NEW JERSEY CLEAN WATER COUNCIL

AND

NEW JERSEY WATER SUPPLY ADVISORY COUNCIL

In the matter of:

2003 PUBLIC HEARING Transcript of

RECLAIMED WATER FOR BENEFICIAL REUSE Proceedings

Computer-aided transcript of hearing testimony taken stenographically in the above-entitled matter before KAREN L. DeLUCIA, a Certified Shorthand Reporter and Notary Public of the State of New Jersey, at the Holiday Inn, 390 Foresgate Drive, New Brunswick, NJ, on Wednesday April 16, 2003, commencing at 4:10 p.m.

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I N D E X

SPEAKERS

MR. McCRACKEN: As I mentioned before, the purpose of our meeting today was twofold. One, to hear some good presentation on the topic that we're taking comments on. Secondly, this is our annual public hearing that we hold as a Clean Water Council where we receive testimony and comments concerning various DEP programs. We then take those comments, we try to package them in a way that we can show to the DEP Commissioner how people feel in the State about various programs and issues that are occurring in the State, and how the DEP can better respond to those comments and concerns and make sure that the programs are designed in a way where public information is available to the Commissioner for his decision. Some of the Council members are present at the table. Also present is Kerry Kirk Pflugh, who has done a great job for the last few years.

We have some ground rules for the people offering testimony. We will allow five minutes for your initial testimony; at the end

if there's time available if there is no one else presenting and you wish to continue, we

can give you an additional five minutes. There was a registration that was offered earlier, and a number of people have registered. For those that haven't yet who would like to testify, there is some cards that you can fill out and bring them forward so we know that you are going to offer some testimony. And also the purpose of the card is so we can respond back to you after the comments have been taken and a response has been formulated to the Commissioner.

We are going to be accepting written comments until May 29, and that's sent to the DEP. I believe in your packet there's a sheet in there that indicates where to send those comments. Also when you come up to present, please, again, give us your name and affiliation. And if you have any written submittals that you'd like to offer us, please provide those to the front table as you come in. And we'll be available to answer any questions if you have some specific questions

about process.

And, again, this is not a forum where we can then discuss back and forth issues

of maybe talk about what could or if be. We're looking to receive comments from the audience, and we need to stay on that tract so we can get everybody's comments in. We'll accept those; we'll take those back to the Council; we'll digest them; we'll put them out as recommendations to the Commissioner; and we can send out copies of the responses that came from this hearing.

So please with that -- oh, and also I should mention that Kerry Kirk Pflugh will be the official hearing officer for the Department.

So our first speaker is Kirstin McPolin. So if you would, please.

MS. McPOLIN: Good afternoon. Thank you for the opportunity to speak today on reclaimed water for beneficial reuse. My name is Kirstin McPolin, and I speak on behalf of Clean Ocean Action, COA, a coalition of 170 environmental, fishing, community and business

groups concerned with the health of the ocean. COA's comments today focus on the deficiencies of and need for a strong wastewater reuse program in New Jersey that is protective of

human health and the environment, subject to public review and formally adopted by the Department of Environmental Protection, or DEP.

Beneficial reuse of the reclaimed wastewater in the State of New Jersey is not a common practice, but it is growing. With recurring droughts and increasing populations, the option of wastewater reuse is an important opportunity. COA supports the concept of beneficial reuse of reclaimed wastewater; however, has serious concerns about the lack of formal guidance, rules and regulations, the lack of public involvement in the development of the beneficial reuse program thus far, and the fact that the program is not part of a comprehensive strategy of water management.

New Jersey discharges an extraordinary volume of water into the Atlantic Ocean that if properly managed could be

reused. Based on COA's report "Wasting Our Waters Away", nearly 170 million gallons of treated fresh water per day are discharged into the ocean totalling to nearly 65 billion gallons annually. If all this water was poured

into one-gallon milk jugs and lined up end to end they would circle the earth 412 times. This discharged water is a precious resource that would have naturally recharged bogs, wetlands, rivers, estuaries, and is a considerable volume of water that has the potential for reuse.

As part of our report, we also surveyed nearly 200 citizens of New Jersey and found that 71 percent would not oppose reuse of wastewater if the water was treated properly. I emphasize the citizens would only support reuse if the wastewater was properly treated.

Despite this fact, New Jersey does not have a final policy or formal guidance, rules and regulations for the beneficial reuse of wastewater to protect human health or to protect environmental health of terrestrial, coastal, and ocean ecosystems. Several

environmentally sound reuse programs have been developed in other states as discussed earlier today. And with these new technologies, the quality of wastewater can be restored to certain levels, and as a first step reuse for the non-potable purposes of irrigation,

landscaping, golf courses and cleaning streets.

