ISSUES CONFERENCE VOLUME 10

In the Matter of the Applications of

CROSSROADS VENTURES, LLC

for the Belleayre Project at Catskill Park
for permits to construct and operate pursuant to the Environmental Conservation Law

Margaretville Fire House
Margaretville, New York
June 25, 2004

B E F O R E:

HON. RICHARD WISSLER,
Administrative Law Judge

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(JUNE 25, 2004)

(9:37 A.M.)

P R O C E E D I N G S

ALJ WISSLER: If we can reconvene. When last we left, we were talking about stormwater issues.

MR. RUZOW: And we still are, your Honor.

MS. BAKNER: We have some exhibits to introduce now just here at the beginning, if we could do that. This is 48, Proposed Drainage Holes 12 & 13 dated 6/17/04 for Wildacres.

(PROPOSED DRAINAGE HOLES 12 & 13 RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 48, THIS DATE.)

MS. BAKNER: The entire March 23rd, 2004 letter to Alec Ciesluk at DEC from Walter Mugdan at EPA.

ALJ WISSLER: Applicant's 49.

(LETTER DATED 3/23/04 FROM US EPA TO ALEXANDER CIESLUK, JR. RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 49, THIS DATE.)

MS. BAKNER: And, your Honor, we have two exhibits, these are the GPS locations of

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the bird survey, and it's entitled, "Lawler, Matusky & Skelly Eastern Property Bird Survey Points and Transect Locations."

MR. RUZOW: Your Honor, may I suggest, can we label them 50A and B; A would be Big

Indian, and B would be Wildacres?

ALJ WISSLER: Sure.

("EASTERN BIG INDIAN PROPERTY BIRD SURVEY POINTS AND TRANSECT LOCATIONS" RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 50A, THIS DATE.)

("WESTERN WILD ACRES PROPERTY BIRD SURVEY POINTS AND TRANSECT LOCATIONS" RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 50B, THIS DATE.)

ALJ WISSLER: Applicant's 50A and B.

MS. BAKNER: Your Honor, we have a few minor issues to cover here this morning.

Dave Carr, could you please go over for us Exhibit 48, Applicant's Exhibit 48.

MR. CARR: What Exhibit 48 is is a HydroCAD drawing, a Water Quality Volume Calculation, and HydroCAD runs for the 1-year, the 10-year, the 25- and the 100-year storm for a small portion of Wildacres that was

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missed in our original -- original design. It was picked up by DEP, one of their consultants in an EA comment letter, and basically what it is, it's on the westernmost portion of the property associated with Hole 12, and it is a small area, under four acres, and we have -- we will attach this to the overall HydroCAD design.

Basically, what we have designed here is a basin that will capture and hold all

storm events associated with that small area.

ALJ WISSLER: This is operational?

MR. CARR: Operational. And obviously it would have to be to a construction level design. I'm not sure exactly what phase, but it would be part of these phased SWPPP plans also for construction.

So the second page is a Water Quality Volume Calculation, and beyond that are the HydroCAD runs that are found in Appendix 9A. They're similar to the ones that are found in Appendix 9A.

ALJ WISSLER: Coordinate for me the calculations that you have -- there's a 3.88 acres?



MR. CARR: Correct.

ALJ WISSLER: Where is that?

MR. CARR: That is this area. That is Subcatchment 1. (Indicating)

ALJ WISSLER: It's just that?

MR. CARR: Just that. Everything else is already included in 9A. It was just this piece west of this line that was missed.

ALJ WISSLER: Are the retention basins here?

MR. CARR: Right here. (Indicating)

ALJ WISSLER: That's one.

MR. CARR: One. It's such a small area.

ALJ WISSLER: The southern end of that subcatchment, is that -- it isn't there?

MR. CARR: It's on the larger drawing, but it just comes in and ties in. As I stated yesterday, basically it includes all of the impacted area, so you wouldn't go beyond that.

ALJ WISSLER: Again, this is for -- that detention pond is for the 10-year storm?

MR. CARR: All the way up to 100, the 100-year storm. The 8-inch rainfall. The



10-inch only is associated with construction -- I'm sorry, the 10-year storm is the design storm utilized for the construction, the temporary basins for construction.

All the storms, as I mentioned yesterday, for operations have to be sized to deal with the water quality volume. The 1, the 10, the 25 and the 100. The full range of storms.

ALJ WISSLER: And the 25 because it's the local requirement?

MR. CARR: Correct. Thank you.

ALJ WISSLER: Thank you.

MS. BAKNER: Dave, do you intend to submit any other enhanced plans? Let me go through a list, and you can let me know if we covered it. It would be enhanced plans for the employee parking lot along -- near to Lasher Road along Route 28, the enhanced drawings for the Giggle Hollow bridge

crossing.

MR. CARR: Crossing.

MS. BAKNER: These are all stormwater pollution drawings for operation for the main

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access road off of Friendship Road?

MR. CARR: Right at the entrance, correct.

MS. BAKNER: There were a number of outlet structures you're going to provide enhanced drawings on. Can you say which ponds those ponds are associated with and where?

MR. CARR: DEC has expressed a concern to us over some of the outlet designs for stormwater basins that are located on the edge of steep slopes, and those pond numbers on the Big Indian Plateau are Ponds 25, 36, 37 and 38; and at Belleayre Highlands, Ponds 8, 13, 15, 16, 17 and 21. Our intention is to go back and reevaluate the outlet design and enhance them to address their concerns.

MS. BAKNER: And this provides an additional level of detail that wasn't provided previously?

MR. CARR: Correct.

ALJ WISSLER: When do we anticipate that will be done?

MS. BAKNER: Two weeks, your Honor. We can distribute them to all the parties before we get back together.

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ALJ WISSLER: Please.

MS. BAKNER: There was a question raised regarding the identification of seeps and groundwater discharge points or springs on the site, and I just wanted to let your Honor know that Steve Trader will be addressing that as part of groundwater and surface water. Plus, in terms of stormwater protections that will be put in place if a spring or a seep or a groundwater discharge point is uncovered unexpectedly during construction is covered at page 15 of 44 of the Stormwater Pollution Prevention Plan, and can be found in Appendix 11 of the Draft Environmental Impact Statement.

The additional question that your Honor had in relation to Dr. Pitt's question about whether the ponds were designed for cold water conditions, somehow we forgot to address that yesterday.

Dean, if you could quick briefly do that.

MR. LONG: Yes. In Appendix 10A, Section 5, page 14. It's a section called, "Winter Stormwater Management." It describes



the sizing of the stormwater ponds in accordance with the DEC Design Manual, October 2001. We meet the design requirements. The other discussions that were held that Dr. Pitt mentioned, and et cetera, would probably fall more appropriate into the

current detailing of the individual pond outlet structure. There is a conceptual design of the outlet structure, but the fine tuning of that design to optimize winter operations as well as -- to optimize winter operations would be a final construction detail.

Also, while we're in this section, yesterday there was some discussion of the maintenance procedures for stormwater basins. Yesterday I had said that it's in Appendix 11. Appendix 11 has some of the maintenance procedures, but also in Appendix 10 is a letter to Pat Ferracane dated May 15, 2003. It's right behind the yellow page. Anyhow, this -- the letter was entitled, "Operational Phase Stormwater Management Plan," and in here describes some of the maintenance -- maintenance and management plans, maintenance



procedures for the stormwater basins.

MR. RUZOW: Dean, yesterday we spoke about the WinSLAMM model and reviewed Dr. Pitt's offer of proof. In the DEIS, there was a figure, two figures that were included. Would you show it to us in terms of the land uses within these reservoir basins?

MR. LONG: Yes. The first figure I'm going to reference is Figure 2-8 in the DEIS. This is the Ashokan Reservoir Watershed Land Use from DEP 1999. This is data directly from DEP, and this is all in hectares.

MR. RUZOW: Describe what a hectare is.

MR. LONG: A unit of land measurement, it's basically 2.47 acres is equal to one hectare. What this chart shows for the Ashokan Reservoir are the various land uses as inventoried by DEP and their acreages as it existed in 1999, which should be relatively representative.

The important point here is what's going to happen in the pre- and post-development phases here. As of 1999, there's 73 hectares of urbanized land in the



Ashokan Reservoir Basin. With the development of Big Indian, there would be a 21-hectare increase, relatively large proportionally as far as it goes to the 73; but correspondingly, and equally importantly, what ends up being the net change is that out of the 52,380 hectares of deciduous lands, that would be only correspondingly decreased by 139 hectares by the development of Big Indian.

So again, and this is a whole part of -- as we began examining and considering our relative impacts, we have very limited land use changes here, and therefore correspondingly we have always been expecting relatively small additional nutrient loadings as well as stormwater loadings.

ALJ WISSLER: Let me understand this.

With respect to -- urban is now 73 hectares -- as of the time of that survey?

MR. LONG: As of the time of that survey, right.

ALJ WISSLER: And this project would --

MR. LONG: Add 21 hectares.

ALJ WISSLER: Just the Big Indian?

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MR. RUZOW: Your Honor, it goes to the impervious surface category of development as opposed to grass with the golf courses.

ALJ WISSLER: I understand. The deciduous --

MR. LONG: The deciduous would decrease by 139 out of the 52,380.

ALJ WISSLER: Okay.

MR. LONG: The second chart is Figure 3-9, "Pepacton Reservoir Watershed Land Use." This one isn't labeled as `99, but I believe we were using that particular series of watershed reports. Same thing but, of course, the Pepacton Watershed system is a little larger. Anyhow, urban land as it exists out there currently contemporaneously is 66 hectares, and that would change to -- that would be increased by 13 hectares with the construction of the Wildacres Resort. Correspondingly, there's 59,440 hectares would decrease by 97 hectares with the conversion of the deciduous forest into the resort, including the conversion of the turf, et

cetera.

ALJ WISSLER: Decrease by how much?
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MR. LONG: 97 hectares.

ALJ WISSLER: Picking up on what Mr. Ruzow said, when I see urban on your chart, I should read impervious surface?

MR. LONG: Yes, that's the way we always interpret it, because it is going to be a mix of development, impervious buildings structures, et cetera. So it's all the urbanized land uses.

ALJ WISSLER: At the proposed sites, there are none other than deciduous forest? Is that why that number is --

MR. LONG: Most of it is pretty much dominated by deciduous.

MR. RUZOW: Your Honor, this also goes to the issue of the appropriateness of the WinSLAMM model. In looking at and hearing from Dr. Pitt as to its development, how it was developed, and why in urban settings, tested in various urban cities, and this is a remarkably different area, and this information reflects that. We don't believe, we don't have the updated, the 2003 reports, but our best guess is that the relative percentage of this have not changed very much.
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The urban may have increased -- the extent of development that has occurred in the Ashokan

and Pepacton Basin is quite small over the last several years.

If I understand what DEP said, at least with respect to commercial development, some 200 permits have been issued since the watershed reg.'s were issued, and I may have understood this wrong -- and if that's just the west of Hudson watershed, and it wasn't clear to me whether it was east and west -- you have a million acres in the west of Hudson watershed, 35 towns, five counties comprising that area, 1600 square miles. That's not a large amount of development over the course of seven years. And the level of development that we have seen, we have even heard about, is still quite small. This development, no question about it, is large; but again, in the context of what is here, it is not significant.

Your Honor, I want to touch upon just a few more things. The stormwater program, as it has developed over the last several years, and it is of relatively recent vintage in



terms of the heightened regulatory concern for stormwater quality. Stormwater quantity, on the other hand, has been a part of project design for decades. And most towns -- and I believe your Honor was a mayor of a village at one point in time -- there's always been, at least for the last 30 or 40 years, drainage controls that focus on quantity, particularly

in flood-prone areas, looking at avoiding impacts of new development, et cetera.

It's obviously been heightened further with the current regulatory regime in 1993 when the first Phase 1, EPA Phase 1 Stormwater Reg.'s became applicable in New York in the New York program, and again in 2002 for Phase 2. However, the approach that was adopted in these Phase 1 and Phase 2 programs, is one that relies on design professionals when a project is being proposed, whether it's public or private project, using their best judgment and applying tools, guidance documents, the manuals, and reaching a judgment on what the best design is, taking into account the objectives of minimizing impacts and increases in both quantity and



quality, keeping them to the extent practicable, at pre-development levels. And we submit that that was done here.

The approach uses limited regulatory oversight. I don't want to draw a distinction to the wastewater program, for example. It requires design professionals to prepare plans prior to construction and to submit for potential regulatory review of those plans. Whether or not the agencies review or comment on the plans or affirmatively approve them, which is what is contemplated in this case, the responsibility for assuring compliance for

runoff quality with -- I believe the turbidity standard, no visible contrast to the point of discharge -- remains on the Applicant, and indeed reliance on those design professionals. That never shifts. That's always the responsibility. It's a continuing responsibility, your Honor.

The only standard that is set is that standard. It's different than design standard if you were building a power plant and you had to meet a certain NAAQS, and there was approved technology, there are accepted

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models, required models to use, required monitoring prior to the application that you would accomplish. There's a lot more that's associated with that.

Similarly, in the context of design of wastewater treatment plants, there is now almost 40 years of experience, regulatory experience of required -- heightened over the last several years and now in the New York City Watershed even greater level of requirement -- where certain approved designs are required to be applied. And you have predictable effluent limits that are regularly monitored and maintained and have to be complied with. It's a different regulatory mechanism from a policy point of view.

It may be in 10 or 20 years, we may see a different stormwater management regime once the learning has evolved, both in terms

of the modeling in terms of predicability, as well as in terms of permit requirements, and how you adopt that program. But today, it's a different program. It's one that relies on professional judgment exercised by the Applicants with review by the agencies, taking

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the knowledge they have gleaned and they have gained to assure that those standards are capable of being met. We believe the Department SPEDES permit accomplishes that goal.

Another element of what's going on here, and the unusual nature of this application's review in the proceedings before you is, and we've talked about this before, is the relative status of the plans, where we are in terms of looking at the plans. I want to draw an analogy to the site planning process at a local government level. In most towns, you have a preliminary site plan review. You may even have a concept plan review that starts a process of review by a planning board. You then have a preliminary site plan review, similarly analogous to subdivisions, preliminary subdivision review. It is at that stage that SEQRA is typically, and required to be applied. It doesn't apply to the final stage. It's required to be applied as early as possible in the planning process, where you are making judgments about what should happen

next, et cetera.
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We believe that the plans that we have prepared, and in particular, the heightened plans for the Phase 2 sections, are analogous to a preliminary site plan application. We use the term "design development plans." It's more than concept, but it's enough to give you a sense of -- and be able to predict what the impacts will be and whether you can control the water's quantity and quality.

It is then followed in the local planning process by a set of final design -- final plats, final site plan applications, which is then reviewed by the regulatory agency. You can't get a building permit until those final site plans are assigned by the chairman of the planning board. So there is another opportunity for review. DEC has done that, in the context they built in that additional opportunity, not for simply signing off, but for affirmative review of our SWPPP's.

Not to confuse you. Let's go back to the normal planning board process. Once you have a final site plan, it's at that point that the SWPPP's are actually prepared at the
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local government level. And you don't get the building permit and the right to go ahead -- typically there may be excavation permits at a local level -- until everybody is signed off

on that series of plans. That's when you can start construction. That's the point at which you can, in effect, have bid out the project. You may get some preliminary ideas of bid details, but that's when you're preparing your plans for actual construction.

So we're way up in the process. We're doing what SEQRA asks, which is as early as possible in this planning process, we are looking at -- we have learned a great deal from DEP in their comments. We heard today, and we submitted another plan that picked up -- you know, you missed this tiny corner over here.

We heard from DEC as well. There's lots of things that will be incredibly helpful in the design development of both the project and these plans because we are doing it iterably. We have not simply moved ahead and said: This is it, and we're ready to start construction. We understand there's a lot

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more to go on. We still have to go, as we've said, the site plan review at the local level, which will begin to change things.

So we think that where there are substantive issues to be adjudicated, and what is significant, the concerns being expressed, while they're legitimate concerns, their context has to be viewed appropriately. They're not lost on us. This is the desire to

bring in on a construction level -- we've talked about 100-whatever, plus or minus acres of sod in the context of a response to concerns over -- it might take too long, the growing season may be too short to open up larger areas of land in order to stabilize, permanently stabilize -- is a response to this.

This is not -- in the vast majority of projects, no one suggests those kinds of additional controls. Indeed, I'm almost positive that neither DEC, nor DEP in this watershed has had the opportunity for an Applicant to review a project where an Applicant is proposing those kind of measures.

So some of the concerns that they have

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experienced and the problems they may have experienced in other projects, albeit smaller projects, are not necessarily -- you don't jump to the conclusion that they're likely to be visited here, yet we value their input relative to what their experience has been; but at the end of the day, it is the design professionals by the Applicant that bear the responsibility and the Applicant's responsibility to assure that ultimate compliance.

With respect to WinSLAMM, I want to just draw one other further analogy, and I'm struggling with the right series of analogies, but we made them up before -- but it really is

a square peg in a round hole problem. It was not designed for a rural watershed and the kind of vast forested areas that are here and the nature of the land uses here. We've talked about -- well, you could tweak the golf course components and parameters to try to make it fit, but it clearly was not designed for that. You can make a square peg fit in a round hole by whittling around the edges, but it requires a great deal of work, and you lose

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the value of the square peg. It no longer performs the square peg function, whatever that might be, it performs a different function now. And we think that you lose -- and when we have heard, both from Mr. Long, we have heard from -- even the experts on these various models -- these are tools, they're not definitive answers. They're simply tools to help you guide to make a regulatory decision, and that's their whole purpose. They can be -- in crafting and trying to hone the tools, sharpen the knife, you can dull the blade.

We heard the garbage in, garbage out. It may not be useful to you, but the use of those models at the end of the day, you have to make a judgment as to whether or not they may advance knowledge and discussion here, and that the juice is worth the squeeze. We don't think so, your Honor. Not with respect to

WinSLAMM.

