in Massachusetts, New Jersey. Those are the ground water standards, which are the same as the drinking water standards. On this particular site we meet all the requirements of the GW-2 which is the appropriate for the use of the site.

IRENE: What is GW-2 and GW-3?

BUDDY: GW-2 would be if there is a vapor concern in the area. They use Benzene at 2000 ppb as their trigger assessment. GW-3 is impacted surface water so that doesn't necessarily go. You can see the GW-3 is actually less then the other. They look at the use, the end receptor and evaluate what the appropriate samples are.

In New Jersey this would default to Class Two since most of the waters in New Jersey are classified to Class Two. This is above drinking water standard so, put in additional wells in an effort to delineate. You have water concentration, means more delineation. Now you go off site and get access agreements, drill the well off site and put the well in 1.5. You have to put more wells in, getting close but there is a two over there, I have, after five rounds of delineation efforts, probably a couple years to get to this point for access agreements. We got to the point where now this site regards a RAW.

So in Massachusetts this site was closed. In New Jersey this site has just entered the RAW phase and we would be required to submit a Remedial Action Plan proposing actions be taken to the site to clean it up to the drinking water standard.

So this is a fair assessment of an average site and the differences of what goes on between the two programs. Now I am going to get into the metrics. This is from the EPA and New Jersey's own numbers; they had a small working group looking on why sites don't get closed. This is only on the UST systems and these numbers were self-reported by the states.

In this particular study, you have Michigan, Florida, California, Texas, all states with significant case loads. What we have is the number of cases that are reported. The number of cases, working on those cases for UST program and then the case count. A lot of the states have significant caseloads. This is a look at the states we looked at today, New Jersey, Massachusetts, Pennsylvania and a caseload history. This is also data from the EPA that they maintain on a yearly basis.

What is interesting here is you see Massachusetts and Pennsylvania with their programs have been able to reduce case loads over time. Kind of a peak there, in 1998. At the same time, starting in 1998 the New Jersey caseloads continue to increase. These are open active cases. They have not been closed. The end result shows states that use risk based standards and have options and flexibility built into them have the ability to get sites closed. New Jersey has very strict standards in a prescriptive-type program. Massachusetts and Pennsylvania have flexible risk based and performance based programs. If you look at the national numbers they all look about the same, almost all the states have been showing decreases in case counts and UST programs since 1998.

I think that last year New Jersey was last in the caseload count. It changed because the cases actually went up. And I think in the remaining 48, 49 states that reported caseloads, they went down.

[WAYNE]: If we had different ground water standards for Pennsylvania and Massachusetts our graph would look very similar; wouldn't it?

BUDDY: There are strict standards that are difficult to get out of and we have to touch base with the Department every step of the way, which is bad for the Department I don't think there is any real value added.

WAYNE: So if we change the remediation process for a certain milestone, in your opinion, that would go faster?

BUDDY: I think it would follow the same with the other states that have done it.

JOHN: The other 48 states that you were talking about, you have the data on the caseloads? Are their standards flexible or are any of them as stringent as New Jersey? Are the standards for the other states that you are tracking here, are they as stringent or some of them as stringent as New Jersey or are they all flexible?

BUDDY: I have heard it said that New Jersey has the toughest standards in the country.

JENNY: There are states that are as stringent as New Jersey. I want to clarify one thing. If the GW-1 applies, and the definition is in here too, any time you have a current or potential future use as drinking water. GW-2 may act as a source of volatile material to indoor air. GW-3 is all ground water discharge to surface waters, but because the standards are based on realistic risks achievable, actually most of sites are cleaned up, fifty-seven percent of the sites, and that helps get the sites through the system quicker.

IRENE: 57% of the sites meet one, two or three but do we know of that 57% what percentage would have met GW-1?

JENNY: No I can get the numbers.

JOHN: Are Pennsylvania and Massachusetts also looking at the vapor issues?

JENNY: Massachusetts had standards in 1993.

BRUCE: They were looking at risks back in the '80s.

BARRY: I find the discussions very interesting relative to the use of the term “reasonable” and “unreasonable.” That is a very subjective statement in the sense that Pennsylvania policy has determined 10^{-5} be reasonable, but New Jersey policy dictates 10^{-6} is reasonable. So I think it is somewhat unfair to say that it is unreasonable. Unreasonable relative to whom? Some people may say it is unreasonable, other people may say it is perfectly reasonable.