Without a formalized program DEP is granting permits for reuse and making decisions under a draft version of guidance that has undergone few changes since its appearance in 2000. In fact, when the original version was made publicly available it stated that DEP intended to initiate the development of regulations to promote and implement a reuse program; however, the most recent version of this guidance has deleted any statements of this intention. As a result DEP's plans for the reuse program are unclear and mixed messages are being sent. On the one hand DEP promotes its draft guidance originally introduced in 2000 and issues permits. On the other hand DEP failed to develop and implement

formal guidance, rules and regulations to ensure program consistency, public involvement, and environmental protection. This lack of governance can result in negative impacts from reuse which could lead ultimately to public rejection. To address this situation COA recommends the following:

Convene a task force of environmental citizens, planners and experts to draft the policy recommendations for reclaimed water for beneficial reuse.

Ensure that a reuse program consults with watershed management areas, is subject to public review, is peer reviewed, and includes demonstration projects that involve surrounding communities.

Develop formal regulations subject to public review to ensure consistent application of standards to protect human health and the environment for all new permits issued, as well as those already outstanding.

In conclusion, the State has a considerable amount of work to do in ensuring that the program is environmentally sound,

publicly supported and successful. COA will look forward to working with the Council, DEP and other groups on this issue. We intend to further detail our comments for the record.

Thank you.

MR. McCRACKEN: Our next person to testify is Richard Kunze from the Ocean County Utilities Authority.

MR. KUNZE: Thank you.

My name is Richard Kunze. I'm employed by the Ocean County Utilities Authority, which operates three regional wastewater treatment plants with a combined average annual daily flow of about 50 million gallons per day, which is discharged into the Atlantic Ocean. I'm also a member of the Barnegat Bay Estuary Program Management Committee, which has recently completed a comprehensive conservation and management plan for the Barnegat Bay watershed.

My comments are a combination of the OCUA philosophy, and my own personal feelings as an environmentalist. Much of what I'm going to say has already been said.

I feel that the use of reclaimed wastewater is definitely a piece of the wholistic watershed puzzle. Unfortunately, since the implementation of the Clean Water Act of 1972, nobody has looked at the use of water from a wholistic aspect. Traditionally water purveyors and wastewater treatment plant operators lived in separate worlds. It takes a drought to get them talking.

The use of reclaimed water, and I say water because after treatment it is no longer wastewater, are unlimited. Toilet to tap is technically feasible. Indirect reuse has been practiced by municipalities downstream of the first town on a river for years. Public education, including the education of elected officials is extremely important to acceptance of the concept. Some of my colleagues have said to me that DEP shouldn't encourage reuse, that they should mandate it to get the ball rolling.

The cost of additional treatment for reuse will be substantial. As an example, if a wastewater entity recharges to an aquifer,

shouldn't the water purveyors who are drawing from the aquifer bear most or at least some of the cost. One small economic incentive could be a rebate on the wastewater treatment plants NJPDES fee for beneficial reuse of its effluent. As a suggestion, a percent of the flow reused should be doubled and rebated on the NJPDES fee.

As an example, at one of our plants the annual NJPDES fee is about $100,000. If 5

percent of the effluent is reused, a 10 percent rebate, or $10,000 should be given. A plant that reuses 50 percent of its effluent would pay no NJPDES fee.

Thank you very much.

MR. McCRACKEN: Thank you. That was a good suggestion.

Next up, Captain Bill Sheehan.

Let it be known he's not here. Maybe he has something written he submitted.

George Hawkins of Stony Brook Millstone Watershed Association.

MR. HAWKINS: Good afternoon. Thank you for the opportunity to speak. My

name is George Hawkins. I am the executive director of Stony Brook Millstone Watershed Association that has been concerned since 1949 with protecting water resources from head waters to discharge of the Millstone River and all of its tributaries.

I do generally have a hard time explaining myself in five minutes, but I will try in four points. First to offer general support to the idea. Second to offer some caveats to that general support. Third to make

some specific recommendations. And fourth to highlight the relationship between this issue and the "big map" that we've all heard about.

The first, if you gave me five seconds to testify rather than five minutes I'd say go for it. The idea of beneficial reuse of treated water is a good one; obviously there's all sorts of protections we need, but it's high time that move this into a higher level of importance and move forward. So we definitely generally support the idea of beneficial reuse of treated wastewater.

The second caveat; these are things

you've all heard, but I'll repeat them. And I have at least three; I know that there's more.

The first is base flow and streams. In central Jersey many of our streams dry up in the summer, and, in fact, most of the flow is coming from discharge treatment plants. That's not a happy situation, but we prefer flow versus no flow. Obviously the water that has been used by these facilities and is being discharged was percolating into the ground. So in part, the treatment plant is returning to the stream water that has been

taken away from the system, but transfers of this sort in reuse has to be looked in the context of the ecological needs of the waterway themselves.

Second is inner basin transfers. The question of when you're using and using water for beneficial reuse potentially in an area that's different from the watershed in which it was first found. I think that will come up with the "big map", which is why I may come back to that issue almost inevitably. We do have concerns about that, as well, again for

ecological sources of the area in which it was from.

The third is human contact. I was pleased to hear about issues like continuous monitoring, automatic fail-safes, and high levels of protection for this water that might come into human contact, but certainly a systematic and regular methods that's applied broadly and fairly.

Third for a set of recommendations, and again I have three.