There are other models and other methodologies for doing this analysis which provides the same range of information. Maybe WinSLAMM can be tailored down the line; but in

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our judgment, it's not an Applicant's responsibility to try to make a model that is not, number one, a requirement to be applied -- this is not an air quality evaluation of a power plant where there are approved models you have to use.

This is not even a situation where in some of the water quality analyses, there are particular models, off-the-shelf models that are routinely used or required to be used for assessing things. This is not the case. This was a good suggestion by DEP at an early stage of the project, and presumably its experience in using the model.

This may have been the first WinSLAMM model used on a project that the Department had ever experienced. And it isn't that anybody was, in effect, necessarily evil or wrong for having suggested it, it's just that it doesn't work, and it doesn't belong in its use.

So from a judgment point of view that your Honor and Commissioner Crotty have to make, we just don't think at the end of the day that it adds and is significant in what it

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might or might not add to this project. It doesn't affect, at the end of the day, the criteria, the conditions of the permit in any definitive way, and that is the test for determining what is a substantive and significant issue.

We just don't believe that it bears -- we appreciate the proposed testimony by Dr. Pitt and others. I'm sure we'll hear from DEP in terms of a further response -- but at the end of the day, you have to stand back and say: What is this advancing? And we get very close up in examining -- oh, could you have adjusted this or that parameter; but again, you have to be able to stand back and say: At the end of the day, how much did it tell us? Shorah did that in her analysis, and she expressed that commentary in responding. We looked at it, we tested a few things, we looked at other models to see if it was within the range, and it was in the ballpark. And at the end of the day, that's important.

One last thing that I want to talk about is with respect to the significance of the phosphorus issue. Phosphorus is a --

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clearly a nutrient of importance in the New York City Watershed. Our relative contribution to that phosphorus issue is insignificant. It's in the number of zeros decimal point percentages no matter what we

discharge.

I want to draw an analogy. We have heard nothing so far about the consequences of the discharge of phosphorus from the wastewater treatment plants which are using tertiary treatment technology from any party. There's a reason for that. I go back to the regulatory history again. There has been a long history of technology for wastewater treatment, and New York City and the New York City Watershed regs ratcheted up -- and Kevin Young spoke to this the other day -- ratcheted up the requirements so that the best you can do, the best available technology is now being employed to reduce that to the minimum amount possible, and we're employing those technologies. And we're getting, respectively, I think 60 kilograms per year from Big Indian, and 78 from Wildacres. That's the numbers.

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Our projections, and whether we're in this range -- using the WinSLAMM model, we're around, I believe, 48 and 22 kilograms respectively for Big Indian and Wildacres in the EIS. Those were the numbers we had run. Whether those numbers are -- I think Kevin Young suggested this the other day -- whether those numbers are doubled or tripled, when you look at the context of that total contribution to this watershed -- and the Shandaken Tunnel's relative contribution -- and that's

not to pick on the Shandaken Tunnel -- it just gives you a measure of what in relative terms that contribution -- by bringing the water in from Schoharie and then now measuring it and giving you a number in the balance of total phosphorus in the Ashokan Basin, it gives you a perspective to understand how significant it is.

While we will do our best and continue to do our best to minimize the amount of phosphorus through our design and through the basins and through, as Joe correctly observed, Joe Damrath observed, in the development of design, throughout the process as you're

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getting to the final design for both construction as well as in the basins, and the enhanced plans that we're looking at as well for removal purposes, at the end of the day, it's not significant. Not that the issue isn't important, but it's not significant as applied to this project's contribution to the environment. We will meet our regulatory obligations.

One last thing I want to suggest is that -- we've talked about the designs for the SWPPP. In the discussions, we have not designed the final SWPPP's. We are some distance from that. We will use that information that we have so far, and we have gleaned in this proceeding so far, we will

develop those SWPPP's, we will -- in the way in which DEC SPEDES's permit requires, we are doing it in phases. And in the context of the submission, and the way Kevin described that process, we're only doing small phases. Anything we learn in doing the first phase, the first subphase, that either it needs refinement, will have to be changed before the next subphase gets approved in terms of the final.



We will have to go through and work with DEP to develop those same sets of plans for their review. And again, Mr. Damrath suggested, and he is absolutely right, you don't stop there, you submit a plan and you're done. That's not the way the program works. And at the end of the day, we have this continuing responsibility to do -- this happens in lots of projects everyday. The only difference here is this project is a large one, but we have broken it up into small projects, and that is the intelligence of the phasing that we have talked about so that it can be accomplished and managed over the course of time.

We didn't talk about specifically, but I know it's mentioned in the EIS, we had earlier -- and Scott Clark mentioned this -- a golf course could be built in a year or two if you didn't care about these issues, if you didn't concern yourself with those controls.

We extended the years for building the golf course and the number of seasons to specifically address the concern of how much
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land was going to be opened up at any one time. It's not like we're doing something that is so generous, it's just that the pragmatic response in light of the circumstances and the area being affected required our design professionals to tell the golf course architects and the investors, no, we can't build it on this original schedule, because in our professional judgment you need more time to manage the areas on site. And it's that exercise of professional judgment, your Honor, that is being employed, and the whole regulatory program for the Phase 2 and Phase 1 programs relies on it. And we don't throw that out because it's a big project and there is concern, appropriate concern expressed about how you're going to do it and all the rest. The regulatory agencies don't give up their rights; they have those rights and responsibilities, and we have to work with them in that context.

We are reserving, obviously, to respond to a number of the issues that Terresa said. There are a couple other things that -- this is based on what we have heard so far
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that we would like to be able to respond to

further -- one is that Joe Damrath had mentioned a particular soil lobe area he was concerned about on-site and what the status is, do we need that identified, and we want the opportunity to respond to that.

We heard the chitosan concerns. There's some additional information that we believe we should be able to provide on that. Dean Long's presentation yesterday about the total phosphorus loads and his methodology was -- in terms of trying to address and respond to the concerns first voiced by Dr. Pitt in terms of the methodology and how else you might measure or predict -- we have just shared that, obviously, with the parties. The Department is clearly going to need an opportunity to review that. We may need to supplement some of those calculations and details, and we want to be able to do that.

Also, with respect to the HydroCAD model, we had another witness we could not get here given the timing of things to talk about our approach to it. We may end up doing that by a written submission, but I want to reserve



the opportunity to do that depending upon how our schedule on continuing stormwater goes.

Lastly, several of the witnesses invoked the comments of Dr. Charlie Silver and Jim Tierney's comments, which was an exhibit that was offered. We had not prepared to respond to the Tierney and Silver comments,

and we would like an opportunity to review those again and see whether some further response is required. And I think that's my list. Thank you.

MR. GERSTMAN: If I could take just a moment. We don't have a witness here today, but we do have a response to Mr. Ruzow's evaluation on what the project sponsor's obligations are under SEQRA. We've said this is an issue that's appropriate for briefing, and we expect we will have that opportunity.

There have been some fundamental mischaracterizations of Dr. Pitt's testimony. Since we have reserved the right to come back with comments from Dr. Pitt, and I am told he will do that -- we will provide objective information, and we can look at the testimony. His testimony speaks for itself in terms of

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the appropriateness of the use of the WinSLAMM model. He indicated that, in fact, with adjustments made on local conditions using local parameters, the WinSLAMM model, although not originally designed for this purpose, could appropriately be used. And I think his testimony will speak for itself on that score.

Mr. Ruzow spent a tremendous amount of time trying to -- suggesting that the need for evaluation of the environmental impacts of this project doesn't need to take place at this time. We think this is a fundamental

mischaracterization of the obligations that the project sponsor and DEC have under SEQRA in order to ensure that those impacts are properly and fully evaluated using objective mechanisms to understand what the implications are for this very sensitive location and very sensitive environmental area.

Again, that's an issue that we will brief, but I think it's important to put on the record right now, since Mr. Ruzow felt compelled to try and lay out the groundwork for not addressing this under SEQRA, to fully understand where we are in this process, and I



know you do, Judge.

Is the juice worth the squeeze? Well, what Mr. Ruzow has done is to try and make lemonade from the lemons that have been placed before your Honor concerning the inappropriate use of these models. And I could come up with some other analogies but -- so I think we need to take a hard look at the project now. I don't think deferring the evaluation of the stormwater impacts until some later point down the road, suggesting that the Commissioner's responsibility for reviewing this project can be equated to a planning board reviewing a small project, which may not have the same types of implications for the environmental setting that it's in. We will provide that through briefing and through response by Dr. Pitt. Thank you.

ALJ WISSLER: Ms. Krebs.

MS. KREBS: Thank you, your Honor. We have three staff members who will be speaking this morning concerning the SWPPP and SPEDES permits. In general, we'll have Pat Ferracane speaking to the SWPPP and his review of the SWPPP, and then Bill Mirabile and Shayne



Mitchell, our Division of Water staff, speaking to the SPEDES permit.

I would like to start with Mr. Ferracane. Mr. Ferracane, can you briefly describe where you work and how long you have worked there.

MR. FERRACANE: I'm with the New York State Department of Environmental Conservation's Division of Water located in the Region 3 area in the Tarrytown suboffice. I've been employed by the Department in the Division of Water in Region 3 since 1984. My primary responsibility since 1993 has been the implementation of the SPEDES general permits for stormwater discharges, both from construction and industrial activity.

MS. KREBS: Thank you. Turning to the SWPPP for this project, I understand you have a few comments you would like to make.

MR. FERRACANE: I think to begin with, we should elaborate on why we chose to pursue the regulatory control of this project through the individual SPEDES permit process rather

than rely on the general stormwater permit for construction activity which normally a project
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that's regulated by our -- would be eligible for coverage under.

Instead, we chose to pursue this with an individual permit. The reasoning why is at the time that the project was originally proposed to us, we are operating under our first general permit, GP-9306, which we knew was about to be replaced within the next year or so with GP-0201.

GP-0201 had, what we considered to be, a far better set of design standards for post-development stormwater management. We felt that we could, even under the existing general permit, require the Applicant to use those newer standards which had already been developed at the time we made this decision, but yet they were not required elements of the permit we are currently operating under. We could have just required the Applicant to use those standards, but we felt that we needed a more definitive means of associating the better standards with this project. And one of the reasons we chose the individual permit was to allow us to use standards which our current general permit did not reference.
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Other issues that led us to believe that the individual permit was the better regulatory mechanism is the magnitude of the

project. The general permits are designed or specifically the general permit for stormwater discharges from construction activity was crafted to be applied to projects of a similar type. This particular project has multiple types of activities occurring with it. You have golf course construction, residential construction, resort construction. You also have intermittent industrial activities that will occur throughout the development of the project, rock crushing operations, possibly concrete mixing operations, which is not at this time clear to me whether that's part of it. But if it is, our individual permit allows us to also regulate those activities rather than a multitude of general permits or some individual permits.

ALJ WISSLER: Pat, if I understand it, you're saying even though GP-0201 has been adopted and gives you clear standards with respect to operational stormwater controls and so forth, you still would have had an

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individual permit here?

MR. FERRACANE: Well, when we made the decision to pursue this with the individual permit, the GP-02 was not in effect yet; but if it had been, yes, we would still pursue this with an individual permit because of the multitude of different types of activities with similar pollutants that were occurring on

the site, but also because of the magnitude and the duration of the project. They are optimistically, maybe, presenting this as an eight-year project. That will exceed beyond the life of our current permit. We don't know what the next generation of our general permit will also require. This permit allows us the flexibility to modify our requirements as we progress through the process, the development process, if we get to that point.

Magnitude again, the duration of the project were other significant issues. I want to elaborate on what the individual permits regulate. There are two; one for Big Indian, one for Wildacres. The Big Indian permit regulates -- actually both permits, Big Indian and Wildacres -- regulate the sanitary

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wastewater discharges, regulate the stormwater discharges from the construction activities and regulate the post-development stormwater discharges from the completed project.

There are some subtle differences, there's some significant differences between the two which Bill will elaborate on later; but both permits regulate stormwater discharges as individual permits during and after construction in addition to the sanitary wastewater discharges.

Another significant issue that -- not to suggest that this is an issue -- but a significant matter that has come up is our

allowance of the exceedance of the five-acre disturbance limit. Before I move on to that, I need to clarify that the individual permit also references significant -- a significant number of items that are in our general permit as well, particularly those that relate to your use of design standards but also -- there are a number of things that were part of the general permit that are by reference incorporated into the individual permit; some notable measures or regulatory issues that we

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did not want to relinquish through an individual permit, so it's notably being our stop work authority, which exists in GP-0201, we don't have clearly under an individual permit, and we did not have under GP-9306.

Getting back to the 25-acre disturbance limit that we have authorized -- not yet, we have not officially authorized that. That's still subject to future discussions if we get to that point, but we have agreed that to allow them -- or at least to evaluate to develop this project -- pursuing more than five acres of disturbance at a time. We established a maximum cap of 25 acres in each project, each watershed area or each project area, both Big Indian and Wildacres.

The reasons for doing so relate primarily to the technical and economic

feasibility of constructing the project that the Applicant feels that they can live with. What we have not definitively determined as yet is whether those -- the technical and economic feasibility of building it also will equate to environmental feasibility of doing



that on this project.

We do have opinions on that at this time, and we'll get to that later, but that is part of the evaluation process is that they propose the 25-acre disturbance limit based on their technical ability to build what they're proposing to build, and we agree that it is not practical or technically feasible, it may not be, to build a golf course in such small increments as five acres at a time.

ALJ WISSLER: You're using the word "technical," but do you mean economic?

MR. FERRACANE: Technically is the ability to actually construct what they're proposing to construct in these small increments. Technical issues might be referring to the balancing of cut and fill, or on an unrelated issue, the ability to build a large warehouse project that's 20 acres. Technically you cannot build that five acres at a time. Economically is an issue that we don't particularly look at but we do have to consider, is can they build this project in small increments over time and make it a feasible project for their own economic

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reasons. I think we would have to consider that as a reason for justifying why we would allow it, but it's not part of our environmental evaluation. We still have to agree that environmentally it's feasible that they can do this.

ALJ WISSLER: I got it.

MR. FERRACANE: One more item that related to our decision to use an individual permit is given the nature of the settleability of the soils on the project areas, we have required them to use a flocculent to aid in the settling in the sediment basins and a control discharge. We had done this under the general permit previously, but it was just another instance or reason to pursue the individual permit.

In exceeding the five-acre limit, we do require the Applicant to demonstrate the reasoning why. Typically the reasoning why relates to their own technical and economic reasons. Our evaluation of it will -- or our ultimate authorization of it relies more on the environmental control measures. We look for the enhanced erosion and sediment control



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measures.

What is an enhanced erosion and sediment control measures? What is it that goes beyond what our general permit and our

standards typically rely on? The most significant one is the practice of stabilization, emphasis on erosion control, maintaining within practicality that which is necessary to construct, maintaining existing cover, but the ability to establish temporary cover on an as-needed or almost daily basis if necessary.

Some vague examples, which do not particularly apply to this project as yet because we have not gotten into that detail with this as yet, might be that prior to a forecasted rain event of a half an inch or more, that they stabilize the site at the end of the workday temporarily. It would require them to have equipment and materials to perform that stabilization on a regular basis as directed by the qualified inspector that they have referenced in the past that our permits do require, that they retain this qualified inspector. Qualified inspector has





direct oversight of the way the construction progresses.

In addition to that, we will have our own regulatory oversight of this project. So we will not rely exclusively on their qualified inspector. That's one example of enhanced erosion and sediment control. It's stabilization that goes beyond the time frames that our general permit currently allow.

A specific example in this case is the

sizing of the basins, which I'll get into, the temporary sediment basins --

ALJ WISSLER: Pat, let me just stop you right there. The regs generally say now, you can disturb five acres, and at the end of the day, you control that; right?

MR. FERRACANE: Explain that.

ALJ WISSLER: I'm just repeating what you said with respect to --

MR. FERRACANE: Currently our general permit limits the amount of disturbance to no more than five acres at a time. You're allowed to have five acres open, provided you have the adequate sediment control measures that go along with general standards. Before



you progress to the next five acres, you have to have that previous five acres stabilized.

ALJ WISSLER: You made some comment that you'll have inspectors on-site and at the end of the workday, whatever sediment controls that need to be in place that day at the end of that workday will be -- did I understand you correct?

MR. FERRACANE: Yes. The qualified inspector is a component of our General Permit-0201, and this element is incorporated into our individual permit as well for these two projects. At the direction of the qualified inspector -- this is the person whose sole responsibility is to monitor the

project areas for the Applicant. The developer has to hire this person as any other project does currently functioning under GP-0201. If that qualified inspector or that erosion and sediment control inspector determines that today we need to stabilize the site at the end of the workday, for, say, a forecasted rain event or significant forecasted rain event, then that is one of those enhanced erosion control measures that



they would have to implement. In accordance with our general permit, there's no reference to that type of consistent or constant stabilization effort. We're looking at an enhanced erosion control plan that will function for at least temporary stabilization on an almost daily basis.

ALJ WISSLER: Okay.

MR. FERRACANE: This type of approach, the 25-acre disturbance, this is not the first project we have applied that to. There have been two, that I can think of, other golf course projects within the past year, or two or three years even, that we have applied that same disturbance limit to. It seems to be the common number that allows the golf course to be built in a reasonable amount of time that can be still managed. Those two projects where they were both golf courses and involved extensive disturbances, and one of the two had topography, not nearly what these two projects

have, but similar issues with slope or construction activity on slope.

ALJ WISSLER: When you say not nearly the topography, what do you mean?

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MR. FERRACANE: The severity of the slopes. There were severe slopes in portions of this one project, but not nearly as they are on -- at least the Big Indian project. The second project did not have the topography of the slope severity that this one or Big Indian or the other golf course that I mentioned had, but it did have soil settleability problems, the clay soils that have been referenced.

We've had good success with one of the projects, and the other was a marginal effort.

ALJ WISSLER: Which is which?

MR. FERRACANE: Specifically?

ALJ WISSLER: I mean you had difficulty with one?