FRANK: I am going back to Tony's comment earlier about how many sites of the ground water contaminant, how many of those cases would go away if these DEP standards were ten instead of one. I would venture to say that a lot of them would go away.

TONY: And still be protective.

FRANK: The point I was trying to make is that I believe that just the difference between 10^{-5} and 10^{-6} very significant. I am not trying to downplay the situation but that factor does have significant effect with regard to the number of cases that may be in the system. Massachusetts, it doesn’t go quicker because of the process. It goes quicker because the number is significantly higher.

BRUCE: In Pennsylvania the ground water standard is five; in New Jersey the standard is one. I would not tell a client in Pennsylvania, "You are at four so you are okay. You don't even have to get a sign-off from the State." I would tell them, "you better go to the State, you have contamination. You want to get your No Further Action Letter from the State in New Jersey, Pennsylvania confirming that they agree that you are within the standard." But I don't think there is going to be a substantial difference in caseload because of a difference in standards. What is paramount to address is the process.

JENNY: Massachusetts uses 10^{-6} as the risk management goal calculations also, and you compare it to the standard to which it is not drinking water, but you determine that you have a release and it is not a time critical release. You can simultaneously do your investigation, collect your samples, write your report and notify DEP, and close the site, which saves time.

WAYNE: I don't see it as a time saving process. It is the numbers, not the process. You are going through a process where you are getting involvement, reaching out to other parties, getting the DEP involved in major milestones, going back and forth in getting them to review your work, comment on your work. That takes an awful amount of time.

ADAM: I want to talk about staffing, and Buddy if you want to talk about numbers --

BUDDY: 10^{-5} or 10^{-6} doesn't make a difference. Massachusetts prebuilds exposure pathways. We have a very difficult time in New Jersey eliminating exposure pathways. We assume that's where conservative assumptions come in. We assume people are drinking it all the time. We assume they are exposed to it all the time. Massachusetts says this site might be in the middle of an industrial area that has water people are not going to drink now, or in the future, so we will prebuild in tables so you move to the next table and I don't have to do site-specific stuff. I look at that table and that's the process part. You have an alternate look-up table already, even though they have the same table we do, we have the drinking water table, but they have two and three already built in. That's where the process comes in, but it goes to the exposure pathway.

ADAM: If you go back one slide, I think the case number is closer to 50 then 73 which cuts that number roughly by a third and actually puts us at the least number of cases on that chart. And I think Irene would probably concur that with that.

IRENE: I think there are probably around 50 some odd --

WAYNE: That is regulated tanks.

IRENE: A lot of states don't regulate. The only number in Massachusetts is regulated tanks.

BUDDY: This is a handout that we got from UST. There is a wide range. Some boroughs have really low caseloads and the field office have higher than any of these. So you know, it depends on which, this is UST only, but if you look at the whole program, when I totaled up the numbers that we were given I think it was 66; 18,000 sites by I forget what the number was, three hundred something.

ADAM: Looking at UST, if the number is 50 that puts the average case at 80 or 90 which I think is sort of the average in UST too. That is the first thing. If you go one slide further, to the UST caseload: 1996 was a period of huge layoffs, the Whitman Administration gutted DEP with all the State wide layoffs. DEP bore the brunt, and we are still not up to those pre-Whitman-staffing levels. One overlay here, at least mentally, is the political shift; there were layoffs and we still haven't built up to those numbers. The caseload numbers have only increased since then. It is really a rippling effect and a double impact what you are talking about caseload and the department's resources.

BUDDY: I also think that this site is built limited to what you guys have to do as case managers, exceed what these guys have to do. These guys leverage themselves, they have a high priority

site, and they have systems in place to maximize their use. You guys see everything, we can't move without you guys seeing it and approving it, that's created a huge jam and a damaging effect of moving sites forward.

WAYNE: But we prioritize.

TONY: I just want to wrap up the presentation. We want to go over the recommended legislative changes. We think they need regular legislative change providing more options for ground water remediation.

Number two; we support a permit program so the department had that for sites with IC/ECs. Nobody sends in the biannual report, the property flips ten times, we submit the report and that goes with the institutional control.