The first is to assess this issue in the comprehensive notion of a larger water

picture. The question of the stream flows and whether or not you're going to take out water and reuse it, rather than allowing it to be part of the stream flow is a better equation if stormwater rules are allowing more infiltration into the system which supports stream flows. So obviously each of these ideas don't work in isolation, but become strong as a comprehensive solution. It would be good to hear from the Department the strength of all of these solutions together and how important they are

to work as a group, rather than isolated issues separately, which by themselves make sense but separately could actually fail. It's important to have a comprehensive water program of which this is a piece.

Second is to stage the implementation of water reuse. Obviously there's tremendous question on behalf of the public, as there should be. These questions can be answered, but there's no reason to all of a sudden switch on what has been off, but make sure we have a staged approach; prove and demonstrate, trust but verify as we go forward building upon more and more complicated and

more areas where the public may have questions on past success.

And the third is in the system that's devised make sure that environmental benefit is reviewed first before there's a cost benefit analysis. Often the cost benefit is supposed to come in where the environment is on one side and cost is on the other. In our judgment there are plenty of projects where you can protect and demonstrate environmental

benefit first and make sure that that is a demonstrated truth prior to wondering whether it makes sense. And that should be an initial threshold so that the public does not be concerned about potential harms.

Last about this issue with respect to the "big map". The ""big map"" which I heard Amy Goldsmith describe as "green" versus "red"; we'd like to look at the "big map" maybe as a "blue" map, because a lot of what's driving the mapping is water resources. It is the critical issue in my judgment on the environment in the future. And a lot of the areas which are "green" which are supposed to have development go to them and be incentivised

(sic) are already in areas where there's not a lot of water.

We don't see how you're going to drive development into certain areas where there's not a lot of water unless you transfer it from areas where there is. And you end up with this very interesting situation where if you apply for water use in a "red" area you might get the answer no, but if you apply in a

"green" area you get the answer yes but the water is coming from the same place because there isn't any more water in the "green" area. This raises the inner basin transfer question; this raises the stream flow question. So how we handle the use and beneficial reuse of water within the context of shifting water resources, TDR for water, in essence, in the State is going to be an issue we're going to have to look at with great concern.

So thank you very much.

MR. McCRACKEN: I have a question on that. It's something that I've often wondered about is how we better get a handle on inner basin transfers, as well as the idea of

interconnections that we ran around doing during drought periods before to supply better opportunities in those areas that were hurting for water; and yet do we have good water balance and stuff. Make sure that when we make those interconnections between water companies, can we do that safely, and what sort of analysis needs to go in there to make sure we

can do that transfer.

So if you have any thoughts you'd like to include on that specifically, that would be great.

MR. HAWKINS: I don't have any immediate; I wish I did. But we'd be happy to be engaged because that's a question that needs to be answered. So thank you.

MR. McCRACKEN: Thank you. And you even had a minute to spare.

Dan Van Abs from the New Jersey Water Supply Authority.

MR. VAN ABS: I'll use his minute.

My name is Dan Van Abs. I'm manager of Watershed Protection Programs with the New Jersey Water Supply Authority. And thank you for having us here.

The Water Supply Authority supports efforts by the New Jersey Clean Water Council to address the concept of beneficial reuse for treated wastewater. As a major surface water supplier for central New Jersey, the Authority recognizes that our increase in population will need water; that water supplies are limited;

that increasing our supplies will require expensive measures; that it makes sense to use water efficiently; and that reuse can play a major role over time. We are taking action on this issue.

One major question is this: While the public may recognize from the drought that our supplies are limited, do they make the connection that we can't solve all of our water problems by just building new traditional facilities?

Unless the public supports a major move to the use of reclaimed water, it will be very difficult to put in place the regulatory financial and institutional systems to make it work because the intentional use of reclaimed water is a major shift from New Jersey's historic patterns; in other words, we must move

from yuck to yes.

Supply limits are an interesting issue. The 1996 Statewide Water Supply Plan clearly acknowledged that many parts of the State face supply limits either now or in the foreseeable future. In the Raritan Basin I

want to mention that based on recent projections and allocation limits, and plus possible drought needs of northeastern New Jersey, the existing Raritan Basin system supplies will be fully obligated soon, well before the 2040 date projected by the 1996 plan. During the past drought in the Raritan Basin domestic wells and several areas went dry by the dozens, and many streams dried up completely.

We have a tradition of being a water rich state, but have not addressed the implications of having the nation's highest population density. Unfortunately New Jersey is not planned for efficient use of water, nor built for it. We lack the planning regulatory utility and economic systems necessary to make efficient water use through conservation, reuse, recycling and appropriate use. One of

the things we want to mention is that it is not just reuse, that it's also conservation. Has to be in there.

With regard to beneficial reuse and recycling, our feeling is that each utility and

government that has a responsibility for some aspect of water management also has a responsibility to address these issues. One important lesson from other states is that major increase in reuse and recycling will not come from ad hoc uncoordinated efforts. An integrated approach is necessary to elicit action.