MR. FERRACANE: Yes, the one that we had the difficulty with exhibited the soils which are not adequately identified in the preliminary process, exhibited soils that had poor settleability characteristics, so there was not a consistent and not a severe discharge of turbid stormwater from the site, but there was discharges of turbid stormwater from the site due primarily to the

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characteristics of the soil that they were working in -- in certain areas of the project. They weren't consistent throughout the project area.

ALJ WISSLER: Any similarities between the soils at that site and the soils in this project?

MR. FERRACANE: Only in that they both contain the colloidal clay which has been mentioned, the finer particles which do not respond well to conventional sediment control measures.

ALJ WISSLER: So when you spoke about the settlement problems in the other project, it's because of the same kind of clay that's present here?

MR. FERRACANE: Exactly the same, no, not nearly to the percentage that exists here. They exhibited some level of clay percent.

ALJ WISSLER: We're talking about the same type of clay; is that what we're talking about?

MR. FERRACANE: Yes. It's the size of the particle that's relevant. The smaller the particle, the less settleability it has in a



pond.

MR. GERSTMAN: Judge, with your permission, if you deem this appropriate, I would request that you ask the names of the two projects that we're talking about.

ALJ WISSLER: They're a public record;

right?

MR. FERRACANE: Yes.

ALJ WISSLER: What are they?

MR. FERRACANE: Do you want me to distinguish between the successful and the marginal?

ALJ WISSLER: Sure.

MR. FERRACANE: The successful project was the Peekskill Hollow Brook Golf Club, which the name may change. This is what we knew it as during the design and construction phase. Currently it may be operating under a different name. It was in the Town of Cortlandt in Westchester County. It was bisected by the Peekskill Hollow Brook. Peekskill Hollow Brook is the water supply source for the City of Peekskill. One side of the project was fairly level, and at one time had been an active sand and gravel operation



previously disturbed. The other side of the project was constructed on fairly steep slopes. That project, as far as I know, is completed. We have had no reported problems associated with that.

Again, the Peekskill Hollow Brook is the water source for the City of Peekskill. City of Peekskill has always been very keen on observing impacts to their system. Their system is not an unfiltered system, it is a filtered water supply, but when they have

problems with significant sediment loads that overwhelm their filtering system, they have to shut off their water supply and go to an alternative source, and that has been a significant cost to them. So we hear from them when there's a problem. And minor concerns during the initial start of the project, but overall no reported problems, and our limited site visits did not indicate significant problems during the construction process.

The second project was constructed by Westchester County, partially in the New York City Watershed, partially -- mostly out of the



New York City Watershed, and I believe it was the Town of Ossining, also in Westchester County. This one was also designed to comply with the 25-acre disturbance.

ALJ WISSLER: Do you know the name of the project?

MR. FERRACANE: I think today it's called Indian Hills. I forget the actual design and construction name that it went by, but I think today it's Indian Hills. But it was one built by Westchester County actually, just completed last fall, and just opened this past spring. That one, again there were soil concerns, soil issues. They were not flagged as problematic soils. They were marginally, a marginal amount of clay -- marginal meaning marginal on the threatening level. In other

words, we generally use 20 percent clay. This is not a standard that is written down anywhere. It's a flag that we look at.

Generally, we will use 20 percent clay as the point where we have a concern with the settleability of the soil. This was not immediately evident. There were only certain sections of the project where this type of

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soil turned up, and it did present some limited settleability problems and discharges of turbid water off site.

ALJ WISSLER: You characterized one project as being successful and one as not being successful; which is which?

MR. FERRACANE: Marginally successful. Neither project resulted in an enforcement action.

ALJ WISSLER: Which was which?

MR. FERRACANE: The Peekskill Hollow Brook project was the one that was successful in that we knew of no water quality violations associated with the project. The Westchester County Golf Club, I consider to be the marginally successful one because we were aware of some water quality issues associated with stormwater discharges from the site.

ALJ WISSLER: The Peekskill site, does that have topography slopes that are greater than the Westchester one?

MR. FERRACANE: Yes, but they did not

have the soils problems. In fact, much of the area of the site was a former sand and gravel facility, which indicates there was
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significant permeability, and that was a very positive factor in the design and the construction of the project. And in the areas of the sand and gravel, we allowed them for the former sand and gravel area -- in one limited instance, we allowed them to exceed the 25-acre, to go up to -- I think it was 31 acres. The 25 acres, plus or minus up to five or 10 acres. Some portions of the project may have been 15 acres of disturbance, and other portions of the project may have been up to 30 acres. We did not hold that as a hardened rule.

ALJ WISSLER: Okay.

MR. FERRACANE: Back to that 5- and 25-acre issue. In addition to the potential for the discharge of sediment from the site, we have found that this is a manageable size of a project that can be reasonably expected to comply with all of the requirements that we establish for the projects. So not only is it the potential for discharges of sediment from the site, which a larger project would certainly have, we also have to consider the manageability, the contractor's ability to
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implement the plan; implement, maintain and modify as necessary to prevent contravention

of water quality standards.

Another aspect of this project is the sizing of the temporary sediment basins which has been subject to a great deal of discussion over the past couple of days. The temporary sediment basins that have been proposed on the project do not conform with any of the standards that we have in our Erosion and Sediment Control Manual, the blue book, or as it's been referred to consistently here as the blue book. It goes, in our opinion, beyond that.

They were not designed to act as passive systems, meaning stormwater comes in and flows out over a period of time. They were designed to contain a storm event, a specific storm event. They were designed to contain all storm events up to and including a 10-year, 24-hour storm event. They were required to size that based on bare soil conditions which would produce the most amount of runoff, and assume additionally that all rainfall was runoff. Allow nothing for

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infiltration -- no loss of water due to infiltration into the soils. We required them to assume all rainfall was runoff. If the rainfall for the 10-year event was six inches, six inches is what they had to account for in the basin for the contributing watershed.

The temporary sediment basins are part

of what we consider to be a -- or what needs to be a comprehensive implementation of a multiple series of measures. A single practice, whether it's on this project or any project, a single practice that is relied on as the sole sediment control or erosion control measure will fail; regardless of how well it's designed, constructed or maintained, it will fail. There needs to be comprehensive implementation of multiple practices. Multiple practices include site stabilization measures, interior measures, measures that will limit the larger particles from moving into the sediment basin. Limit the amount of sediment that you have to deal with at a point source by controlling it at its source, by containing it at its source. And you do that through either temporary barriers or temporary



stabilization measures.

The primary purpose of the sediment basin in general is to collect and treat that runoff which contains suspended solids that could not be adequately contained by those other measures that are part of the comprehensive implementation.

So the sediment load that goes into the basin should be limited to only those types of soils or a portion of the soil site, not certainly all of them. Some of that soil should be retained within the construction area without impacting the basin. The basin

in this particular case is designed to treat fine particles, particles that will not settle out or be filtered out on their own with conventional practices. That's where the requirement to introduce the flocculent or the coagulant into the process. The process involves, again, the containment of all storm events up to a 10-year storm, which would, in most instances but certainly not all, allow for a containment of a storm event without discharge, with untreated discharge, untreated by treating with the chemical flocculent.

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The process as described in the DEIS, and which we have agreed to as yet -- to date, what we have agreed to is that the basins will fill up with water, at the end of the storm event, the chemical will be applied and then dewatered after the chemical has the opportunity to react and the particles have adequately settled in the basin.

The discharge of water from the basin, they're required to monitor that on a continuous basis. They have proposed the use of a turbidity meter, which we don't object to, but we will not allow them to rely on. They need to visually monitor the functioning of the dewatering of the basins to prevent that discharge of heavier soil that settled at the bottom of the basin from the basin. The basins also have to be like every other

erosion and sediment control practice, continuously maintained. The basins have to be restored to their design capacity as necessary.

Through discussion about the lack of a permanent pool within the sediment basin and that the sediment basin should maintain this

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permanent pool, we don't consider that to be a design standard appropriate for use during construction activity. We consider that to be a design standard that relates to post-development pollutant loads. The reason being that standing water in a basin, particularly if it's clean or clarified water, is taking up space within the basin. The basin needs to be evacuated of the clean water to allow the next flow of water to be properly treated and contained. Having standing water in the basin limits the amount of water that the basin can handle on the next storm event.

In fact, many of our temporary sediment basin designs incorporate a temporary dewatering structure -- not appropriate for this project because the dewatering structure would not adequately filter the sediment laden water as it passed through the material, the fabric that is part of a temporary dewatering structure. But the primary purpose of the temporary dewatering structure is to allow the basin to drain and restore capacity for the next event.

The discharge from the basins will be
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by pump, except in that extreme event which may exceed the 10-year storm event. The only discharge from the site will be by a pump. The pump will be discharged through what the Applicant has agreed is an erroneous term. It's not a level spreader. It is not designed to be a level spreader. It's not intended to be a level spreader. It was intended to defuse the flow from the pump velocity.

We had concerns that the pump velocity would, in itself, if not properly managed, would create an erosion problem as it progressed down the slope or onto the slope, or onto any bare soil. Regardless of the topography, in general, when we're dealing with a pump flow, there needs to be a mechanism to reduce velocity. The mechanism that they choose in this case is to attempt to defuse the flow through the perforated pipe wrapped with a filter fabric. But it is not a level spreader, and we did not view it as a level spreader.

The other major issue that we considered, and has been discussed at length in the past three days, is the conceptual
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nature of the Stormwater Pollution Prevention Plan. We viewed the DEIS to be the document that identifies the impacts, proposes

mitigation to the impacts; and in this case, we have asked them to go beyond that and demonstrate clearly the feasibility. We had significant concerns given the physical -- not size constraints on the project, they're not limited by space area -- what they are limited by is physical site constraints like topography, depth to bedrock, and the soils themselves. We asked them, required them to demonstrate that it was feasible to construct the proper mitigation measures. The initial DEIS indicated that we need -- as an example: We need to provide X amount of storage to mitigate this impact. We will provide X amount of storage. It did not say how they would provide it, and it did not elaborate on how or if they could be constructed. In the most recent DEIS, which is what is before us, they did, in our opinion, demonstrate the feasibility of constructing the proper mitigation measures.

The detailed plan, again, this goes

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back to the individual permit, it allows us clear review authority over each phase as the project progresses. There is an advantage to this. There's a disadvantage in that we don't know how they will deal with something five or six years from now. The advantage is that it allows us to change as we progress; a clear ability to change design, to change construction methods.

The other advantage that we see to the pieced Stormwater Pollution Prevention Plan or phased submission of the Stormwater Pollution Prevention Plan was actually alluded to by Mr. Ruzow in that the designers are a significant component of the plan. If the plan is developed entirely, and not generically just on this site, but it's a problem we have encountered with other projects -- a plan gets developed in its entirety, we accept it, the project gets sold to another developer, the other developer brings in their own consultants. They attempt to implement the plan without having the same thought process that the designers used. That's a significant component, and it affects

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how the plan evolves. It's one advantage that we see to phasing in the Stormwater Pollution Prevention Plan.

But again, to re-emphasize, we've evaluated only a portion of the project in detail. No portion of that project, including Phase 2 of Big Indian, do we consider to be appropriate for construction at this time. Even Phase 2 at Big Indian needs to be modified. The focus of the Phase 2 Big Indian -- and Phase 2 of Big Indian was chosen because, one, it's the largest; and two, it's most representative of the type of development that will occur on both projects.

We agreed that the most severe potential for water quality issues will be the construction of the access road to Big Indian, but that construction of that access road we did not feel was most representative of the type of development that characterized these two projects -- and that is the construction of the golf courses.

But even for Phase 2 of Big Indian, we don't consider that the plan that's part of the DEIS to be something that would be

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suitable for construction. It focused on how those 25 acres maximum capped areas would be broken down into subphases. It focused on how the sediment basins and the use of the flocculent will be incorporated into the plan. But it has not, most significantly has not demonstrated that comprehensive implementation of acceptable practices and has not adequately elaborated on the aggressive stabilization program that we will hold this project to.

ALJ WISSLER: Where in the process should that occur, Pat?

MR. FERRACANE: It could occur now for the detailed part of Phase 2. It could have. This is typical of plan submission -- this is what we're doing, okay, do this, do that, make changes, back and forth. It could occur at this, but we will also consider this to be an adequate demonstration of what we consider to be the most significant issues; but the

detailed construction drawings for Phase 2 we will not require to be submitted to us until that 60-day period that's established by the individual permit, 60 days prior to construction. And it cannot progress until we





sign off on the project, or that component of the project. That's when we're going to look at the detailed nuts and bolts of the Stormwater Pollution Prevention Plan, or at least that's our intention.

Another issue that's been discussed is the -- before I get to this, I think I need to also point out that references that the Applicant has submitted as exhibits to our New York State Stormwater Management Design Manual were extracted from the October 2001 version of that manual. It is not the current version of that -- of our Stormwater Management Design Manual. The current Stormwater Management Design Manual has a date of August 2003 and includes modifications that we've made to the manual up until February of 2004.

ALJ WISSLER: As relevant to the parts that they have addressed though? What's the difference, if any?

MR. FERRACANE: The difference is -- if I understand your question properly -- the difference, your Honor, is that the actual items that they have submitted are no longer -- or one of the items that they have

submitted is no longer part of our manual. I think that was 37, and it was the Pollutant Load Analysis, the simple method. That's no longer part of our manual.

The reason it's no longer part of our manual is we no longer consider pollutant load comparisons, we being DEC, no longer consider pollutant load analysis and pollutant load comparisons to be a required element of the Stormwater Pollution Prevention Plan.

ALJ WISSLER: Is the manual available on the Division of Water's website?

MR. FERRACANE: I don't think so, the current version. Our website includes some of the changes or some references to the changes, but what it does include is a link to the New York State Department of State website which has our most recent version of the manual available.

ALJ WISSLER: Is that a PDF format?

MR. FERRACANE: Yes. The last I looked at the manual that's on our website, it is still the older version, as hard as we have tried to correct that. We realize that is a confusing issue, and it's been problematic for





us, but that is not related to this.

ALJ WISSLER: There's nothing I can do about it either.

MR. FERRACANE: Again, I want to emphasize that we note that the simple method

is no longer part of our design manual because we don't consider pollutant load comparisons, pre- and post-development pollutant load comparisons to be a required element of the Stormwater Pollution Prevention Plan.

The reasoning that we apply, or that has been applied is that the -- the principal authors of our current New York State Stormwater Management Design Manual is the Center for Watershed Protection, which along with other people like Dr. Pitt who testified the other day, are leaders in the development of stormwater management control measures nationally. They were the principal authors of our manual.

It's their opinion, and one that we agreed with -- actually it's been tested over time -- that all of the practices in our manual designed in accordance with the appropriate water quality volume will achieve



a removal efficiency of 80 percent total suspended solids and 40 percent phosphorus. That's where the number that the Applicant drew that removal efficiency from.

Our manual states -- this in Chapter 5, that: "Designed in accordance with these standards in Chapter 6, and sized for the water quality volume as defined in Chapter 4, 80 percent total suspended solids, and 40 percent phosphorus is the expected removal

efficiency."

Now, removal efficiency is going to be highly variable, it's going to be highly variable from one type of practice to the next, and it's going to be highly variable from a practice at the same location over time.

Removal efficiency can be deceptive. Removal efficiency is based on loading. The lighter the load coming into the treatment practice, the lower the removal efficiency. The heavier the load, the higher the removal efficiency. So if you have a storm event that it hasn't rained in several weeks -- you get a storm event, you may have a much higher



concentration of pollutants. The removal efficiency that you measure from that pond may show greater than 80 percent TSS removal and greater than 40 percent phosphorus. That same practice on the next storm event which occurs a day or two later, the removal efficiency may be lighter.

Another significant issue that has come up has been the Applicant's use of the HydroCAD or the Applicant's use of the model HydroCAD. We need to point out how we evaluate those types of hydrologic models -- not a whole lot different than the pollutant loading models that we occasionally come across. And the pollutant loading model that was used for this project is more relevant to

the establishment of the TMDL that we will discuss later, not so much to the design of the basin in this particular instance.

Again, we're looking at a water quality volume as defined by the New York State Stormwater Management Design Manual. But going back to the HydroCAD model, or any hydrologic model, we do not do a detailed assessment of the hydrologic models that are



presented before us. We don't routinely run models on our own, and we do not consider ourselves experts in the running of the models.

To adequately evaluate, or to do a detailed evaluation of a hydrologic model, you would have to duplicate the model, which we don't have the expertise to do, or enough to say that we are -- our model or the results of our model are better than the Applicant's, or we agree with the Applicant. It's not the level of detail that we -- we evaluate plans, and it's not what the general permit considered, that we would do these detailed analysis on every project that came before us.

What we do look at is basic assumptions, and basic assumptions can be variable from one project, one designer to the next. There is a great deal of subjectivity that goes into the development of a model. A designer's point of view, what they saw on the

site, what another designer may see on the site may cause a divergence in the end result. There's subjectivity that influences the final result.

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For instance, Mr. Carr described a specific issue associated with this project. The issue related to time of concentration and actually lack of shallow concentrated flow, and to reiterate, flow goes sheet flow, shallow concentrated flow, channelized flow. What they eliminated from their analysis was the sheet flow from the pre-development scenario. That may have been a significant assumption that would have caused a problem. The reason being that if they eliminated that sheet flow, they in the end artificially raised the post-development peak rate of runoff from the project. By artificially raising the peak rate of runoff from the project, they artificially lowered their need to attenuate that. The larger the pre-development peak load, the lower that they have to attenuate or would need to.

To address what Mr. Carr pointed out, is that he used the same assumption in the post-development phase, and that's significant. Consistency is a significant issue. Did they use the same thought process in post-development that they used

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pre-development? That's one of the basic

things that we're looking at. Were they consistent in how they evaluated the peak rates of runoff in pre- and post-development conditions.

The other is are their assumptions within reason? Did they make some -- characterize some site conditions which were clearly not evident? Those basic substantial deviations from what we consider to be reason would now cause the model to result in much higher differences in what's normal.