Number three makes future purchasers responsible for any additional remediation. For example, if I have a chemical company and I treat or clean up to commercial standards or non-residential standards, but years later it goes residential, the developer or the township should be responsible for further remediation as opposed to going back and chasing the prior responsible party.

Last, we support the fact that if you have a remediated site and the use changes, DEP should be notified somehow.

As for policy changes, first is process. It doesn't make sense that you have to do investigation, pack it up, send it to the department, and wait a few months in order to go to the next phase. Seems like the focus is on the process instead of remediating the site. Get the sites cleaned up. Let us remediate at risk if need be, and prove to the Department, at the end of the day that we have achieved standards; streamline the process.

The existing statutes do allow for site-specific risk assessment, but it is our belief that only one site specific risk assessment was ever approved by the DEP. That goes to the resource issue. Focus on the end use and vision, not process.

Clearly, the Department would be helped if they can carve out the homeowner tanks, that is, 4,000 cases.

The last is: we support public comment on these sites. We just have to be careful if it is participation and involvement is it going to slow up or clean up? If there are valuable comments, the Department should take them into account. We have to be sensitive to the fact that the end goal should be putting these sites to good use.

IRENE: Regarding making future purchasers responsible for additional remediation; how would that funding occur?

ANDREW: I am not sure. The current absolute should be built into your purchase price; your concept of what you need to do to enhance; where you want to go. If the cap is there, good. If not, you need to go into it, build that into the purchase price to make the property more desirable or less desirable. If a municipality wants to use it or if the municipality wants to foster that redevelopment and use public monies as part of it, you know that could be that process too, because that might be the impetus to get past that.

IRENE: I do have one concern about Treasury's Tax Reimbursement Program. The State Treasury has been signing some of those reimbursement programs with developers for sites where they are still responsible parties, and in order to get that money back, the answer is cost recovery, which is extremely long and drawn out, and with very few lawyers in the Division of Law, not very feasible.

JORGE: There are different ways to approach the same problem and some of them have efficiencies and others don't, and we can figure that out. The last time we were forced to be introspective regarding how we do business in the State was 1993. Some people suggested the State is being cleaned up, not by government but by the private sector. Nobody is saying that the private sector should clean up the State in any lesser degree. Any successful program must ensure public interest, protection of environment, and engineering controls in the State of New Jersey. Whether the site is a school playground or daycare center, if you want to do away with them, do not use engineering controls. We are different then Pennsylvania, we need a different program. Our program is bound to be regulatory, given what we know. One of the problems with the program is that it is regulatory driven and all people are treated the same whether you caused the problem or didn't cause the problem, or whether you are going to clean up the problem or not going to clean up the problem. Everybody is treated the same. We need to recognize New Jersey is very regulatory driven and the Department needs to understand that people need help negotiating the regulatory process.

The Department needs to be a part of cleaning up the State of New Jersey. We need to get performance based action versus prescription; clean up versus delineation. We have to move and clean up before we can delineate a complete site. The environmental problems exacerbate over the period of time it takes to delineate. Many have been involved in delineation without any clean up, and who is benefiting from that? Where is the money going for that? We need to accelerate the clean-up process and whatever we do regarding engineering controls, we must assure the public that they are going to be safe and protected for the long term.

ANDREW: The concept I pulled from the presentation is how risk is assessed and how the standards are based. Based on the risk and we have some false assumptions made during the discussion last week on that same topic. I am not here to advocate changing the standard. Most of my neighbors have underground storage tanks. They stopped putting in gas lines and all around me there's homeowner UST cases. I know we are trying to outsource those but I think it poses a good example. The water supply from my area does not come from my neighborhood and isn't going to come from my neighborhood. We are too close to the ocean, too shallow and not a viable resource, and talking about if it gets to a stream it is going to volatilize.

The risk to many in my neighborhood is from vapors and having piles of soil all over the neighborhood, and yards that aren't done. There might be someone else in the backyard but it is the person behind the backyard too, because they are staring at it everyday and those cases sit there and stay not so much because of process alone, it is because we are establishing a risk assessment that isn't realistic to that site. We are trying to make them clean up to a drinking water standard for water that is not going to be used for drinking water, and they are not focusing on the remedy that may be necessary for vapor control because we are bound to the this concept that we need to go to the absolute protective assumption across the board to establish the numerical standards.