Florida's system requires both water supply and wastewater utilities to address reuse opportunities, especially in areas where water supplies are already limited. New Jersey's Water Supply Critical Areas, on the other hand, imposed restrictions on aquifer withdrawals, but did not integrate wastewater utilities, reuse, recycling, or conservation activities in any significant manner. The Department of Environmental Protection can help by integrating its water allocation, water conservation, water quality,

wastewater management planning requirements to highlight and implement reuse and recycling opportunities so that all major players are involved cooperatively.

The Water Supply Authority by direction of its Board of Commissioners is moving forward. We are beginning initial studies on potential roles for the Authority in these issues to help delay the need for new water supply facilities and to serve as a role model for action. We're working with DEP to identify the best uses for these funds and to create an integrated approach that really works for our water resources and water customers of the Raritan River Basin.

There are two major opportunities here; larger development and redevelopment projects can incorporate recycling where most wastewater generated in buildings stays on site for reuse. New Jersey can also look for our wastewater treatment facilities to determine how to reuse treated flows in existing or new uses around those facilities, such as through "green industrial parks". Most of these wastewater treatment facilities are located in

industrial areas, and so attracting new water-dependant businesses to such locations rather than "Greenfield" sites could be an

important component of Smart Growth.

Smart Growth requires smart resource use. A one-time use of our potable supplies and discharge to salt water is not smart resource use. Success will require challenging the status quo so that people will recognize opportunities and act on them. Changing the current system will require a great deal of effort over many years, but every program must have a beginning, and the Authority is pleased to be involved in that beginning.

Thank you for the opportunity to present this testimony.

MR. McCRACKEN: Our next speaker is David Pringle from the New Jersey Environmental Federation.

David Pringle?

Okay, then Andy Zinkevich, Applied Water Management.

MR. ZINKEVICH: Rather than go through all of that, I'm just going to

summarize it so as not to repeat some of the good things that were said before.

I'm Andy Zinkevich, and I'm from Applied Water Management. I'm an engineer with the company. The company is one of New Jersey's leading proponents of the beneficial reuse of reclaimed wastewater. And as an organization whose reputation and success has been built on the practical application of this concept, we really do applaud the efforts of the NJDEP towards promoting the reclamation of water for beneficial reuse.

The examples that were presented before by the panel were varied; there were a lot of different applications. One of the key items that seemed to be out there was that even though there are a lot of great opportunities in the industrial area, it seems that particularly in New Jersey, for one reason or another, industry hasn't latched onto the idea of recycling as much as it might. I think there are a number of reasons that might affect that.

The two primary causes I think that kept coming up over and over again were

acceptance as a major issue, and it's a valid

one, and it's one that has to be dealt with. And I think economics are a major concern. It costs money to recycle. It costs money to reuse the water. We heard about six mile pipes. We heard about pipes that were put in part of another construction. In order for those type of things to happen, there needs to be some kind of support or incentive for the people that have the potential to reuse water, as well.

In terms of focus questions, our written testimony deals with all the focus questions, but I'd like to identify a few key things. In terms of how we feel about it I think I already made that pretty clear. And I think the point is that there's really no technical reason why a lot more water shouldn't be captured and reused. And from all the examples that we heard, there are very few uses that in one way or another can't be applied.

In terms of the pros of using it, as other people have said, we need more water and this is the way to get it. The public health needs to be protected, and those are

some issues that can be dealt with both in terms of regulation and technology.

The key items that I'd like to jump to in terms of the questions are two.

One, I haven't really heard a lot so far about the education matters with respect to the reuse. The educational issues that apply here go directly to the public perceptions of the benefits and the risks associated with reusing water and treatment. And there are a couple of ways to do that. I think the State's in a good position to play that role of promoting and pointing out the examples of successes and clarifying some of the issues that are out there in terms of regulations and so that the environmental community and water resources managers in general can work together on these issues.

Another place to go, nobody has really mentioned either, is that in the schools, in terms of we have a number of systems that Ed had mentioned before that recycle water within schools, but in terms of education in schools, the more materials can be gotten to school systems I think the sooner

people will be educated in terms of the possibilities of recycling. And when it becomes more of an ingrained concept, it's going to work better.

In terms of the regulatory process and some recommendations, I think one of the -- a couple of these things are already moving forward with NJDEP, and we're really pleased about that. Probably one of the key ways that the regulatory process could be improved is in the time it takes to get permits processed. We know how much time it actually takes in terms of review, and we know that there's a large load of permits out there, and in order to get the public participation that's needed and in order to work through the process, we appreciate the commitment to expedite permits that involve beneficial reuse. And it's probably one of the best ways that we can imagine to illustrate the commitment.

And the technical manual for reclaimed water for beneficial reuse that's out there, I believe it's still in draft form; there are a few items in there that we'd like to address. There's a minimum requirement for

a facility to get a Category One permit that the facility be at least 100,000 gallons a day or larger. We think that there are lot of worthy possibilities at a much smaller level both in the commercial and industrial level, in particular, that that limitation -- that that minimum limitation of 100,000 gallons a day ought to be reconsidered.