One of the flags that we look at is at what point in the hydrograph are they estimating that they will have runoff? We often see hydrographs as part of a hydrogeology model which will not estimate runoff coming from a project that's 50 acres of parking lot until the 11th hour of the storm. That's not reasonable. That's a flag. That's when we look at the model in more detail.

ALJ WISSLER: Why is that not reasonable?

MR. FERRACANE: When you have a
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parking lot or any type of land cover that has a very high curve number, parking lots or asphalt is generally 98, you generally have short sheet flow lengths and short time of concentrations.

ALJ WISSLER: You're going to see the

results of runoff a lot quicker?

MR. FERRACANE: You're going to see runoff very early in a storm event. At the 11th hour in the storm event is just not reasonable, not realistic. We did not see anything that was unreasonable or not in the ballpark with the way they evaluated HydroCAD; but again, our depth of analysis was not comparable to what New York City did with theirs.

That's a summary of the issues that have been discussed and how we considered that in our review process. We do have very significant concerns about the project based on the information that's in front of us now. They relate to both the construction activities of both projects but also post-development runoff impacts.

Regarding the construction activities,



we do have this larger area of disturbance that goes beyond what our general permit would limit them to. This amount of disturbance certainly increases the potential for water quality impacts and increases the risks.

ALJ WISSLER: We're talking about the up to 25 acres' disturbance?

MR. FERRACANE: Yes. It increases the potential for water quality problems and increases the risk, and it certainly is a concern; particularly in this area because of the environmental sensitive issues. The

environmental sensitive issues are not limited to the New York City water supply.

We have other issues that we need to carefully consider the potential impact of this project, most notably the potential for impacts to the trout spawning streams within the area, Birch Creek and Esopus Creek. The potential impacts -- and not being a fisheries biologist, I can't speak to this as an expert -- but the potential impacts related to sediment loading on a trout spawning stream are significant or can be significant.

Esopus Creek in particular, it's

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listed as an impaired water body on our priority waters list. It's a 303-D listed water body, meaning that its best usage is already impaired. It does not meet the best usage for the majority of the time. There are certain times when it will meet best use, and there are more times when it won't be. That's how we arrive at impaired level.

The Esopus Creek is impaired for sediment. That's the pollutant. The source of the pollutant is, I believe stream bank erosion -- if it's not the primary -- is a significant contributor to that. Stream bank erosion in a natural setting, not induced by disturbances or construction activities. That has not been identified as a source, as I recall. I could correct that later, but

that's, as I recall the listing, in our priority water list for the upper Esopus Creek, the upper Esopus Creek being that above Shokan Reservoir.

So the exposure of soil through construction activities certainly increases the risk of erosive and sediment loadings to these two streams, which could have

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significant impacts on those streams' continued ability to meet its best use -- or at least Birch Creek's ability to meet its best use -- but our ability, and we are required, it is our mandate to not only maintain the best use of a water body but restore it. And the ultimate outcome of a 303-D listed water body is that a TMDL will be established at some point. The TMDL will establish how we can restore that back to meeting its full -- the best usage all of the time.

Introducing artificial or man-induced erosion potentials into those watersheds for those two water bodies significantly could affect our ability to now restore it to what it should be or to maintain what it already is. It's a generic concern about the disturbance that's associated with the project.

We pointed out some significant issues, but the main issues being the erodability of the soil and the settleability

of the soil. The settleability of the soil in terms of runoff that's contained within the

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construction areas, we believe they proposed a measure which can adequately manage that; but we still need to evaluate how they will address the erodability of those soils, the actual movement of those soils from the construction area. That's during construction.

The operational phase, we have one significant concern. One concern that we have, and it has grown in the past couple of days, is the modeling for the HydroCAD. New York City was correct in saying that if the modeling for the pre-development runoff is inaccurate, it throws off everything, and it affects the sizing of the basins. If that degree of accuracy is off significantly, it could affect the rate of discharges from the basins if they have been undersized.

But again, we have not made that definitive determination that we believe the HydroCAD models to be inaccurate. But certainly it is a concern. If they're not accurate, the basins will not function properly, and the erosive flows from those basins or the velocity of the flows from those

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basins may increase the erosion potential.

And that's our overriding concern with

the project, Big Indian most significantly, is that the stormwater basins that are located along the ridge -- there's a number of them, I believe seven -- nine basins that are located along the ridge of Big Indian that do not discharge into a stabilized conveyance system, that do not discharge into an existing stream, they discharge to overland flow is what the proposal is, and the overland flow areas are very significant slopes with highly erodable soils. We're concerned --

ALJ WISSLER: I want you to continue, but if you could show me on some of the plans we have here, the base of the areas that you're talking about? You said there were eight basins along the ridge?

MR. FERRACANE: Sure.

ALJ WISSLER: You don't have to do that right now.

MS. KREBS: Your Honor, we can do that now.

ALJ WISSLER: If it fits into your presentation.

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MR. FERRACANE: It certainly fits in. It shows the outlets to the steep slopes.

ALJ WISSLER: We're looking at SD-6.

MR. FERRACANE: Pond 13 discharges over land. Pond 17 discharges over land. 16.

ALJ WISSLER: When you say discharges over land, Pat, which way is it going to go?

MR. FERRACANE: It's intended to go to

a level spreader and down a slope, and I'll get to that afterwards, but they are discharging across this slope, not into a pipe, not into a channel or a constructed conveyance system, not directly into a stream but across a significant slope area.

ALJ WISSLER: Okay. So we have 13, 17, 16.

MR. FERRACANE: 8, 21 and 15. 17 was not one of the numbers earlier. We must have missed that.

MR. CARR: There's hardly any flow coming out of that one.

MR. FERRACANE: It's a small one.

MR. CARR: And there's very little coming out of these, although they're at the top of the slope.

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MR. FERRACANE: I think 25 is the one New York City pointed out.

ALJ WISSLER: What three?

MR. CARR: 36, 37 and 38.

ALJ WISSLER: Okay.

MR. CARR: Those were on SD-7.

MR. FERRACANE: We didn't have 17.

MR. CARR: I just added it because it was at the top of the slope.

MR. FERRACANE: The reason that's a concern, and Dave Carr went through his evaluation of that, sort of touched on it yesterday, but they need to elaborate on it

further, is that under existing conditions there is no erosive flow coming off that slope, that the flow rates estimated coming off that slope under existing conditions are much higher than they will be under proposed conditions.

The significant difference is that those flows coming off those slopes under existing conditions are starting out at least as shallow concentrated flow, but in some instances may be sheet flow. It is not the concentrated discharge that will occur under

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the post-development control scenarios for the discharges from the ponds.

So the ponds are actually taking diffuse or non-point source or diffuse flow, concentrating it and discharging it through a point source or concentrated flow, so it's now starting out as concentrated flow.

ALJ WISSLER: Something it wasn't before?

MR. FERRACANE: Exactly. As it discharges down the slopes, and slopes of anywhere from 20 to 60 percent that have been presented, can result in erosive velocities as they pick up speed as they go down the slope. The cubic feet per second or the peak rates of runoff from the design storm, I believe it was the 10-year storm that was assessed yesterday -- was it, Dave?

MR. CARR: 100.

MR. FERRACANE: 100-year. And that was the storm that New York City also discussed. The peak rate of runoff is what's coming out of the basin. It's not accounting for what may actually occur as the flow progresses down the slope. The discharge



points do go to level spreaders, and these are level spreaders in the proper context, although they may not be acceptable as yet. This is the time where you would use a level spreader, or properly designed level spreader.

Unfortunately, the flows that are discharging from the pond are often -- are always discharging to slopes with greater than 10 percent. Our design standards for level spreaders do not suggest that they should be used on slopes greater than 10 percent, and the reason being that they may not effectively maintain the concentrated flow. It may temporarily result in a more diffused flow, but given the slope, may reconcentrate, and again cause erosive velocity.

MR. CARR: Can I just make one point of clarification? The values that I gave yesterday were not the flows coming out of the pond. They were the flows at the bottom of the slope after they came out of the pond. That's just a point of clarification.

MR. FERRACANE: Is that going to be summarized in your detailed response to this?

MR. CARR: Absolutely.
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MR. RUZOW: Yes, we'll explain that.
MR. FERRACANE: Okay.
ALJ WISSLER: That's it?
MR. FERRACANE: Yes. Unless you have any questions?
ALJ WISSLER: No.
We're going to take a break here. It's 11:30. Why don't we take 10 minutes.
(11:30 - 11:51 A.M. - BRIEF RECESS TAKEN.)
ALJ WISSLER: Ms. Krebs.
MS. KREBS: Next I would like to turn to Mr. Bill Mirabile concerning the SPEDES permits themselves. We have one chart, your Honor, which Mr. Mirabile drew up this week to clarify some of the concerns raised, questions raised regarding the permits. It's not in evidence, your Honor. First of all, he's going to use some of the SD charts, and then we're going to use our chart. So it's not a formal chart that we can present to your Honor or counsel, but we can go back to the office and draw it up formally. We can leave it as an exhibit, if you wish, or we can submit it later. It's a hand-drawn chart.
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ALJ WISSLER: I can take it in as an exhibit, but it needs to be copied in a way that copies can be made available. I would prefer that the exhibit he uses during his

presentation here be the exhibit that gets entered into evidence. You understand what I'm saying?

MS. KREBS: Yes.

ALJ WISSLER: So we'll take this and then you'll provide copies to everybody?

MS. KREBS: Yes, I will. Thank you, your Honor.

Mr. Mirabile, can you briefly state your education.

MR. MIRABILE: Again, my name is Bill Mirabile. I'm an Environmental Program Specialist for the DEC's Division of Water, and I have a Bachelor of Science Degree from the State University of New York at Albany. I first started with the Department in `77\`78 -- it was a long time ago -- in the Division of Water, at which time I was involved with water quality modeling, calibration and development for assimilative capacity determinations, and then went on to



wastewater treatment plant construction management; went to the private sector for about seven or eight years, all involving water quality, wastewater, and came back to the Department in 1990, and came back to the Division of Water about 1996 or `97, and I've been a permit writer for the last three or four years. So suffice it to say, I've been in a lot of cubicles in my career.

MS. KREBS: Thank you, Mr. Mirabile.

Turning to the design plans, did you want to point out something regarding the SPEDES permits themselves?

MR. MIRABILE: I would, yes. I have a few visuals up here which I wasn't planning on using, thinking back earlier in the week, but reviewing some of the comments that were identified after the public comment period, and also the City mentioned, I think Tuesday, that the Big Indian permit was not as environmentally protective as the Wildacres permit.

I would like to basically explain the rationale for how the permits were developed and what's behind them. I think people want

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to understand them a little better; and at the same time, I believe it will address the City's comments about the Big Indian permit not being as environmentally protected as the Wildacres permit.

For the record, this is SD-2, Wildacres Resort, Highmount Golf Course. It was drawn up by the LA Group. This shows the Wildacres site, most of it, not all of it. I believe there is another drawing, but as you can see by my notes -- again, these weren't intended to be used as visuals. These were my working drawings, but they lend themselves nicely to this purpose because I have the ponds all highlighted in green, so it's quite

easy to get a perspective of where the ponds are in relation to other things.

As a quick overview here, we have Emory Brook -- it's not shown on the plan, but it's roughly along here -- correct me, LA Group, if I'm misstating any of this. We have Trib. 3 to Emory Brook, which is right here. (Indicating)

MS. KREBS: You're pointing to the middle of the plan?

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MR. MIRABILE: It's basically an intermittent stream, but it is a classified stream. This is, again, Trib. 3 that I'm speaking about; and this, by the way, is the receiving water for the treated effluent from the wastewater treatment plant that's being proposed.

Down here we have Trib. 2 to Emory Brook. This has quite a bit more flow, although it may still be intermittent. As far as I know, it's a federal wetland. (Indicating)

MS. KREBS: You're pointing to the left of the map going south to north?

MR. MIRABILE: That's correct. So we have Trib. 3, Trib. 2, Emory Brook down here, and I think it's important to point out that whenever we draft a permit, a number of -- a few primary considerations, one of them being, of course, the quantity and quality of the

wastewaters, the stormwaters that we're looking at regulating or permitting, the other being the classification of the receiving waters. And that's a very important point. You have Classes AAA down through Class D.
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The higher the letter, the higher the classification, the higher the quality of the water, in very simplistic terms.

In this case we have -- Emory Brook is a Class BTS. It's a very high quality surface water. T is for trout, and S is for spawning, so it's a trout spawning stream. So you have a very, very critical aquatic life consideration with any discharge that's going into Emory Brook.

The tributary classifications are Class B. For the purposes of the water quality evaluation, I can tell you that Mr. St. Lucia considered any wastewaters being discharged from a Class BTS perspective because that is the ultimate receiving water.

MS. KREBS: And Mr. St. Lucia is?

MR. MIRABILE: Mr. St. Lucia, he was here yesterday. Unfortunately he had to leave. He's the water quality engineer that evaluated my proposed limits when I drafted the permits. And what the water quality engineer does, he takes into consideration the dilutions or lack of dilutions, and whether the proposed limits by the permit writer are
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adequately -- are stringent enough for the classification of the receiving water.

With all that said, again, the ponds are in green. This is the irrigation pond. We're not discussing that right now, but these are the micropool detention ponds -- I may have missed one or two, I don't think so -- but as you can see, it's very evident. These ponds are discharging almost literally on top of classified surface waters.

By the way, there's a ditch along the railroad tracks here, and basically it catches the bottom of the site, is most downgradient of the site, and it also catches quite a bit of runoff, I believe, from the ponds. So you have the ponds discharging to either classified surface water or the ditch -- and the ditch, by the way, we considered to have a classification.

ALJ WISSLER: Bill, when you say classified surface water, you mean Emory Brook?

MR. MIRABILE: Yes, Emory Brook and the tributaries, they're all classified. But because the ditch is connected to a classified

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surface water, that ditch also basically, in essence, takes on a classification of the waters that it connects to.

So, again, I'm just establishing that some of the micropool detention ponds in the

case of Wildacres, actually virtually all of them, are discharging directly to a classified surface water; therefore, aquatic life is a very real and the primary consideration and the protection of the surface water.

ALJ WISSLER: Bill, let me stop you right there. Come over here onto my map here. I'm looking at Detention Pool 16. That says Emory Brook right above it?

MR. MIRABILE: Yeah, that's right, Emory Brook is somewhere -- it's not shown on the map.

ALJ WISSLER: What is this here?

MR. MIRABILE: That's a design point.

ALJ WISSLER: Where is this discharging to?

MR. MIRABILE: That would be discharging to the ditch.

ALJ WISSLER: And the ditch is?

MR. MIRABILE: Along the railroad tracks.



ALJ WISSLER: But it's not indicated on this map where that discharge would occur?

MR. MIRABILE: Very subtly. You kind of have to look at the flow direction arrows coming out of the ponds.

When I was first given the task of writing the draft permits for these projects, the first thing you look at was the quality and quantity of the discharges and the receiving waters. These discharges from the

ponds being, basically, right into classified waters, I made a decision to designate these discharges as outfalls, specific outfalls. And in page 2 or 3 of the Wildacres permit, you will see a list of all the outfalls, stormwater pond outfalls, and with the outfall designation.

ALJ WISSLER: Let me stop you there.

MR. MIRABILE: Page 2 of 23.

ALJ WISSLER: This is entitled, "Additional Outfalls." It starts with: "Outfall 003, Micropool Detention Pond 1, and goes through 0015, Micropool Detention Pond 4"?

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MR. MIRABILE: Correct. And in the there, by the way, 001 is the treated wastewater effluent from the treatment plant; and 002 would be the treated wastewater effluent which goes to irrigation. So the basis of the establishment of the outfall numbers in the Wildacres permit. This is the other part of the drawing for Wildacres and shows a couple of other ponds here. (Indicating)

MR. RUZOW: What drawing number?

MR. MIRABILE: This is SD-4. I don't have much to say on this. The point I wanted to make was really with the other drawing, but there are a few other ponds.

Now drawing SD-7, Big Indian Plateau,

Big Indian Resort and Spa, Big Indian Country Club. Now -- again, I'll give you an overview of the site here. You have Birch Creek which is -- Birch Creek is somewhere down along here, 28. We have a lot of forested land. Then we have -- we're looking south to north. Then we have the micropool detention ponds for a major portion of Big Indian -- but again, Big Indian is spread over a couple drawings,

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but this serves the point.

So we have the micropool detention ponds here, you have irrigation ponds here. We have a couple of micropool detention ponds which drain to a different drainage basin. (Indicating)

MS. KREBS: These are all on the lower end of the drawing?

MR. MIRABILE: Correct.

ALJ WISSLER: These are what we identified with Mr. Ferracane?

MR. MIRABILE: I believe so. I wasn't really privy to your conversation. Is that correct, Pat?

MR. FERRACANE: What were the numbers of the ponds again?

ALJ WISSLER: He's locating the detention ponds around Big Indian; 38, 37 --

MR. FERRACANE: Is it the irrigation ponds or the perimeter ponds?

ALJ WISSLER: He's talking about perimeter ponds.

MR. FERRACANE: Those would be the same.

MR. MIRABILE: The point I'm trying to make here is that with Wildacres, we have classified surface waters receiving direct discharges of either stormwater or treated wastewater effluent.

That's not the case here with Big Indian. We have micropool detention ponds which are undergoing the same design criteria; however, the discharges from the ponds, the ones that are discharging and are not connecting to the series, they're discharging to the land. We refer to that as overland flow. And we -- eventually the discharged water from the ponds could reach the -- could reach Birch Creek. It may or may not, depends on the magnitude of the discharge, and again, the discharges from the ponds hopefully will be intermittent.

So the quality of the discharge from the pond after undergoing physical, chemical and biological processes flowing through the forested land, if it does reach Emory Brook at all, by the time it gets downgradient to the receiving water from here, it's not going to reflect the quality that comes out of the pond. So no direct discharge to classified surface water; therefore, I decided not to

designate these pond discharges as outfall numbers. They are discharges, but they are to overland flow.