Some of this is going to come out in the soil standard proposal, but the assumptions are like that all the way across the board, and it applies all the way. I hope what this morning started to bring out was that is not just for private industry, not just for development, it is for schools. And we are telling people that these numbers are the numbers that they need to reach when in reality, in many sites there aren't risks associated with that site. We are not focusing on the risks associated with the site. If it is underneath the foundation of a school and it is not causing a vapor issue, I don't want my tax money spent on that. I'd rather it be spent on school programs that are necessary for children. If it is a vapor risk, I want it focused on that, not delineating every ballfield in the state which may or may not be an issue because of the assumption we are making.

We have resistance because it is a complex concept. How can you have a site-specific standard? You have to have a site-specific standard because otherwise you are applying unrealistic numbers. It is not a question of reasonable versus unreasonable, it is realistic versus unrealistic, a fiction versus reality. A lot of times what we are doing is applying the regulatory fictions to the site and prioritizing our resources in a way that doesn't make sense.

We are not focusing on 10^{-6} or how that risk is appropriate. I think that was brought out in Pennsylvania, not so much the number, it was the number being realistic to that site, and Jeff is not here to rebut. To say this area can't be drinking water, when it's never been drinking water; the Department has the ability to go to that, without I think statutory changes, saying realistically this is not a drinking water source for the following reasons.

That has to be done conservatively because you can't make the assumption unless you are very conservative. You are saying this is not going to be a drinking water source is practically forever. You can come back and change it, but there are plenty of sites in the state; there are clean-ups in Long Branch where ground water cannot and will not be used for drinking purposes for a lot of reasons. If you start pumping it you are going to pull in the hole which they found out at Point Pleasant with over years of pumping. So we are cleaning up sites in Long Branch to levels that make no sense. We are spending money there; sometimes a lot of it is public money, where it is absolutely not necessary. Meanwhile there are other sites that still haven't been addressed or even looked at. What we are taking from this is we really need to focus the risk based statutory program into a real risk basic regulatory program, and I don't think we are doing it.

TOM: I would like to rebut for Jeff. I think what he was trying to say was the Clean Water Act does call the ground water the waters of the state; a resource to be protected. And if it is classified as a potable source, it doesn't mean that is presently being used as a potable source, but it is a resource that the State has access to and is protected as such, so you would have to change the whole orientation of the Clean Water Act.

ANDREW: No. If it is possible to be a drinking water source it is still treated -- if it is not going to be drinking water you have 3A and Class 3B, it would be recognized as such. It would still have resource value. It is still there.

TOM: Those classes are natural conditions, 3A and 3B.

ANDREW: Yes, but 2B is also recognition, never been used.

TOM: It has been attempted several times and because you can never show this is not going to be used, it is just an impossible thing to do.

ANDREW: It is not impossible. It is difficult from a political sense to do.

BRUCE: So we don't get caught up in the numbers in the risk assessment, you never get to those numbers until you have said there is an exposure. If there is no exposure, you never hear the numbers. I think the program would still fit within the overall requirement of 10^{-6}.

DAVID: Over what time frame? Not as drinking water. Next five years? Next ten years? It is a rhetorical question.

ANDREW: It is not a rhetorical question. It is a question.

A SPEAKER: Can ground water in Newark be used for drinking water? No. Should we be able to get to a place where we might want to get to in 50, 100 years? In Camden they don't have enough clean water. There are some places that will never be used for drinking water, but there are plenty that you are prepared to write off that we can't afford as a state. And when you talk about 10^{-5} or 10^{-6}, one of the biggest problem with DEP regulatory process is that they look at every single chemical and exposure in a total vacuum. And if you look at the cumulative toxic

load in our body it adds up. There are plenty of sources that this Department has written off in the classification exception areas that we can't afford.

ANDREW: The areas that you can see are areas in the state that wouldn't be used; you can get into good technical debates as to whether or not there can or can't be. I don't think anyone has a problem with that being a very conservative approach, but what we are not doing now is recognizing and when you talk about CEA that is a natural attenuation program approval. To make sure that remains protective during that natural attenuation program, it is not written off.