In terms of the monitoring, a couple of other people mentioned the correlation of turbidity and solids in terms of monitoring. We would think that it might be good to have a little more flexibility in terms of looking at online or better approaches to that monitoring that are available, and that on a case-by-case basis that that's one way to go, but there are a lot of other ways to get real-time control.

The requirements for setback for irrigation are something that we believe needs to be considered in terms of the quality of the water that's reused, and not all wastewater is the same. Industrial wastewater that's being used for non contact purposes, hasn't had any chemicals added. Is not that much different

than potable water. And a lot of industrial discharges are, as other people have said, far superior to the potable water that goes in.

The restriction against ponds and connections to receiving waters is something that for all the irrigation uses that were mentioned to strictly try to separate those two items is again something that we would like to see more flexibility in that area.

In terms of the industrial reuse; again, there are a lot of opportunities out there. In addition to the publication, the technical manual for reuse out of the 27 or 30, I don't know how many pages, there's a couple of paragraphs on industrial reuse. And we believe that there ought to be more effort put in to making those opportunities a little clearer to people who might be interested in them.

And the last is funding. There are some funding mechanisms out there for the public sector. There are some fundings out there for the industrial sector. In terms of all the other opportunities, commercial and otherwise that there are, we would suggest that

there might be some efforts added to funding there. And particular one very specific type of application would be in urban areas where we're talking about making use of some of this recycled water on a utility basis. We have to run separate lines through existing areas, but we might be able to reuse some lines; might need some new lines very often; and there's no mechanism whatsoever to help deal with what can be a pretty substantial capital cost there.

And just to summarize, as somebody said go for it. I think it's really, really good that the NJDEP is involved in this as a person and as a company. And I think that this really is -- reclaiming water for beneficial use really is a smart thing to do. And we're for it. Thank you.

MR. ALI: Question for you.

Do you have any idea how much water is used in fire fighting, and is there any potential for using wastewater, clean wastewater for fire fighting?

MR. ZINKEVICH: Most of our distribution systems, water distribution systems actually end up getting designed to

fight fires; the size of the pipes, the storage facilities and everything else. Unfortunately the volume of that flow is relatively small. So it's almost like you could look at it in reverse. And I don't know, 30 years ago or 40 years ago people say what we really ought to do is we ought to use the whole water main system that we have to fight fires and then put the potable water in a smaller system. Another way of looking at it, but the fire fighting alone --

MR. ALI: We see in the summertime in the downtown areas kids opening the fire hydrants and using water. Can it be used as an example that in the drought time people can use fire hydrants, they can use it for watering lawns, things like that?

MR. ZINKEVICH: I didn't understand the question. I mean, yes, I agree.

MR. ALI: Can hydrants can be used in summertime for watering lawns?

MR. ZINKEVICH: If you were talking about a dual water system; certainly there would be some applications for a dual water

system. When we've been talking about dual

water systems, we've been primarily talking about boiler water reuse, feed that's actually one step above the typical potable water that we're getting that would be fed to this system. It would actually be one step above. And whether we go from clean water or wastewater to start with doesn't make a difference because of the amount of treatment that would be applied.

UNKNOWN SPEAKER: When you speak, speak in the microphone or it won't be picked up on the record. It's nice to have a dialogue up there, but the dialogue is not for the record. So speak into the mike and it will be in the record.

MR. ZINKEVICH: Sorry about that.

MR. ALI: So this boils down to dollars and cents in infrastructure development, or some of the factors coming into it?

MR. ZINKEVICH: Personally other than the public perception, I think that right now economics do tend to drive the decisions,

in the projects that we've worked on, do tend to drive the decision making process right now.

MR. ALI: Thank you.

MR. McCRACKEN: Actually right at this time Dave Pringle was scheduled to speak, so if he's come into the room since, NJ Environmental Federation? No?

Jeff Tittel from the New Jersey Sierra Club; is he here?

All right, we're going to hold the meeting open. They were supposed to be here at 4:40 and 4:50 respectively, so what we'll do is we'll stay here for that period of time to see whether they come. But in the meantime if there was anyone else that wanted to fill out a registration card and bring it forward, please do so.

So I guess we stay up here until that time and you guys can go if you want. Thank you all for coming, really. It's a very nice attendance.

(Whereupon, a brief recess was taken.)

MR. DiLODOVICO: Good afternoon.

My name is Tony DiLodovico. I'm vice-president with Schoor DePalma. And I manage the regulatory compliance department at Schoor

DePalma. And I deal with all regulatory issues that the company deals with, as we are a consulting engineering firm dealing with the vast variety of clients, both private and public. We deal with just about every type of regulatory compliance issue that deals with water and water resources.

I did want to come here today. I know there are seven questions that we've been asked to identify, to address. I don't want to specifically go through each seven. I think a lot of the issues were probably discussed today; and I apologize for not having been here earlier; scheduling conflicts. But I did want to definitely touch on number seven and the regulatory process changes that may be needed, as that's what I deal with on a day-to-day basis.