This is another drawing, SD-6, from Big Indian, another portion of the site. The point I want to make now is this is something I drew up rather quickly. I apologize for the lack of the professional preparation. It was an afterthought. I'm not a great writer. (Indicating)

ALJ WISSLER: Don't apologize, looks fine.

MS. KREBS: Your Honor, do you want to mark it now or later?

ALJ WISSLER: It will be Staff's 7. We can mark it later.

MS. KREBS: Thank you, your Honor.

MR. MIRABILE: Again, looking at the Wildacres permit, what I've done is -- it's entitled, "Ambient Stormwater Monitoring Requirements," and the intention and objective of this chart is to show a comparison between the two sites and the level, if you will, of the environmental protection that the permits



are presently affording.

Over here, we have the point sources, MPDP, micropool detention ponds, Wildacres and Big Indian. Under the Point Sources column, we have -- under the leftmost column, we have point sources -- these would be the ponds -- ambient monitoring requirements, ambient for

surface waters and ambient monitoring requirement for groundwaters. We have the center column being Wildacres, the right column being Big Indian. (Indicating)

You can see by this chart here that they're very substantially similar requirements. Even though we have outfalls designated for Wildacres, we don't have outfalls designated for Big Indian. I explained why, the fundamental difference. We do have essentially the same monitoring requirement. It's not the same but very, very similar. (Indicating)

For the ponds, we have flow, monthly monitoring for Wildacres, monthly monitoring for Big Indian. Total phosphorus, same thing, monthly for both sites. Total suspended solids, Wildacres, monthly monitoring. I have



no TSS monitoring for Big Indian because we don't care about the TSS coming out of the ponds because it's discharging on land. We're certainly not protecting aquatic life here.

Pesticides, monthly monitoring for Wildacres, three times a year for Big Indian; for similar reasons, Big Indian discharges are not discharging to surface waters, they're discharging to overland flow. And toxicity testing, which would be testing of the pond discharges, three times per year for Wildacres, three times per year for Big

Indian. The same for both sites.

Ambient surface water monitoring. Flow, per sampling event for both sites. Total phosphorus, monthly for Wildacres; monthly for Big Indian. So it's the same for both sites. Pesticides, three times per year for Wildacres; and again, none for Big Indian because surface waters -- they're quite a long ways away from the discharges of the ponds.

So at this point I have no pesticide monitoring for Big Indian -- I'm sorry, ambient surface waters. Lastly, ambient monitoring for groundwaters, nitrates, which



is a primary concern for groundwaters, quarterly monitoring for both sites, Big Indian and Wildacres.

Same with pesticides. I had seen several comments where pesticides monitored for groundwater is not specified in the permits. I don't know where that came from. It's in both permits, and it's required on a quarterly basis for both sites.

Now, the permits -- to wrap up here, the permits are structured a little differently. The Wildacres permit has -- pages 8 and 9 of the Wildacres permit, it has what we call the limits page. This -- these pages specify the specific parameters to be monitored, the limits, if we have them, and we do, and the units, micrograms per liter, gallons per day -- kilograms per year, gallons

per day. Monitoring frequency and sample type. It's called grab samples.

ALJ WISSLER: For the sake of the record, I'm looking at Office of Hearings Exhibit 10 which is the draft permit for Wildacres Resort Sewer Works Corp.

MR. MIRABILE: So we have a limits page in the Wildacres permit. We don't have a limits page in the Big Indian permit because the limits are basically -- or the monitoring requirements if there aren't limits are specified in the special section because we don't have an outfall limits page. Big Indian permit has, again, the similar monitoring requirements in the section entitled, "Special Monitoring Requirements," and they start on page 11 of 21.

MS. KREBS: For the record, your Honor, I believe it's Office of Hearings Exhibit 11.

ALJ WISSLER: I think it's all part of 10, but it's the draft permit, Big Indian Plateau Sewage Works Corp. What page were you directing me to?

MR. MIRABILE: 11 of 21, Special Monitoring Requirements. Again, you'll see micropool detention pond monitoring for total phosphorus. If you flip the page, it's pesticides, and it gets into your surface water ambient monitoring requirement. So the

same requirements are in each permit, and they're structured a little differently
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because we have designated outfalls in one permit and not the other permit.

To conclude, these are draft permits. That's part of the process. This is the way we do all SPEDES permits. We receive an application, we draft a permit with the information that we have, and then we go from there. It's an evolving process. This is the first cut of the permits. I made some minor changes, but the next step is to consider comments, consider issues.

We heard yesterday -- most of the week, we obviously have concerns about stormwater and channelized flow. Well, we may want to go back and after the Applicant takes another look at it, DEC takes another look at it, we may have new discharge sites established for the Big Indian site, Birch Creek. If that's the case, we will go back, and change the permits to accommodate that new information.

We heard there's been a lot of questioning of the use of the WinSLAMM model, and the subsequent estimates of the phosphorus loading, the TMDL. Well, that's -- from what
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I heard, that's going to change. If, in fact it does change, the annual loading limit, the TMDL, phosphorus TMDL number changes for the

permit, we'll make that change in the permit.

We had comments on maybe you should add these ponds to capture or track water quality from these ponds because you're not quite adequately seeing what's going to flow into Giggle Hollow. Well, we may add some ponds. I'm just giving some examples. Just again, the permits are a draft. They absolutely will be changing from this point, but the objective here is to ensure environmentally protected documents and to set a template for what would be a final permit if it gets that far.

ALJ WISSLER: Bill, looking at the Big Indian section of this, under what circumstances would you want to see an outfall designated for one of these ponds specifically contained in the SPEDES permit?

MR. MIRABILE: In what circumstances would I want to see an outfall designated?

ALJ WISSLER: Right.

MR. MIRABILE: Sheet SD-7. I'm not





sure that that would be the case, but if the HydroCAD modeling is done again, and it shows that there will be channelized flow reaching Birch Creek -- right now, as Mr. Ferracane, I believe, pointed out, it's an engineering problem. LA Group will go back and probably recheck the model, see if they want to tweak it or change it. It may be they may want to

put some piping in that has not been envisioned now, or they may want to put some designed channels in. Whatever is the case. There may be a change in the plan to have an intentional discharge from some of these lowermost or downgradientmost ponds to the receiving water. I'm not saying that's going to be the case. I'm just saying that's a possibility.

So if there is designed channelized flow to Birch Creek, then we would -- maybe -- either an outfall or at least put monitoring requirements in there. It's not that easy of a problem to address actually. It sounds like it is; but, for example, what storm do you use? If you use 100-year storm, you're going to have flow in a lot of these existing dry

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swales. If you use a 25-year storm, there are going to be less channels created with a 25-year storm. I'm just pointing out that there are a number of considerations that you may not really think about firsthand.

ALJ WISSLER: The 10-year storm, 25-year storm, was that part of the Department's thinking in the development of the Wildacres permit, the outfalls of the Wildacres permit?

MR. MIRABILE: Yes and no. Mr. Ferracane, Dave Gasper and a bunch of other people in the Department are looking at the design of the micropool detention ponds.

The limits in the permit, the Wildacres permit -- the limits in the Wildacres permit really wouldn't change depending on the storm duration or storm intensity. If you turn to the limits page for the stormwater, that would be page 8 of 23.

ALJ WISSLER: 8 and 9.

MR. MIRABILE: You can see that this is really a discussion -- pesticides are a discussion for another time, but we'll touch upon them now. The limits in here now for

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pesticides, for example, they'll be called concentration-based limits. So the flow changing out of a pond is not going to affect that type of a limit. It's a concentration. That concentration, 25 parts per billion, 25 micrograms per liter, has to met no matter what the flow.

ALJ WISSLER: No matter what the precipitation event is?

MR. MIRABILE: Correct. On the other hand, if you have a mass-based limit, for example, total phosphorus -- that's the only mass-based limit for these outfalls. The flow directly relates to the mass because the concentration times the flow, in simplistic terms, gives you the mass. So if you have a higher flow at a given concentration, then you will have a higher mass.

This 21 that's in here, chances are

very high that it will increase. But if the flow does increase from the ponds, collectively speaking, then -- that's the point. The mass-based limit is for all of the ponds for total phosphorus, but the mass-based limit is dependent upon the flow.



(Indicating)

MS. KREBS: One final comment. Based on what you have so far in the DEIS and what you have heard, can you comment on staff's position concerning these draft permits? Do they meet the --

MR. MIRABILE: Yes, do they meet the intent of the SPEDES program, or are they environmentally protective, adequately environmental protective? I believe they are; but, again, I want to qualify that they are a draft and this being an evolving process, we're hearing new information, and they will be changing. But the template is basically set, and I believe that the way it is set up now, they do meet the intent of the SPEDES program.

ALJ WISSLER: Bill, just clarify that last point for me. You said, as you have heard things and you look at -- you will be making all kinds of changes in the permit?

MR. MIRABILE: All kinds of changes could take place with the permit?

ALJ WISSLER: As a result of this proceeding.

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MS. KREBS: I think absent a change in water issues --

ALJ WISSLER: I just want him to expand upon what he just said.

MR. MIRABILE: Okay, that's a good question. The template is set, the sections will probably stay as they are. We may add another groundwater monitoring well for pesticides and nitrates, depending on the comments received. That's what we do. We look at the comments after the public comment period. Some comments are great; others are not so great. The comments that are good comments, we scratch our head and say: That's good, maybe we should tweak the permit a little bit to address that comment. And again, I would hazard a guess to say that the TMDL for phosphorus, the number that's in the permit right now, chances are that will be going up.

So that's a good possibility, depending on the results of the Applicant's HydroCAD analysis after the concerns they have heard during the week, and Mr. Ferracane's and Mr. Gasper's review, there may be some -- we



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may add outfalls. It's possible to add more outfalls.

So we have some comments from the health department. Some of the ponds should

be lined, and I don't think I mentioned this to you yet, to the Applicants, but because they're in a recharge area for the Fleischmanns water supply. That's a very good comment, and we're looking at that. However, something like that would not necessarily result in a change in the permit.

ALJ WISSLER: Just the construction of the pond?

MR. MIRABILE: Right. Does that answer your question, Judge?

ALJ WISSLER: Sure does.

MS. KREBS: Thank you, Mr. Mirabile.

Your Honor, we have one more Department staff person who wants to speak concerning the SPEDES permits, Shayne Mitchell from the Division of Water in Albany.

Mr. Mitchell, would you briefly summarize your educational and professional experience.

MR. MITCHELL: I have a Bachelor's of



Science Degree in Chemical Engineering. I'm a New York State licensed professional engineer. I've worked for the Department of Environmental Conservation in the Division of Water for 18 years, and currently I'm the chief of the Wastewater Permits Central Section in the Division of Water.

What I would like to do is first just briefly elaborate and reinforce on some of the issues brought up by Mr. Mirabile. One item

would be potential changes to the SPEDES permits. I believe Mr. Ferracane had raised some potential technical questions concerning the ultimate success of the level spreaders for the Big Indian site in terms of maintaining sheet flow.

If a technical evaluation is completed that would lead us to conclude that ultimately those level spreaders will not be effective and essentially the ponds would cause point source discharges, that's one instance where we might want to add outfalls to the permit. And I believe Mr. Mirabile spoke to that, but I just kind of wanted to elaborate a little more.

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ALJ WISSLER: Tell me what you mean. What kind of analysis would be done to make that determination?

MR. MITCHELL: A hydraulic analysis to determine whether the level spreaders, whether that water is maintained as sheet flow or whether it channelizes and forms what we would consider to be a point source.

ALJ WISSLER: Can that analysis be done with the data that currently exists?

MR. MITCHELL: I would have to defer to Mr. Ferracane to answer that question.

MR. FERRACANE: What was the question?

ALJ WISSLER: The analysis to confirm or not confirm the efficacy of the level

spreaders and the use of the level spreaders, does the data to do that analysis presently exist?

MR. FERRACANE: Does it presently exist whether or not the level spreaders can function; is that your question?

ALJ WISSLER: What you said.

MR. FERRACANE: No, I believe the consultants for the project are going to develop that, and that's part of the



submission that will occur later.

ALJ WISSLER: All right. Go ahead, Mr. Mitchell.

MR. MITCHELL: Another issue that could cause changes to the SPEDES permits would be that we heard from the CPC's consultant about the WinSLAMM model and the problem with the application of that model to the site. We also heard from the Applicant, and I wouldn't want to characterize their words, but it sounds like they are no longer confident in the results of that model. That model was used to estimate the non-point source loadings of phosphorus in the stormwater from these two sites.

Now, the limitations in the SPEDES permits and the proposed revision to the TMDL are based on the outcome of the WinSLAMM model, which now appears to be -- the accuracy of that model appears to be in question. So conceivably -- well, what needs to be done is

an evaluation needs to be completed by staff as to our level of confidence in that model. And if we agree with the CPC and the Applicant's model shouldn't be applied, then

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essentially it appears, at least to me, the Applicant should identify an appropriate model, remodel phosphorus loadings, and based upon that remodeling, if we can reach agreement to the outcome of that model run, a revision to the -- a second revision -- a revision of the proposed revision to the TMDL would need to be produced and the draft permits could change.

Previously this week, we heard some discussion about what constitutes waters of the state, and I would just like to state that waters of the state are defined in 6 NYCRR Part 750, Part 815 and Part 862. And waters of the state are not restricted solely to blue lines that show up on USGS maps.

Finally, we -- the Applicant provided information on the water treatment chemical chitosan. I believe that information was contained in the DEIS. They supplied reports or data supporting what the toxicity of that product could be. Earlier this week, we heard from a consultant for the CPC, and I believe the consultant indicated that they had identified a study indicating chitosan might

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be significantly more toxic. It's my understanding that the CPC's consultant did not provide reports or data to substantiate those claims, and I would just like to say that data would be useful to have so that we could complete our evaluation of this chemical.

MR. GERSTMAN: Mr. Garabed referred in his --

ALJ WISSLER: To one part per million.

MR. GERSTMAN: I believe that was the testimony of the Applicant, but we have the documentation referred to in his -- we told you that we would provide you with that documentation, and so we will do that, provide copies to everybody.

MS. KREBS: Thank you.

Thank you, your Honor, I don't think we have anything more unless you have any questions -- I'm sorry, Mr. Mirabile wanted to make a point of clarification.

MR. MIRABILE: I understand I misstated a stream during my presentation, your Honor. I referred to the stream on the site of Big Indian as Emory Brook, in fact



that's the Wildacres stream. The Big Indian stream is Birch Creek, just to clarify that.

ALJ WISSLER: That's okay. I totally missed that.

MS. KREBS: Thank you, your Honor.

ALJ WISSLER: Mr. Young.

MR. YOUNG: Could we have just a five-minute --

(12:31 - 12:39 P.M. - BRIEF RECESS TAKEN.)

ALJ WISSLER: Mr. Young.

MR. YOUNG: I just wanted to explain why the Coalition of Watershed Towns feels so strongly about this issue and about why we're sort of intervening on the issue of stormwater.

ALJ WISSLER: This is the Coalition position?

MR. YOUNG: This is the Coalition -- this is actually the Coalition, Shandaken and Middletown. The Coalition of Watershed Towns is not taking a position on this project. I mean their policy is that these are local decisions. And clearly for us to look at the position of the Town of Shandaken and the Town



of Middletown, and you can see based on the public hearings, there's a tremendous amount of controversy and concerns within those towns as to whether this is a good project or a bad project. We just believe that those towns should be the ones that decide whether or not the project is consistent for community character, but the reason the Coalition of Watershed Towns is involved in this proceeding, particularly on stormwater, is that we want to protect what we believe is our

understanding of how SEQRA is going to be applied post MOA; understanding what we thought the MOA and the programs created by the MOA, how those programs interacted with SEQRA, and in some sense with the City's position on future projects. And to do that, we actually kind of go back.

I have to take you back a little bit to 1885. In 1885, the State Legislature passed a law which back then there was -- I don't know, I forget what the health department was called back then, but some type of health department -- which gave the Commissioner of that health department the



ability to adopt watershed protection regulations. And it made it clear that the waterworks that were benefiting from those watershed protection regulations had to pay the cost of implementation of those regulations.

So -- it was like a waterworks corporation, and it could be a private corporation, it could be a paper plant that needed the water, it could be a resort that needed the water, or it could be a municipality that needed the water. It didn't differentiate, but if the Department of Health promulgated regulations to protect the Village of Catskill's water supply and that costs some money, in order to comply with that, a person had to incur additional costs, the Village of

Catskill had to pay for that. That law evolved and applied to everyone in the state.

In 1913, that law -- or around 1913 -- that law was amended not only to give Department of Health ability to do that, but it also gave New York City, a predecessor to DEP, the ability to adopt watershed protection regulations. Same thing applied though,



they're adopting watershed regulations to protect their water supply. It required them to pay the cost of it. And that's been -- you know recently in 1953, I think the Health Department statutes were recodified, and it now shows up in what we call Public Health Law Section 1104 and Public Health Law Section 1105.

1104 basically provides protection to communities and municipalities. If your municipality has to construct a wastewater treatment plant to comply with somebody else's watershed regulations, then that other person has to pay for that, and in fact, it says you can't enforce those regulations until the other person pays for that.

1105 applies to everybody, not just municipalities. It protects anyone who is injured by the enforcement of a watershed regulation is entitled to compensation from the waterworks benefited therefrom, whether it be New York City Waterworks, whatever. That's

kind of amazing law when you think about it. There was really very little use for it, and there was very little use for it because what
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evolved in our country is the Clean Water Act.

So we -- municipalities didn't have to go out and do these stringent watershed protection programs. There's very little law, case law, because under the Clean Water Act, we protected these watersheds. And I think Mr. Ferracane made out -- actually the water quality standards to protect fisheries are typically much more protected than they are to protect the water supply because the fish are living, they're existing in the water. They're typically more sensitive.

If you look at the drinking water standards versus the water quality standards to protect aquatic life, they're typically more protected. So there wasn't a lot of use for that authority until 1986.