JANE: Going back to the discussion about the issue of the site-specific standards or the alternative remedial standards because they will be coming up in the soil standards proposal. I think we have to get back to the overall goals of the clean-up program and hierarchy of remedy selection and that goes to not just risk management, exposure management, and risk reduction, but the primary goals of clean-up is removal of risk. And in any occupational health or environmental health exposure scenario, the idea is to remove the exposure entirely, and then there is no exposure, and remove the source. The source removal is the prime mechanism.

Only in cases where that are physically impossible or infeasible can these other risk reduction risk management measures be put in place. I certainly don't see turning them over to a LSP to make all these decisions. I think those should be the exception rather than the rule, and that the primary prevention aspects of a clean up, and the permanent remedy be the preferred one. If that is clear that is the mechanism, then everything else strives toward how to get that done. I agree. Streamline the process. It has to happen faster. But to back away from a standard, the primary prevention method of a permanent remedy has to be the over-arching goals of the program.

JENNY: I am glad that you brought that up, I think some cases it is the technology is not there to achieve a permanent remedy and so we have to focus on some of these other exposure risk reduction measures. The National Academy of Science recently released a report that isn't feasible in many situations to remove the source technologically. If there is agreement, we think that an appropriate forum would be a working group with the technical expertise and with all the perspectives that are presented to hash out the more detail issues.

OLGA: I don't think we discussed what the goals and measurements really laid out, and I don't think there was clear consensus. We all agree that protecting the health and the environment are critical but for example, in the way that you suggested, the term that you used, how to evaluate the success of the program, the metrics, I don't think the number of cases closed is the measure. I think the amount to which we have cleaned up the environment and the amount to which we have eliminated disparities between communities that are over-burdened and less burdened, I think there are other outcomes like that we need to look at in our program in addition to the statistical, "how quickly did we close the case."

In the example of Massachusetts, a case was closed quickly because under those standards it didn't require any work. Well, to me that is not a great measure of success. If we decide that most of our clean-ups don't require any work and leave them the way they are, I don't want this discussion to reflect that we are somehow all in consensus with the way this has worked out.

IRENE: I don't think many of our discussions have reached consensus.

OLGA: The ground water we are talking about, the exposure in terms of the ground water, there is benefit to the ground water standard for one thing; contamination spreads through flow of ground water. So one benefit of cleaning it up to a high standard is that not only are you protecting the drinking water as drinking water source, but you are also preventing the spread of contamination from one area to another. Ground water can make its way into streams and rivers and lakes, so you are protecting our surface water quality at the same time. It is not just a matter

of, “Is it going to be used for drinking water in the next few years?” There are other policy considerations too.

IRENE: I will just clarify that I think in the Massachusetts program, one set of standards looked at surface water impacts. They were not looking at just drinking water impacts. Pennsylvania does too.

BARRY: I believe that we had agreed at last Friday's session that we were going to get the presentation on soil standard. Did we set a date?

IRENE: We did not set a date. I think there was a fair amount of interest for folks to see a presentation on soil standard. Yes, so sometime in July.

TOM: Before the end of the comment period?

IRENE: Yeah, before the end of the comment period, the week after next, the week of July 1. Are you in that week? Does the week of July 9 sound like something doable?

BARRY: I am asking for input relative to what people would like in the presentation.

IRENE: What was the other thing Barry, that you and I thought needed to be part of it historically?

BARRY: There was a question whether or not you wanted to go back historically as far as -- in terms of what is in the Brownfields Act relative to what prompted us to do what we did and Jane also seems to be interested relative to alternate remediation standards.

JANE: One more area, why this PQL that was out and now it is back in, why?

TOM: I was interested in not only on the technical basis for the alternate remedial, but the statutory authority for that and whether you debated the interpretation of that. The impact to ground water numbers, metals versus organics, why that distinction was made and changed from the first proposal to this proposal?

IRENE: The week of July 9.We will set up a presentation. We will be drafting white papers within the last two weeks, what I thought we would do is collect comments, redraft and at that particular point in time send out email for options. Do you want to get back together, break into groups? Do you want to elect to be on certain white paper6 discussion panel? Should everybody be in the room? We will send something out kind of asking for input on how we want to proceed from there.