As a background as to if I feel that reclaimed wastewater is a possible solution and why it would, in my opinion, mean

anything, I did do a Master's thesis in 1980 that basically dealt with beneficial reuse. And it looked at using land applications through various application techniques to treat

wastewater as opposed to building tertiary treatment facilities. Again, that was in 1980; we're now in 2003. So it's good to see that maybe finally what I thought was important back then is catching on.

And I worked for the DEP and for the EPA in the 1980's. I was the innovative and alternative technology coordinator at DEP in the early '80s. And then I was the Region Two Innovative Alternative Technology Project Manager and liaison with the EPA headquarters in Washington dealing with innovative and alternative technologies for wastewater treatment.

I also served on the Septic Advisory Committee, Statutory Septic Advisory Committee; I believe we convened in 1999 to look at innovative and alternative regulations for individual outside septic systems. We did develop regulations, and still to this date we

haven't seen them proposed. And I think we had a lot of good recommendations in there to try to get some innovative alternative technologies out there that would help reuse, recycle and reclaim wastewater on an individual basis.

Is beneficial reuse a partial solution for our water needs; it definitely is. Is it the only solution; no. Should we look at it in a vacuum; no. It has to be one of many issues that need to be looked at as we look at our water needs. I was at one meeting, at a stakeholders meeting where I heard a group mention that in Cape May we had blown it because we were putting in desalinization. I don't consider desalinization technology having blown it; it is another technology to look at in looking at our water problem.

There's a lot of talk out there about we are discharging a lot of wastewater directly into the ocean; and if we just take all of that wastewater and recycle it, we wouldn't have as big of a problem as we have down in the south and the impact on the aquifer.

Again, I had worked at EPA in the late '70s and early '80s; and although I was a young engineer and not making the decisions, I knew of the decisions that were made as to why we had built secondary treatment plants along the ocean and discharge into the ocean, and a

lot it had to do with cost effective analysis, and with sludge generation. And it looked at issues like water supply. It didn't look at them in enough detail, perhaps, for a long range, but there are issues as to why we discharge into the ocean and why we don't just automatically recycle and reclaim all of our water.

And as we move forward trying to solve problems, let's not just throw away technology and sound science at the sake of saying this is a problem, and this is how we can solve it. One of the solutions is to look at recycling; one of the solutions is to look at desalinization. There's a number of solutions out there. So we need to use good sound science, and make good technical judgment on how we move forward.

Is beneficial reuse one of the things we should look at; yes. Should we just take all of the wastewater that's generated in Atlantic County and look to recycle it; well, that's not going to be practical. We're not going to be able to take all of that wastewater and economically recycle it all. Should we

look at new development and how we perhaps can get new development to recycle; yes. Is that the best thing to look at; perhaps it is, and maybe that's where we are need to make our focus.

In that regard, I'd like to just come up with some suggestions I have in looking at the regulatory process. Right now one of the biggest problems we have with recycling is the NJPDES process and getting the NJPDES permits amended to allow for beneficial reuse of the effluent. We work with some authorities. We did a report for one of the municipal authorities down in south Jersey were we looked the whole issue of taking that wastewater and instead of discharging it into the ocean to recycle it.

The costs involved in looking at that, we had just looked at taking 1.4 mgd a day to recycle it and use it for golf course irrigation. And we were going to have to spend at minimum three million dollars to upgrade the treatment plant to just provide the water to the golf course. Three million dollars is a big chunk. If we wanted to do it where we

could guarantee all permit conditions that were going to have to be followed, we were looking at a biological process that we were going to have to add, and it was going to cost somewhere around 12 million dollars. The 12 million dollars was cost prohibitive.

So we need to look at through our NJPDES process what limits we're going to set on the recycling and the beneficial reuse component of the effluent to make it doable and cost effective. I know that the Department has draft guidance out there on beneficial reuse and effluent limits that should be met for the different type of uses.

Number one, we shouldn't have draft guidance, we should at least have final

guidance. And we should go beyond final guidance; we should look at regulations. I don't even know if we need legislation to authorize regulations in that regard, but we need regulations. And we should have the regulations based upon sound science and technical judgments. And we should get together, perhaps the people that were involved in this public hearing and the other engineers

and scientists that are involved in wastewater treatment, water treatment, recycling, and beneficial reuse and establish what type of recycling uses are there, and what would be the need to treat the various levels.

We shouldn't have just one across the board; you need to get total suspended solids down to five milligrams per liter on a daily or a weekly basis. We shouldn't just have one set of we need total nitrogen to ten. If we're going to use wastewater as irrigation for crops, for grass lands, for uses where the nutrients would be of benefit, then why are we taking the nutrients out then spread on the land.

In California there are many uses where they just use primary treatment; they don't even have secondary treatment. I'm not advocating that we go to primary, but if we have treatment plants that have secondary, perhaps we can take some of that effluent and not really have to make these three, four million improvements to the effluent. Perhaps we can find uses for the existing effluent quality.

And I think we need final guidance and we need regulations that perhaps the regulations refer to the guidance that then for these type of uses this is the effluent quality, and then we can identify the effluent quality we have and how could we best move forward.