In 1986, Congress said, if you're a water provider and you provide your water from a surface water, you have to filter that water, you have to add this pollution control equipment to your system unless you developed a watershed protection program that will assure EPA that you can achieve the same standards without filtration. And the City,
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facing a huge number -- billions of dollars, elected to apply for an avoidance, a

filtration avoidance determination, and EPA says, okay, you have to come up with a watershed protection program that is going to guarantee to us that your water quality is going to be the same as if you had a filter, that is adequate as if you had a filter.

To come up with that watershed protection program, the City had to restrict how the people upstate use their land. It was no longer good enough that we comply with the complex system of state and federal regulations. That was not protective enough. They had to put an additional level of watershed protection on top of that in order to avoid the cost -- the cost of filtration.

We kind of look at it from the upstate as if the City is mining our water. That water falls on our property. They're telling us in some sense, we like your property, we like your forest because it provides us a natural filtration process. It holds the water. If you take that forest and make it into a golf course or into lawn, well, that's

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not going to provide as much filtration. That's going to give us a lower quality of water, that costs us money, and we don't want you to do it. That's, in essence, the way we look at it.

In the MOA, Governor Pataki, Commissioner Crotty got us all together and

developed a program whereby the City was able to achieve that watershed protection program that they wanted and avoid filtration and adopt a set of comprehensive additional regulations which is being overlaid on the existing state and federal regulations. But we, the Coalition of Watershed Towns, we were there to make sure, one, that the City paid for it; and two, that within that new complex regulatory structure, we were able to survive.

Now that we had -- prior to 1997, there was this big hysteria, there was a big stigma. We didn't know what the regulations were, people were not developing, people were not doing anything, and we wanted a clear set of rules, a clear set of rules that we could live by. And if we could live by those set of rules, then we could have construction or we



could have new development. The decision whether to have new development, as long as they were consistent with the rules, would be a local decision, not a City decision, not a State decision.

ALJ WISSLER: Is that articulated in the MOA?

MR. YOUNG: Not as clear as I'm articulating it.

ALJ WISSLER: Can you at some point cite me the paragraphs in the MOA that support your position?

MR. YOUNG: Okay. So what we see --

the reason we're involved in this proceeding is that we see -- whether it's this project or a shopping center or a small bed-and-breakfast, we're concerned that you have an 800-pound gorilla that could stop a project purely on a procedure process by putting up so many roadblocks, and our understanding is that's not consistent with the MOA.

So here, in this particular situation, for example, in order to protect stormwater, we have a land acquisition program. In other

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words, the City is buying up these lands, and the lands they're allowed to buy up -- and they're supposed to buy up 80,000 acres of lands -- are things that have steep slopes or by water courses or by wetlands. So we have a program, one program that sort of preserves open space and preserves the natural forest and the filtration provided by that natural forest. We have this other set of regulations that really prevents us -- even if we had the land -- it prevents us from really having any significant growth, and that is the septic regulations and the wastewater treatment regulations.

And I can't really stress enough that what we did in the MOA is we protected the people who live here now. We protected them through our septic program. We protected them

through this upgrading program where the City pays the incremental costs, but for new development, the City's position is they don't pay for that.

To give you an example, one of my clients has a trailer park in Amsterdam. They have 40 units, failing septic system. They

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have to build a new wastewater treatment. The cost of the engineering costs -- same engineer I'm using in both cases -- engineer who designed that system, got DEC approval, billed my client 5 to $10,000. The system is going to cost $150,000 to construct.

ALJ WISSLER: And the system in Amsterdam is outside the watershed?

MR. YOUNG: That's outside the watershed. I have another client, a little Hassidic resort. They have 60 units. They blew their septic system. They're right now pumping and hauling in the watershed, $150,000 a year to pump and haul. The engineering proposal to develop a system was $250,000 -- develop and supervise the system. The estimated cost of installing the system is $1,500,000.

That's the -- we can -- we'll go through this, but in reality, we have so severely limited our ability to grow. That's why it's so important to us that if we have a project that can feasibly meet with the regulations, that whether we have that

project, be the Town of Shandaken's decision
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or Middletown's decision and not the City's decision, and actually not your decision as long as we meet your regulations.

Part of the reason we're upset on this water supply is the City has taken -- on the stormwater -- is the City has taken a position on their papers that there's no net increase of phosphorus allowed from pre-development to post-development. They take that position by saying that their regulations incorporate the Phrase 1 stormwater permit. They say there's something in that Phase 1 stormwater permit that mandates no net increase in phosphorus.

From our perspective -- we negotiated that issue in the watershed regulations -- the watershed regulations have a provision relating to stormwater and phosphorus. It applies only in a phosphorus-restricted basin. So we went ahead and negotiated that; and now all of a sudden, they're finding something in this 1993 general permit that -- you can ask DEC whether they interpret it that way -- no one interpreted that way, but they're now claiming that that is the rule which to us is another way of saying we can't have anything
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because Dr. Pitt, if he is correct, said that you couldn't reliably design something that is going to generate less pollutants

post-development than pre-development.

ALJ WISSLER: You have cited me that section of the regs in your petition; right?

MS. MELTZER: I just want to point out that the regs are not at issue in this proceeding.

MR. YOUNG: Well, it's in your comments though, cited as a standard, coming from your regulations.

MS. MELTZER: That's true. We're not raising it in this proceeding.

MR. YOUNG: Okay. That's the same thing about the phosphorus load. You know, the phosphorus load from this particular project, in Pepacton or in the Ashokan -- man isn't the source of phosphorus. It's not wastewater treatment plants that are the source of phosphorus. Phosphorus is natural, and neither of them are anywhere stressed for phosphorus. And the amount of phosphorus that is being proposed here, and it could be proposed for anybody, we don't want that to be



used as a basis to saying this can't happen because, you know, DEC has a process. In their water quality analysis process, they look at whether or not the additional process will cause contravention of water quality standards, and they issue a permit if it won't, and they put controls on it. And we have that here. We just want to be treated the same as everybody else.

ALJ WISSLER: Okay.

MR. YOUNG: I'm just going to reserve to bring Keith Porter and Dean Frasier in. They will testify as a team on the issue of the significance of the phosphorus load.

MR. GREENE: When will that be?

MR. YOUNG: I'm waiting for a call.

ALJ WISSLER: Do you need a response to that at all?

MS. MELTZER: We're happy to brief the history of the Public Health Law in the record at some future point. I don't really want to address it. You know our interpretation of the Public Health Law is not exactly the same as Mr. Young.

ALJ WISSLER: Anything else before we break for lunch?



MS. MELTZER: Yes. I thought yesterday we said we were going to put on the City's stormwater rebuttal before lunch.

ALJ WISSLER: How much do you have, Ms. Meltzer?

MS. MELTZER: I would guess just about a half an hour.

ALJ WISSLER: Then you're done for the day; is that what you're telling me?

MS. MELTZER: Yes.

ALJ WISSLER: All right. Go ahead.

MS. MELTZER: First, mostly because I don't like suspense and I ended up in suspense

after yesterday's demonstration of the drainage feature that we had said was on the USGS map was not on the USGS map; I want to clarify in the City's GIS, we have a layer that includes both the USGS soils maps and also the county soil maps. In fact, the source of that -- the designation of that drainage feature is the Ulster County Soil Map that was designated previously as New York City Exhibit No. 24, and the drainage feature is indicated very clearly on that. I'm happy



to identify it for you. Right here. (Indicating)

I apologize for any confusion in our prior testimony about that.

As I mentioned when the City began its presentation about stormwater, the reason that we're here is that we believe that the Applicant's environmental review of potential impacts associated with stormwater for this project is inadequate and that the SPEDES permit should not be issued unless and until the Applicant correctly identifies and appropriately addresses stormwater impacts both during and after construction.

As we've heard today, it sounds like there will be some adjustments in the SPEDES permits that are not fully explored yet, and we think we've made some real progress in these proceedings and hope it can continue in a cooperative manner. But fundamentally, we

believe, through the presentations this week from DEP, CPC, the Applicant and DEC, really suggest that the Applicant has not at this point correctly assessed stormwater volumes and velocities, and there isn't a basis at





this point for reaching some of the conclusions reached in the DEIS.

Fundamentally again, we're still talking about whether there is a scheme for safely moving water down this mountain, particularly on the Big Indian side. The Applicant still has not demonstrated, although the Applicant has now asserted, that it has reasonable plans for managing stormwater from the construction site, particularly of the road up Big Indian.

Again, we understand that the Applicant is going to be providing supplemental plans, and we look forward to reviewing them and hope that we will be able to resolve some of these issues. Of course we would like to reserve the right to respond based on the submissions that will be made subsequent to this day.

A lot has been made of phosphorus here. The Applicant and the Coalition of Watershed Towns and other clients represented by Mr. Young argue that the phosphorus contribution from the proposed development is insignificant regardless of the specifics of

analysis and modeling, that may get themselves worked out as we go forward, in light of what they characterize as an enormous volume of available phosphorus loading in the reservoirs.

The City is not here to say that the phosphorus discharges from the proposed development site in this case are going to make the reservoirs suddenly become eutrophic. We know that. We know, and appreciate that there is available capacity, available loading. This isn't unfiltered water supply serving nine million people. The point we're making is that the phosphorus should be analyzed correctly, should be addressed appropriately through permits and modification to the TMDL's, and that just hasn't happened yet.

The phosphorus from the stormwater, regardless of the details of errors and calculation, or whatever may have happened, is significant here. There's more phosphorus coming from stormwater off this site than there is from the wastewater treatment plant, I think, under any of these analyses. To

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argue that that's insignificant and it shouldn't be a topic for discussion just doesn't make sense to me. Surely a new wastewater treatment plant would be considered a significant contributor of phosphorus. It

may not be significant in terms of tipping these reservoirs over the balance and making them no longer safe sources of unfiltered drinking water, but these are significant contributions that need to be properly analyzed. That's our concern.

We would never argue that there was no need for a phosphorus limit in a new wastewater treatment plant in the watershed. What we're saying here is there needs to be a phosphorus limit for stormwater, and it needs to be one that is based on careful analysis and that reflects appropriate mitigation measures. That's really the concern here about, especially the Big Indian SPEDES permit, there is no mass-based phosphorus limit as the SPEDES permit is currently drafted. And we think there should be one. And we believe, again, that the Applicant has not provided adequate phosphorus controls for

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the phosphorus coming from stormwater from this project.

I also want to focus very specifically -- the fact, again, that the Pepacton and Ashokan Reservoirs are not phosphorus limited. That's a precious resource. It's analogous to the fact that the Catskill Park provides enormous stretches of public access to hiking trails with views of mountains and forests. It's a resource that's

important for its magnitude, and chipping away at that is something that needs to be analyzed. It's not something that you should simply do until all of a sudden you wake up and it's not there anymore.

We don't consider this excess capacity. We view it as a buffer that we are incredibly lucky to have, protecting one of the most important environmental resources of the state or the nation or the world. It's the largest, safe, unfiltered drinking water supply in the world.

I have to digress for a moment. The Coalition of Watershed Towns so consistently characterizes the City's interest of



filtration avoidance as avoiding the cost of filtration, and of course we want to avoid the cost of filtration. The health benefits, the environmental benefits, the fundamental quality of life for half of the population of this state that derives from this incredible resource goes so far beyond the cost of filtration. Filtration doesn't solve -- it wouldn't solve the problem if this were not a safe, unfiltered water supply. The resource is so much more important than the mere cost of filtration, and it's something that we take protection of extremely seriously, and we view the partnership we have with the watershed communities in protecting this resource as fundamental to the well-being, certainly of

the City, but truly of the State of New York.

Again, we're not saying we're opposed to all uses that contributes phosphorus to these basins, but the MOA reflects our real commitment to finding a balance between environmental protection and economic vitality in this region. What we're saying here in this proceeding -- and this again, this is not a proceeding about a new residential

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development or a new supermarket or a new strip mall. This is a proceeding about a development on 2000 acres of mountaintop forest. We're saying that the impacts of such uses have to be carefully analyzed and mitigated. That's really what SEQRA is about here.

The offers of proof over the past few days have made it clear that the phosphorus discharges and the stormwater from the site have not been properly analyzed without a reasonably accurate analysis as a foundation. There's just no basis for reaching a conclusion about what the impacts of the proposed project and the proposed mitigation would be.

Similarly, we spoke this morning about land uses in these basins, and the high proportion of undeveloped forest, particularly deciduous forest in this area -- again, as if -- because this project involves only a

small fraction of that resource, it really isn't that big a deal.

As my colleague, Charlie Olson, pointed out -- just to use an analogy that
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we've all been focused on this week -- it's kind of like deciding that you're the design point. And if you're developing a Stormwater Pollution Prevention Plan, you should be at the reservoir rather than near the project site. You're looking at the impact of a project. You're not looking at the impacts on the reservoir scale. It just doesn't make sense, and it's not what SEQRA or the stormwater regulations require.

With respect to the accuracy of the analysis, I want to focus just for a moment -- I promise -- on the Applicant's Exhibit 47 as was explained at some length yesterday. The Applicant concluded by comparing the phosphorus loadings from WinSLAMM and other types of modeling that their initial calculations were in the ballpark, despite some of the challenges that have been presented by some of the other witnesses. The numbers, and I apologize, I will provide a supplement in writing because our expert Tim Negly was unable to stay today. He went back through the numbers and, again, doing essentially calibration, looking at the direct
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calculation method that was used by the

Applicant -- I believe this is on page 7 in that exhibit -- which they, using Giggle Hollow data, came up with over 115 kilograms per year. When we used the same data, calibrating it for what we actually find as runoff coefficient, we're running at actually a level 10 kilograms per year. That is an order of magnitude difference, and again, I apologize, I will provide that calculation as a supplement.

Regardless of what data may or may not have been available to the Applicant when the Applicant began preparing the DEIS, there's now plenty of data from the site that's available now. We hope that we will be able to work together with the Applicant to make good use of this and to develop appropriate modeling, whether it is WinSLAMM or direct calculation or whatever it is, that will be able to accurately represent pre-construction conditions and project post-construction conditions. But as of now, what we have is not a solid analysis.

The error with respect to phosphorus
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is probably compounded with errors in the GLEAMS modeling that Dr. Knisel referred to yesterday. The transport of fertilizers is a contributing source, maybe a contributing source of additional phosphorus that we haven't looked at at this point, and I don't

believe anybody has, so I think we really need to start again and really try to understand what the phosphorus loadings from this project will be.

With respect to that data, while I don't want to go into a sort of point by point back and forth who said what, about the history of communication here, I do want to mention again the letter that Ms. Bakner referred to yesterday. It's a letter dated September 22nd, 2000.

I know, your Honor, you asked that that be made part of the record. I assume the Applicant is planning on putting it in. I have a copy of it here. We can put it in as our exhibit.

ALJ WISSLER: City 27.

(LETTER FROM THE CITY OF NEW YORK DEP DATED 9/22/00 RECEIVED AND MARKED AS CITY (STORMWATER ISSUE)



EXHIBIT NO. 27, THIS DATE.)

MS. MELTZER: This is a letter dated September 22, 2000 from Jeff Graf at DEP to Arthur Rashap at Crossroad Ventures, and in the fourth paragraph, we explained that this new sampling program we just developed a quality assurance project plan for was not designed to provide information for the DEIS, the timing was wrong. The DEIS was beginning to be drafted at that point, and we were just starting our sampling program. As we mention there, it said: "Crossroad Ventures should be

implementing its own monitoring program to feed into the DEIS."

That's not an unreasonable request given the size of this project. That said, here we are four years later and we're happy to share our data, we'll be happy to share our data. We've been doing it approximately annually during the course of the drafting and revision of the DEIS. I think for the Applicant to claim that they didn't have our data is just not supported. But, here we are now, and again, we've shared it, we'll continue to share it, and we'll work with the

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Applicant in using it to develop more accurate projections than currently exist about the impacts of this project on pollutant levels.

And with respect to the selection of the model itself, again, I believe this is a letter that the Applicant is going to put into the record, and I don't have copies of this letter, although I'm certainly happy to provide them, the selection of WinSLAMM as the model for post-construction and pre-construction pollutant loadings from this site is based, as I understand it and I believe Ms. Bakner referred to yesterday, on a letter dated July 12th, 2000 from Jeff Graf to Alec Ciesluk.

He recommended, and I'm quoting, "A more detailed pollutant loading analysis

should be conducted for this project such as the source loading and management model or SLAMM." This was not a directive. Had the Applicant felt that this was not an appropriate model, I would have hoped that the Applicant could have said so and discussed it with DEC primarily.

ALJ WISSLER: Are you going to give me

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that letter?

MS. BAKNER: I will, your Honor.

MS. MELTZER: The question of whether that is, in fact, an appropriate model for this project has come up a number of times during this proceeding. I want to make sure we're not -- that the record is clear that Dr. Pitt testified or stated not that the model was intrinsically inappropriate for this application but that default values for pollutant loadings were intrinsically inappropriate for this application.

Finally, before allowing Mr. Olson to speak to a couple of the technical issues that relate -- again, I just want to clarify that the letter dated March 23rd, 2004 from Walter Mugdan of EPA to Alec Ciesluk which was characterized yesterday primarily as an endorsement of the extension of the -- of the area allowed for disturbance during construction is actually a letter that expresses very significant concerns about this project and about its potential impacts on

water quality.

ALJ WISSLER: In particular, are you

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talking about Applicant's 49?

MS. MELTZER: Applicant's 49. Because as you know, Mr. Damrath is ill, I'd like to reserve the right for him to submit a response in writing based on testimony he didn't hear today, and I would like to give Mr. Olson just a moment.

MR. OLSON: I said the other day that I don't use the model very much. I do use models. I don't want to sound like a complete dinosaur, but as Drs. Pitt and Knisel both emphasized, the importance of site-specific data to calibrate those models is really critical -- calibration and verification to their use. The models are really a money-saving convention, especially in the environmental review process. Data gathering is expensive, and it's much cheaper to set up a model and run the model to do the analysis than it is to actually go out there and gather data, especially on a multi-year period.

On the other hand, a model should never -- I would never think that common sense would allow a model to supplement or supplant direct observation. If HydroCAD told you that

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there was no channelized flow below a level spreader and you went out there post project

and saw an eroded channel below the level spreader, you wouldn't turn around and say: Well, HydroCAD said that doesn't exist, so it doesn't exist.

Now the Applicant's have gone back and done analysis using our data and revised their estimates, I was very happy to see that, and we're very happy to continue to work with the Applicants to revise the pre-development conditions. We have a great deal of data now, including discharge data for storm events and base flow events, and we'd be happy to work with them to revise things like event mean concentration estimates that would feed into WinSLAMM, or any of the other models that they were working with.

The last thing I would like to refer to is these bar charts --

MS. MELTZER: This is Applicant's 47.

MR. OLSON: Right, 47, on pages 32 and 34. In the far left, the paired bar charts represent pre- and post-development in phosphorus loadings. So the difference



between these two charts, these paired charts, is really the accepted level of impact. This is what they say that the loading is going to be post-development. In a way, this is really a surrogate for a suite of parameters that impact water quality. Think of nitrates, think of ammonia, think of total and dissolved suspended solids, think of everything on the

SPEDES permit, think of polycyclic aromatic hydrocarbons which are not on a SPEDES permit but are commonly found in runoff from pavement.

So that difference, pre- and post-, which was -- actually when they went back and did the analysis using real data was much greater than they initially described -- reflects the difference for a whole suite of things that impact water quality. It isn't really just about total phosphorus if you're trying to really protect the receiving water bodies. And it's really the broader impacts that I think we need to think about for the context of a whole environmental review. That's all I have to say.

MS. MELTZER: Thank you.

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ALJ WISSLER: Anything else before we break for lunch?

MS. MELTZER: No.

ALJ WISSLER: We will break until --

MR. YOUNG: I made reference to the TMDL's for the Pepacton and the Ashokan. I would like to enter those as exhibits.

ALJ WISSLER: Watershed Communities Exhibits 4 and 5.

("PROPOSED PHASE II PHOSPHORUS TMDL CALCULATIONS FOR ASHOKAN RESERVOIR MARCH 1999 RECEIVED AND MARKED AS WATERSHED COMMUNITIES EXHIBIT NO. 4, THIS DATE.)

(PROPOSED PHASE II PHOSPHORUS TMDL CALCULATIONS FOR PEPACTON RESERVOIR MARCH 1999 RECEIVED AND MARKED AS WATERSHED COMMUNITIES EXHIBIT NO. 5, THIS DATE.)

ALJ WISSLER: We'll break until 2 o'clock. Lunch until 2 o'clock.

(1:22 - 2:09 P.M. - LUNCHEON RECESS TAKEN.)

MR. GERSTMAN: This will be 59 and 60.

(RESUME OF JOSEPH A. HABIB RECEIVED AND MARKED AS CPC EXHIBIT NO. 59, THIS DATE.)

("TABLE 1A SPRING AND STREAM FLOW (STORMWATER ISSUE)



MEASUREMENTS (GPM) RECEIVED AND MARKED AS CPC EXHIBIT NO. 60, THIS DATE.)

MR. GERSTMAN: This will be 61.

(8 1/2 BY 11 PHOTO "R" WELL PUMPING TEST AREA RECEIVED AND MARKED AS CPC EXHIBIT NO. 61, THIS DATE.)

MR. GERSTMAN: 62 and 63.

(8 1/2 BY 11 PHOTO "PINE HILL WATER SUPPLY AREA" RECEIVED AND MARKED AS CPC EXHIBIT NO. 62, THIS DATE.)

(8 1/2 BY 11 "FLEISCHMANNS WATER SUPPLY AREA" RECEIVED AND MARKED AS CPC EXHIBIT NO. 63, THIS DATE.)

ALJ WISSLER: Mr. Gerstman.

MR. GERSTMAN: Thank you, your Honor. We've introduced several exhibits that I want to identify for the record, Judge.

CPC Exhibit 59 is the resume of Joseph Habib.

CPC 60 are compilations of several pages, charts and figures, the first page of which is titled, "Table 1A 2000, 2001 Monthly Spring and Stream Flow Measurements."

The next three exhibits are GIS maps. CPC 61 is entitled, "R Well Pumping Test



Area."

CPC 62 is entitled, "Pine Hill Water Supply Area," and CPC 63 is "Fleischmanns Water Supply Area."

Judge, we have a panel of three witnesses today. I would like to introduce you to our witnesses. This is Paul Rubin whose resume is already part of the hearing record. He has also made a submission that's part of the hearing record.

Sitting next to him is Mr. Joseph Habib, whose resume you just received, and he will be talking about the flow analysis that was performed and reported in the DEIS.

And sitting immediately to my left is Richard Schaedle, who is a -- has some personal and professional experience in connection with the Pine Hill Water Company, and he is here today to provide background in connection with the Pine Hill Water Company, its history, and I'll -- without any further introduction, I'd like Mr. Schaedle to talk about his connection with the Pine Hill Water Company and some of the history associated

with that Pine Hill water supply.
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MR. SCHAEDLE: I've been a resident of Pine Hill since I was baptized in the Presbyterian Church in 1937 -- I should say full-time since the mid '90's. My extended family has been involved with the Pine Hill Water Company since its founding in 1895. My father and uncle and aunt went to Pine Hill in the early 1900's, and my uncle married a girl from Pine Hill, and that's how we ended up with the water company. Her father founded it.

My father took over sole ownership and operation of the company in 1950, and it continued in the family until 1991, except for a brief period when we sold it in 1984, and then had to reclaim it on a mortgage foreclosure.

My prime concern with the project is that it is taking all the water, both potable and irrigation, for the eastern portions of the project from sources within the Pine Hill water district. As the following shows, Pine Hill has had trouble finding enough water, at least during the time that I can remember, which is approximately 1952 to the current
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date.

During my time in Pine Hill, I have seen the hamlet's fortunes ebb and flow, but maintaining an adequate water supply has been

an underlying constant.

In 1930, the New York State Health Department report states that Pine Hill's summertime population is estimated at 4,000. If you have been through Pine Hill recently, you will find it hard to believe, but there were many old wood frame hotels and many more houses. And the winter population was between 350 and 400. In the same report, the sources for the water supply are listed as Spring No. 1, which is now known as Bonnie View Springs; Spring No. 2, which is now known as Depot Spring; and in addition, two springs that feed mountain streams, which one is Cathedral Glen, and the other one is -- for lack of a better name -- Railroad Brook. I'm not sure it has a name; but in various of the EIS reports, it's been referred to as that.

Pine Hill, as I said, has seen its good and bad times. In its prime, it was a haven for New York City's vacationers. It was



relatively close, and it was accessed by train and bus. After World War II and the development of commercial air travel, more exotic places became easily accessible. The decline began in the 1960's and continued into the 1990's; however, to date, Pine Hill is experiencing new vitality. An old 30-room hotel is being restored, a new 90- to 100-room hotel is being proposed and a 17-home luxury

development is being considered; all within the Pine Hill water district.

In 1932, a health department report was described as being -- an emergency supply of water is described as being secured from the so-called Crystal Spring. This was pumped from an underground storage reservoir at 60 gallons per minute by a portable pump into the system.

To the best of my knowledge, the Crystal Spring was used in this manner until 1950 when a permanent pump house was constructed in order to pump water from Crystal Spring and Depot Spring into the system automatically. This was done when the level of Bonnie View Reservoir, which was the





control pressure source, fell 36 inches below the overflow.

In the 1950's, I also remember a dry period when New York City seeded the clouds and were trying to create rain -- we're not sure whether they were so successful, but we do know we had floods afterwards and many of the bridges were washed out, plus water mains, and there was a suit filed against New York City which was subsequently dismissed -- somewhere in the 1970's. I think the suit went on for something like 20 years before it was resolved.

In the 1960's, another severe drought was experienced, and at that time we first

activated an old well near Bonnie View Reservoir, and then we drilled a new well which -- near the Depot Road Spring, and that's known as Station Road Well. From this time in the 1960's until we sold the company in 1991, all these sources were used during periods of dry weather, or when there were leaks or emergencies such as fire. To supplement the Bonnie View Springs, we rely first on Bonnie View Well, then Crystal



Spring, then Depot Road Spring and finally Station Road Well.

When the Department of Environmental Conservation was formed in `69/`70, they required that all water companies file a water supply application, WSA. This was done in 1970. WSA No. 5889 was issued and listed the water sources for Pine Hill as Bonnie View Spring, Depot Spring and Crystal Spring. The WSA permitted a total taking of 300,000 gallons per day, and it remained in force until the company was purchased by Dean Gitter in 2000, and a new WSA was issued in 2003 -- I'm not sure whether it was 2002 or 2003. 2003.

My family sold the Pine Hill Water Company --

ALJ WISSLER: Mr. Schaedle, how many gallons a day was that new permit?

MR. SCHAEDLE: 300,000.

UNIDENTIFIED SPEAKER: No, that's not correct. 211,000.

MR. SCHAEDLE: The original was 300,000.

ALJ WISSLER: But the subsequent

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permit, do you know what --

MR. SCHAEDLE: Was 211,000. I think I come to that later on. My family sold the Pine Hill Water Company and its related -- the Pine Hill Water Company under Mr. Gitter filed an application with the DEC for a modified WSA. The Pine Hill Water Coalition challenged the removal of certain sources from the Pine Hill water system, namely Silo A and Silo B. Silo A replaced Crystal Spring in the early 1990's under the owner that was there. I think on your site tour you may have visited these. I wasn't with you. Silo B replaced Station Road Spring, again, in the early 1990's.

The Pine Hill Water District Coalition questioned flow information provided by Alpha Geoscience --

MR. GERSTMAN: Let me interrupt you for one moment.

Judge, if you refer to CPC Exhibit 62, the GIS map, there are references to Silo A and Silo B, Crystal Spring and Station Road Well, to orient you to Mr. Schaedle's testimony.

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MR. SCHAEDLE: The Pine Hill Water District Coalition questioned flow information provided by Alpha Geoscience and provided affidavits that both Silo A and Silo B have been used as supplemental sources of water since their construction in the early 1990's.

We also provided documents challenging the estimated current and future water needs of the hamlet. Our arguments were denied without a public hearing. The PHWDC then filed an Article 78 suit requesting a hearing. The Court denied the challenge, however, but the Judge stated on page 19 of this ruling, most importantly -- most importantly underlined -- "Any potential environmental impacts of the proposed resort on Pine Hill's water supply will have to be addressed during the resort's SEQRA review." That's why I'm here.

WSA No. 10,181 was issued to the Pine Hill Water Company in 2003. This limits the total taking for Pine Hill to 211,000 gallons per day. The sources are listed as Bonnie View Springs, Pine Hill Well No. 1, Depot Road Well and Station Road Spring, having tested

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capacities -- this was all in the WSA -- of 85, 15, 39 and 28 gallons per minute. Those are per minute, not per day.

The Pine Hill Water District Coalition had previously challenged the flows listed as

inaccurate. The water budget analysis for Big Indian Plateau prepared by Alpha Geoscience dated January 10, 2002, and revised May 2004, states on pages 13 and 14 that Bonnie View Springs in January 2000 had a flow of 67 gallons per minute, not 85 gallons per minute. So the low flow is 67, and that should be used as the base.

It goes on to state on those same pages, "It is Alpha Geoscience's opinion that Silo B and Station Road Spring tap the same ground source." That is, the tested capacity of groundwater source flowing from either Silo B or Station Road Spring is 28 gallons per minute, but not 28 gallons each as indicated on the modified permit.

These two changes in flow requested by the Water Coalition in its comments on the original request to modify the permit over three years ago -- that's when we started



challenging this was in 2000 -- reduce Pine Hill's total available flow of water by over 66,000 gallons per day.

Further, and again as noted on our original comments, two of the backup sources indicated on the modified permit, Pine Hill Well No. 1 and Station Road Well are hydrologically connected. That's in Alpha Geoscience's reports, and it proven by their pump tests. They also state that Station Road Well would pump dry after 139 days. The point

of this is that ten State standards require that a water company have a secondary source equal to or exceeding the primary source with the primary source out of service.

What all this is saying is we really only have a primary source, Bonnie View Springs, and a backup well, Pine Hill Well 1, which is 15 gallons per minute. That's what they left us.

Subsequently we did get Silo B after negotiating with Mr. Gitter for a long period of time. So we did get another 28 gallons per minute, but that's not in addition to the Station Road Spring. It's only one 28 gallons



per minute.

The final point I would like to make, on Martin Luther King Day in 2000, I met with Dean Pallen, Alan Dumas and Marge Lloyd to discuss Pine Hill water. During a wide-ranging discussion, Mr. Pallen noted that the Pine Hill Sewer Plant was built to its current size because he required that the plant be able to meet the needs of a population equal to the size of the original plant in 1930 or thereabouts. As noted earlier, this was estimated to be 4,000 people during the summer. If Mr. Pallen insists on providing sewerage treatment for growth, isn't it logical that Pine Hill also have water resources to supply this sewage growth?

The average per capita use in the USA, as stated in the Rhode Island Water Supply Management Plan, is 75 gallons per day. That's an item I found on the Internet in searching for water use -- I can't refer to it any closer than that. With a population of 4,000, there is a need, using 75 gallons per day, for 300,000 gallons of water per day. So we're back to the original 300,000 that Pine



Hill had under the 1970 permit.

Recently Belleayre Ski Area has drilled several new wells to supply potable water for the increased skier activity and summer use. These wells are located above Bonnie View Springs and could affect their source. The wells are only being brought on line this summer. With these new wells taking water from one end of the system above the system, as you're aware Belleayre Ski Center is above the Pine Hill district, and with Rosenthal wells at the other end of the system taking water from the system, it seems to me that Pine Hill's already limited water supply, as shown by my previous statements, are getting squeezed.

The 72-hour pump test performed on Rosenthal Wells showed that adjacent wells were drawn down, adjacent residential wells were drawn down. As far as I know, there were no pump tests on Belleayre wells, so I think we're going to try to seek those.

What happens when all of these wells are pumped at the same time? We don't know. As shown above, Pine Hill had trouble finding
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sources and in the past had to even resort to ground sources as noted in the 1930 health department report, and I can say that during the drought in the '60's, we were taking water from anyplace we could find it, and it was -- Cathedral Glen Brook was still flowing, Railroad Brook was not so -- but we were searching for water during that period of time.

Now its limited sources are being taken and being distributed -- if the project goes into completion -- will be distributed all over the mountain. If this project is completed, who is going to adjudicate what area gets the water?

Is Pine Hill going to have to ration water so the fairways and the greens of the golf course remain green?

Is this going to turn into a mini Colorado River Basin? I think we're all familiar with the water fights that go on out west.

For these reasons, the project does have an environmental impact on the water sources for Pine Hill, and issues of water
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sources for the project is a substantive

issue.

ALJ WISSLER: Mr. Schaedle, are you currently a resident of Pine Hill?

MR. SCHAEDLE: Yes, I am.

ALJ WISSLER: Your family owned the Pine Hill Water Company?

MR. SCHAEDLE: That's correct.

ALJ WISSLER: Were you an officer in the company?

MR. SCHAEDLE: I was the director -- I don't remember -- somewhere in the '60's, I became the director. I think when my father died in 1979, I was made treasurer. I don't have the corporate records.

ALJ WISSLER: You're familiar with the records and business practices of that water corporation; am I right?

MR. SCHAEDLE: Yes.

ALJ WISSLER: When somebody wants to build in Pine Hill, get a building permit to build anything, do they have to get any kind of letter or authorization from the water company?

MR. SCHAEDLE: When it was a private





water company, no. Because from 1950 until 200 -- well, from its founding in 1895 until 2003, it was a privately-held water company by various people but still a privately-held stock company. They did not need -- anybody that was building in Pine Hill did not need to have --

ALJ WISSLER: What about now?

MR. SCHAEDLE: Right now there are no water regulations in effect. The new district that was formed in 2003 have not actually formulated any water regulations.

ALJ WISSLER: I guess my question is if somebody wants to build and they know they're going to be using potable water from that system, how do they have to let you know? Do they have to let you know? Is there any record kept of that?

MR. SCHAEDLE: Right now, no. There's no water regulations. They can still drill a well. They don't have to hook up to the system if they don't want to. I'm not saying that this shouldn't be the case, but it's the case right now.

ALJ WISSLER: Annually a report gets

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filed with the Department of Health; am I right?

MR. SCHAEDLE: It was filed with the Department of Health and the PSC when it was privately held.

ALJ WISSLER: And now, what?

MR. SCHAEDLE: I'm not real sure -- well, the Department of Health has control over it, but the PSC does not when it's publicly held.

ALJ WISSLER: Are there annual numbers that are developed from the Pine Hill Water

Company with respect to water usage that would go in reports like that?

MR. SCHAEDLE: They do have a flowmeter from the source out at Bonnie View Springs. The individual houses, except for a few commercial units, are not metered.

ALJ WISSLER: But I mean the amount of water that the system is supplying to the community, is that number kept or monitored anywhere?

MR. SCHAEDLE: It's been monitored since they put in a new treatment plant in roughly 2000. They put a meter on that so





they know how much water is flowing into the system, but that doesn't necessarily mean it's all being used because it's a 100-year-old system, there have been leaks. The owners, whoever they may be, currently the town, are always trying to find the leaks. They're not always successful in finding them immediately.

ALJ WISSLER: But since 2000, there are annual numbers as to the amount of water generated by this water supply?

MR. SCHAEDLE: Correct. That's in one of the reports by Alpha Geoscience.

ALJ WISSLER: Let me ask you this: You indicated that there's a 30-room hotel that you're aware of that's being restored?

MR. SCHAEDLE: Yes.

ALJ WISSLER: And where is that?