On new development we have a better chance of using it for all sorts of uses because we can build the new treatment plants and we can put in the technology in the new treatment plants. Again, it has to be cost effective. So we don't want to be building 20 houses and requiring that it recycle. But we

can be putting in technologies that can get us just to recharge the ground water. And that gets back to the innovative and alternative technology regulations.

We need to get those regulations out there so we're not just putting in conventional individual subsurface disposal systems. We're putting in systems that can treat for nitrates; that can treat for various pollutants; that if we can get it back into the groundwater, we can recharge the groundwater

and we can be totally recycling it by pulling it from the ground and putting it back down.

Again, going forward with the NJPDES program, we had an incident in Colts Neck Township that we tried to put in a facility, and we wanted to directly inject the wastewater, treated wastewater back into the aquifer we were pulling the water from. And after many meetings and a very long review process we basically concluded that that was just going to take too long if we were ever going to get the approval at all. So we went with a standard disposal system and we were

taking from the lower aquifer and we recharging back into the upper aquifer. So although we were putting water back in the ground, we weren't totally recycling and replenishing.

So we need to have a better process and a better commitment from the Department that we will use technologies that will work, and we will have some way of assuring that we can make those assurances and we can get -- if we're pulling water from an aquifer 400 feet down, we can get the water back in because it is treated to a good enough standard.

And then the whole process that we now have to go through with the Water Quality Management Plan Amendment, the NJPDES permit, and the Treatment Works approval; if we want to encourage recycling and reuse of wastewater, we need to have some better way of streamlining the process to encourage, especially for new development, of doing that. And perhaps there could be in the Water Quality Management Planning Rules, the NJPDES Rules, and the Treatment Works Approval Rules that if we're going to use beneficial reuse technologies, we

have a simpler process to go through. And we don't have to go through a complete Wastewater Quality Management Plan Amendment and go through a complete NJPDES permit and then go through a complete Treatment Works Approval process and take two to three years to do that. If we want to encourage these things, let's make the process of beneficial reuse more expedited than non reuse, and perhaps we will then get people to reuse better. There is no need to have to go through paperwork if that's discouraging the technology that we want.

Another issue in the Water Quality

Management Planning Rules is why can't we start recycling on new, say, schools, or new buildings in sewer service areas. Such that even though we're going to discharge to a treatment plant, we can perhaps recycle within the building. Well, right now if the building generates more than 2000 gallons of flow, I can't do that. I need a Water Quality Management Plan Amendment to identify my treatment system as greater than 2000 gallons, then I have to go and get a Treatment Works

approval for that treatment system. Well, when we're building schools, when we're building municipal buildings, when we're building state buildings we don't have the time to go through that process, so we don't even think about it. But, gee, if we're making a big push to build new schools, and we're making a big push to have state facilities be "green" buildings, then why don't we have a process that perhaps we can look at recycling the wastewater in those buildings. And the first step we need to do that is to get rid of the requirement that once we're greater than 2000 gallons I need to be identified in a Wastewater Management Plan.

Again, if it's a recycling -- the recycling technology, the rules could just refer to these type of facilities are automatically consistent.

And I think that would be a good start, and especially to show the public how these facilities could work that when we're building public facilities such as schools, such as state buildings, municipal buildings, that's where we should be looking to put in

these type of technologies to show that they work and to show that they can work.

And I guess the last thing that I would like to say is as we develop these standards, people that know me know I'm involved in a lot of rulemaking, and it bothers me when we make rules where we develop standards that aren't based on sound solids, they're based upon theory or thought or, and I'll say it, they're based upon trying to stop development.

We have to accept the fact that there's going to be development. We have to accept the fact that we have problems based upon existing development. And if we're going

to do things through proper science and proper technology, we have to stick to the science and the technology and not to the political science when we make these decisions. If we want to have beneficial reuse, we shouldn't be putting it in because it's going to limit development. We should not move forward with IA technologies for septics because it will allow me to build more houses on septic. We should sit there and

say what problem are we solving; what is the water resource problem; how do we mitigate the problem to ensure there's no impact; and base all those decisions on sound science.

Thank you.

MR. McCRACKEN: Is there anybody else that would like to comment at this point?

All right, seeing none -- seeing the time -- oh, I'm sorry.

MR. POLSKY: Thanks for the opportunity to comment. My main theme, and I have a few sub points. My main theme is based on my first question that I asked the first speaker about DEP seemed to be defining out a major category of reuse. I mean, that's everything that's possible at the residence

from what happens on the roof, to the landscaping, to laundry, to lawns, to potentially toilets and building a new system; that just seems to be out of the vision. Yet we started a couple of the other talks that if we take the right perspective these things are feasible.

So I would really urge DEP to take

a wider perspective of how it defines reuse and to consider incentives for things like "green" roofs, which are more common in areas like Chicago, Ontario, and Germany, and so forth. If they can do it there, there's no reason we can't do it here. If New York City can be doing wonderful things to Battery Park City, there's no reason that we can't be doing it here. And I agree with the last speaker, the schools and the incentives that are going in there for recertifications; this is a natural to build onto that.

Also I thought I heard the DEP person say that the standards for reuse of toilets they have to meet potable standards; and that doesn't seem to make a lot of sense, unless I heard it wrong.

Just a couple of other minor things. I guess the idea of car washing is another thing I think we should encourage people to use non potable water for; perfect candidate for reuse. Economics was mentioned quite a lot today; more than I expected and more than I'm used to. And I think that's

great, but I think if we're going to be serious about trying to figure out from an economics perspective what makes sense -- and I was critical of the first speaker at one point, so now I want to compliment him. He kept talking about subsidies that are in the system right now that leads to overuse of water. So I think we need to know better what they are and revisit them and factor that into the economic assessment that I think is really needed here.

Couple of minor things. I would urge DEP and the committee to take a look at what's happening in other parts of the country, in other parts of the world. I was recently in South Africa for the Sustainability Summit. A lot of concerns about water issues internationally. I think we ought to contribute what we know and also learn from

others and not be hesitant to do that.

Awards for good water users. I don't think the Department has an awards program in this area like they do in the recycling solid waste area. I would think golf courses would be a natural. And I think the

golf course that you were working with sounds like they would be a great candidate for some nice publicity; I think we should do that throughout the State.

Lastly just something I noted on this general subject of a Star Ledger reporter had a piece on water reuse about two or three years ago, and he was going to the other extreme. He was saying you should never reuse water. And I think he just was ignorant of the basic hydrological cycle. So I just want to let you know that while everyone seems to agree on the need for education and people seem to think it's a doable challenge, it may be deeper than you think, but please tackle it.

Thank you.

MR. McCRACKEN: Okay, last call.

MR. SEDMONT: Roger Sedmont from Turnersville, Gloucester County. I'm a member

of environmental group called EarthSave. It was founded by John Robbins from the ice cream empire. He devoted his adult life to trying to change the way we interact with other life and the environment. He broke away from the ice

cream empire and emphasized personal choice; a lot of it's diet, a lot of it is related to animal, agriculture, and one of the great users of water. And I realize that switching to more fruits and vegetables, a lot of that use has impacts on irrigation, too. A lot of animals eat grains, but there's also a big problem with waste, animal waste. I think a lot of us recall what happened with the hurricane down in the Carolinas a few years ago; all the immense amount of water in the lagoons all overflowed into the bay and stuff.

But why I got up today is I'm taking my personal life; a few years ago I read about using gray water from your house from your laundry to flush your toilets. And I would like to urge the DEP to come up with some standards. It's my understanding that right now it's sort of your health department, maybe a local health department. I live in -- right

not I have a condo, so I have a utility room and two bathrooms, one on each side, so it's very close to where I generate gray water from the washing machine. So my understanding is I

could convert one, as long as it's totally separate from the municipal water, from the freshwater side, that I can use the gray water and flush my toilets using laundry water and save a lot of water. I had a load the other day, just putting in buckets it's 25 gallons, and that was just a medium setting. So it's a tremendous amount of water that we're generating. And rather than using virgin water, whatever, to maybe I can get away from that horrible blue stuff, this would be soapy water with bleach in it.

So I'd like to urge the DEP, I need a hot water heater now, electric hot water heater; I have an all electric place. If I have a plumber come in and he says, oh, I can't do that; I don't know anything about that. If I had something from the State saying that, you know, that the individual home owner, the household owner could do it; this would be a helpful thing.

And I remember when recycling started back in the '70s you had to be sort of committed, the way you have to be in our

neighbor Delaware. I have a brother, family that lives there, and you have to be committed and take the stuff, take the bottles and the papers. They still don't have recycling. We do, but I don't think we have that kind of time span with water here. I read what the state of the world, you know, it's not just New Jersey or North America, water is becoming a worldwide problem here. And there might be wars over water in the future, not just energy or other things, you know, land, territory, whatever. So I don't think we have that kind of a time span. And I think some of us would like to invest a little bit of personal resources into using, trying to reuse some of our water, or use it multiple times before we flush it into our sewage.

So I'd urge you to try to get the standards for the households so we can have guidance for our contractors.

Thank you.

MR. McCRACKEN: So better

education, you're saying, and what people can do as home owners and the public in their daily

lives?

MR. SEDMONT: Right. Like if I had a plumber come in, and show him; yeah, we can do that, just cap that off to make sure it's not connected with municipal water, the fresh water coming in. Obviously it's got to go.

Thank you.

MR. McCRACKEN: Thank you.

Okay, anyone else?

Okay, that's it. This hearing is closed.

(Whereupon, the hearing was concluded at 5:15 p.m.)

C E R T I F I C A T E

I, KAREN L. DELUCIA, License No. XI01888, a Certified Shorthand Reporter and Notary Public of the State of New Jersey, do hereby certify the foregoing to be a true and accurate transcript of my original stenographic notes taken at the time and place hereinbefore set forth.

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Karen L. DeLucia, CSR

Dated: MAY 21, 2003