MR. SCHAEDLE: It's on Main Street in

Pine Hill. If you drove down Main Street, it's across from the Colonial Inn.

ALJ WISSLER: You also indicated there's a hotel --

MR. SCHAEDLE: Potential hotel of 90 to 100 rooms.

ALJ WISSLER: Potential meaning what; a building permit has been filed for that?

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MR. SCHAEDLE: No, it's just being talked about.

ALJ WISSLER: Is it before some planning board or anything like that?

MR. SCHAEDLE: It's not before the planning board. There was a presentation at a Town Board meeting several months ago, but I don't think any formal presentation has come to the zoning board.

ALJ WISSLER: And there was, I think, a 70-unit --

MR. SCHAEDLE: 17-unit. That has come before the -- presentations to the zoning board, it's been revised several times. It started out as 28 units, it's now down to 17. That unit is currently proposing to use individual wells for the houses, not tie into the system because elevation -- it's above the springs, and it would create problems in getting water to it.

ALJ WISSLER: In your understanding, is there any hydrologic connection between

that proposed housing development and these water sources?
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MR. SCHAEDLE: That's what I think ought to be tested. I don't know.

ALJ WISSLER: If you don't know, that's okay. I'm just asking the question.

MR. SCHAEDLE: What I'm saying is at one end of the system -- the pump tests have shown that two wells are approximately 1500 feet apart hydraulically -- hydrologically connected. At the other end of the system, you have the three Rosenthal wells and the residential wells, which again, the furthest one about 1500 feet apart, which are hydrologically connected.

So we know at either end of the system, there's an aquifer that's connected. No tests were done, except for between Rosenthal Well and Station Road Well, which I don't know the distance. I would guess it's at least a mile and a half to two miles. And they show that they're not connected in a 72-hour pump test. But there are numerous private wells between those two wells which could have been checked -- and I don't know, I'm not a hydrologist. I'm not an expert in design or anything else. I don't know whether
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72 hours is enough time to say that these wells are not connected.

ALJ WISSLER: Do you know, does Pine

Hill, to your knowledge, have any kind of comprehensive plan?

MR. SCHAEDLE: They have been fighting for three years to create one, and they haven't succeeded yet.

MS. BAKNER: Your Honor, the village of Pine Hill is not incorporated, it's a part of the Town of Shandaken. It doesn't have its own separate entity. It doesn't exist.

MR. SCHAEDLE: I'm sorry, in cases like this, I'm referring to Shandaken.

ALJ WISSLER: We may have already covered this when we did --

MR. SCHAEDLE: Pine Hill was incorporated somewhere in the late 18 -- I don't know, about 1900, I would say, and was unincorporated in 1984 and became a hamlet in the Town of Shandaken at that time.

ALJ WISSLER: Thank you, Mr. Schaedle.

Mr. Gerstman.

MR. GERSTMAN: Judge, a couple prologues to our continuing presentation.

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First, Mr. Schaedle has put in an application as the chair of the Pine Hill Water Coalition to Mr. Ciesluk dated April 23rd, 2004 to modify the prior decision made by the agency to allow Silo A to be essentially taken out of the possible service of the Pine Hill water district. The basis of that modification request was, as you heard from Mr. Schaedle,

the discrepancies between the reports that were provided by Alpha Geoscience, which essentially overestimated the amount of water that was available to Pine Hill in order to meet its current and future needs.

There are several other grounds that are set forth. If your Honor would like, we can certainly submit a copy of the proposed modifications, but I don't know that it has particular relevance to this proceeding, other than we have put before the agency, and I don't believe the agency has acted at that point, a request for modification based on this information.

ALJ WISSLER: I'm interested in projected future usage and so forth. Those are relevant matters to me, so if that is



going to be helpful on that point, fine.

MR. GERSTMAN: We will provide a copy. If we can mark it now as CPC Exhibit 64.

ALJ WISSLER: Unless you have other -- another offer with respect to that?

MR. GERSTMAN: There are significant -- the substance of what's behind the modification is certainly going to be presented to you as well, but to be safe, I will offer it as CPC Exhibit 64.

MS. BAKNER: Your Honor, just for the record, at this point because of this very important -- we want to object to the introduction of that information. It's not

relevant or related to this application, your Honor. It's sort of a rehash of the water permit, water supply permit modification that was granted actually on September 12th, 2002 to the Pine Hills Water Company, and that permit has been transferred subsequently to the Town of Shandaken water district, and I do believe --

ALJ WISSLER: These are all records of the Department anyway; right?

MS. BAKNER: It's not that they're

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private records, your Honor. It's that the issue of the water permit modification has already --

ALJ WISSLER: I'm not looking at that, I don't care, and I'm not receiving it for that purpose, but there are under 601 -- I need to look at future demand, present demand and so forth, and to the extent that may be helpful to me, I'll do it. I'll take it for what it's worth.

MS. BAKNER: Just understand, it's future demand as expressed by the Pine Hill's Water Coalition, not the Pine Hill Water District which is actually the official owner, operator and permit holder for the system.

ALJ WISSLER: Okay. That's something we can talk about.

MR. GERSTMAN: Yes, your Honor, and the reason that I certainly don't expect this

forum to adjudicate the issues that are raised in Mr. Schaedle's April 23rd letter, unless of course the Department were to potentially issue a letter to the water company and to the district that it was granting the modification subject to a hearing, at that point I might
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move to consolidate, but let me introduce this as CPC 64. The reason I was hesitant to introduce it, I didn't want to suggest that this receiving ought to encompass this modification.

ALJ WISSLER: It's not going to.

(PINE HILL WATER DISTRICT COALITION LETTER DATED 4/23/04 RECEIVED AND MARKED AS CPC EXHIBIT NO. 64, THIS DATE.)

MS. BAKNER: Could we take a look at it?

MR. GERSTMAN: Sure. (Indicating.)

Judge, we also, as I believe you may be aware, have requested from the Department of Environmental Conservation records in connection with the Belleayre Mountain ski expansion, and also their existing recently drilled wells in connection with the water supply. I am informed by the record access office of the DEC that those records are available. I have to make an appointment to go see them, and would reserve the right to submit that information at some future point.

We also, Judge, will be dealing with surface and groundwater hydrology at some

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future date yet to be determined in this proceeding. Those issues are directly related and connected to what we will be talking about today.

Finally, we will be alluding later in the presentation to precipitation data, and I would refer your Honor to the exhibits to our petition, specifically reference to tabs Exhibit C and D, and we will get into more of a discussion of that at some future point.

The primary concern that we have expressed in our petition is that for stormwater purposes, the Tannersville monitoring and precipitation data was used, and for purposes of the water supply, Slide Mountain was used, and we believe that that inconsistency is fundamentally wrong. It relates to the issues that you have heard up until now, but it also relates to the issues that we will hear today.

If Slide Mountain is used, we believe that provides a significant overestimation of the precipitation data that is being relied upon in the DEIS. Again, we'll talk about that further.



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I would like to now introduce Mr. Joseph Habib.

Mr. Habib, would you tell the Judge a little about your background.

MR. HABIB: Sure. Your Honor, I'm an environmental engineer with about 10 years' experience in water and wastewater treatment and supply. I hold a Master of Science Degree from Long Island University in 1994, Bachelor of Science degree from the City University of New York, 1990.

I've been consulting periodically for the Pine Hill Water District Coalition over the past three years, and reviewing some of the water supply and treatment related issues. I have previously provided written comment to DEC regarding public water supply permit modification 3-5150-00365/0001, which is intrinsically related to this DEIS.

MR. GERSTMAN: Can I interrupt you for one second, Mr. Habib. We had received, and I don't know if this has been made part of the record yet, maybe Dan or Terresa can clarify. We've received from you supplemental conceptual design reports for both Big Indian



and Wildacres dated May 2004. Are they going to be made part of the record?

MS. BAKNER: They will be, they will be Applicant's exhibits. Everybody has a copy. It went to all counsel with the exception of Mr. Young who has not indicated a desire to receive them. So if we could mark that as Applicant's exhibits. I don't know if your Honor has it with you.

ALJ WISSLER: These will be

Applicant's --

MS. BAKNER: If you could do 51A, B, C and D.

("APPLICATION FOR PUBLIC WATER SUPPLY PERMIT - BIG INDIAN PLATEAU" RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 51A, THIS DATE.)

("CONCEPTUAL DESIGN REPORT - BIG INDIAN PLATEAU WATER SUPPLY, TREATMENT AND DISTRIBUTION" RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 51B, THIS DATE.)

ALJ WISSLER: This is 51C and D.

("APPLICATION FOR PUBLIC WATER SUPPLY PERMIT - WILDACRES RESORT" RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 51C, THIS DATE.)



("CONCEPTUAL DESIGN REPORT - THE WILDACRES RESORT AND HIGHMOUNT GOLF CLUB/HIGHMOUNT ESTATES WATER SUPPLY TREATMENT AND DISTRIBUTION RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 51D, THIS DATE.)

ALJ WISSLER: Okay, Mr. Gerstman.

MR. GERSTMAN: Sorry for the interruption.

Mr. Habib, would you continue.

MR. HABIB: Sure. As I was saying, among the work I've been doing for Pine Hill Water District Coalition -- previously commented at the January 20th Boiceville Public Hearing, and recently submitted detailed analysis to DEC in April 2004 as part

of the public comment on the DEIS for the Belleayre Resort at Catskill Park.

Currently, I'm employed by a Fortune 1000 company. I'm a project manager, and I manage a team of engineers in the design and manufacturing of full-scale water treatment plants. And I've been specifically involved with municipal water treatment for the last seven years.

MR. GERSTMAN: Thank you, Mr. Habib.

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Mr. Habib, you did a flow study analysis in connection with -- you reviewed the flow study analysis that was prepared by Alpha Geoscience?

MR. HABIB: I did, yes.

MR. GERSTMAN: Can you describe what a flow study is.

MR. HABIB: A flow study is a generic term, but basically what it involves is the monitoring of flows from a specific stream, river or other water source for a specific period of time to determine flow characteristics and flow rates, flow quantity.

MR. GERSTMAN: What would its purpose be in connection with the Draft Environmental Impact Statement, for instance, that we have before the Judge today?

MR. HABIB: Basically to determine sustainable yield of particular sources that are being proposed for some of the water supply issues or some of the water supply

sources.

MR. GERSTMAN: Why would that flow study be important in that analysis?

MR. HABIB: The flow study really is a

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critical portion. It forms the basis by which all of the subsequent engineering analysis is really based upon. And really somebody mentioned earlier that -- engineering work is based on data, and that flow study analysis provides a lot of the data that a lot of the engineering work is built upon.

MR. GERSTMAN: Did you review the flow study that was presented in the Applicant's Draft Environmental Impact Statement?

MR. HABIB: Yes, I did.

MR. GERSTMAN: Did you have an opportunity to review the flow studies represented in Crossroads Exhibits 51B and 51D that was submitted -- revised May 2004?

MR. HABIB: Yes, I have.

MR. GERSTMAN: In your professional opinion, do those flow studies provide necessary and critical information upon which to evaluate the sustainable yield of the aquifer and the surface water for the project?

MR. HABIB: They do provide necessary and critical information; however, I feel that they are severely flawed.

MR. GERSTMAN: How do you feel that

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the information that's presented is flawed?

MR. HABIB: As I will present, there are stark contradictions and multiple versions of what is presumably the same study that's been used over the past four years; and as a result, I really do not feel comfortable with the flow study at all.

MR. GERSTMAN: Can you explain how you have come to that conclusion.

MR. HABIB: Yes. Well, I guess I can start from the beginning, but my testimony really focuses on this -- the spring and stream flow measurement study, also known as a flow study which I'll refer to it for convenience, this was performed by Alpha Geoscience between January 2000 and December 2001.

ALJ WISSLER: Mr. Gerstman, is this in one of the exhibits; we could be looking at this?

MR. GERSTMAN: The flow study?

MR. HABIB: Yes.

ALJ WISSLER: You want to direct me to where it is?

MR. HABIB: Actually, it is the first





two pages of the exhibit.

MR. GERSTMAN: CPC 60, your Honor. Were these charts that you took from the Draft Environmental Impact Statement?

MR. HABIB: These are taken directly from the DEIS. The flow study document, which

you are now looking at, is referenced extensively throughout both the Silo A water supply modification application, as well as the Belleayre Resort DEIS, and used in numerous sections of the DEIS as a cornerstone to subsequent engineering analysis.

As I was alluding to before, since the flow study forms the foundation on which so much is based, its significance really can't be understated. The flow study, however, as I also mentioned, contains many blatant discrepancies and otherwise questionable data, that I find it to essentially render itself invalid. It's, therefore, my intention today -- I would like to highlight these significant and numerous discrepancies using the Applicant's own data contained within the DEIS. I would also like to question the methodology cited in assessing some of the

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spring yields contained in that report. I'd like to also demonstrate the extensiveness and far-reaching implications of a flow study as the crux and foundation of much of the subsequent engineering analysis related to the water supply issues.

I would also like to emphasize the deficiency in four years' worth of engineering reports which indiscriminately use two vastly different versions of what is presumed to be the same flow study, without discovering,

correcting or offering any explanation to the obvious discrepancies which I'm about to present.

MR. RUZOW: Marc, excuse me for just a second. Table 1A which is CPC 60, where from the DEIS was that taken?

MR. HABIB: Table 1A. There are two versions of Table 1A, and they are indicated as Version 1 and Version 2. Version 1 -- actually either version appears in multiple places. I'll give you an example where I pulled Version 1 from.

MR. RUZOW: Is it in the DEIS or an exhibit to the DEIS?

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MR. HABIB: It's in several exhibits.

MR. GERSTMAN: If you refer to --

MR. HABIB: In fact, there's a table that indicates exactly which exhibits and which version is included in the respective exhibits.

MR. GERSTMAN: Refer to Table 2 which is about four pages in.

MR. HABIB: Yes, thank you.

MR. RUZOW: Thank you.

MR. HABIB: As I was saying -- I apologize, I also want to demonstrate why the flow study as a whole should be invalidated, along with any of the subsequent calculations, estimations or conclusions that are based upon its data. I would also like to demonstrate how the flawed data supported the October 2001

decision of the Department of Health Public Service Commission to deny the request of the Pine Hill Water District Coalition for a separate proceeding and evidentiary hearing in Case 01-W-0803.

MS. BAKNER: Your Honor, for the record, we do object to that.

MR. GERSTMAN: Terresa, I couldn't
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hear what you said.

MS. BAKNER: I said I'm objecting because the Public Service Commission decisions are final and not appealable, and if this is a collateral attempt to reopen that --

ALJ WISSLER: It isn't.

MR. HABIB: It's not an attempt, but since the PSC is included in the DEIS, and I'm offering comments on the DEIS, I feel it's appropriate to offer comments on that and how some of the flawed data may have adversely influenced the decision.

As I was saying, my testimony begins back in 2002 after first discovering fundamental discrepancies in data used to support the developer's modification application of the Silo A WSA which proposed the removal of Crystal Spring, or Silo A, from the Pine Hill Water Company's assets.

I uncovered the flawed data in the flow study which was included amongst the WSA supporting documentation. The flow study data

is also referenced extensively throughout the DEIS and used in numerous sections of the DEIS as a cornerstone to subsequent engineering



analysis.

As you have just taken a look at, I've presented two versions of the Alpha Geoscience flow study used by the developer, and as I stated, these copies were taken directly from the DEIS, and designated as Version 1 and Version 2. If I can direct you to those two versions, you'll notice, and I hope it came through on the copies, that I highlighted a number of rows, specifically ten rows. Those would be rows A, B, C, D, H, I, L, P, Q, R, S, T, U, V and W. I've highlighted those selected rows on both versions to demonstrate the significant deviation in values between the two.

As an example, if I could, I'd like to direct you, just for example, if we can take a quick look at Rows A through D and compare some of the values that you see in Version 1 to the values that you see in Version 2.

ALJ WISSLER: How do you explain the difference?

MR. HABIB: That's the whole point, I really can't explain it. Perhaps some folks in this room can; but if I may, I would like



to proceed.

ALJ WISSLER: Sure.

MR. HABIB: A closer analysis of that data reveals that nearly all Version 1 values in these rows are two and a half times higher than those in Version 2. I further analyze the differences in this data by superimposing the two data sets and calculating what I'm calling a discrepancy factor, the results of which are presented in Table 1, which you have there also, your Honor.

Basically what Table 1 is is the values in Version 1 of the flow study, the Version 1 values divided by the Version 2 values, and you will see that nearly every value contained within those ten rows are almost uniformly multiplied by a factor of two and a half. I find the uniformity and selectivity of these discrepancies suspect. What's most troublesome is that either version has been used, whether by oversight or by design, to support the 2002 WSA modification and the DEIS.

The flow study has appeared no less than three times in supporting documents for



the WSA, and no less than five times in the DEIS, and those eight appearances we just spoke about in Table 2. So you can refer to Table 2 to see where those tables would appear.

What I would also like you to note is looking at Table 2, which lists the order of

appearances, it really demonstrates the extent in which the flow study was utilized in both the DEIS and the WSA. And most importantly, I would like you to note the arbitrary use of either version.

Not only did I find conflicting data between Version 1 and Version 2, but there are also significant contradictory values for critical data when compared to other supporting documentation found within the DEIS. I would like to bring to your attention, if you can refer to the flow study, Line E. Line E is designated Pine Hill Water Supply Meter. It's actually one of the lines that is actually consistent between the two. Data from Line E has been used extensively in calculations of water usage and spring flow throughout the WSA and DEIS.

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In looking at Line E data initially, I was very suspicious as it did not represent inherent variation and water usage that is typical with small water systems. In that, I mean that you will notice that there's very little monthly and almost no seasonal variation. This is just not typical of a public water supply that's under continuous use.

Furthermore, the occurrence of zero flow found on January 18th and May 22nd is not possible for a water supply that is under continuous use. What I've done is I've

plotted the data --

ALJ WISSLER: Repeat that.

MR. HABIB: This will make more sense when you look at the plot. But the statement that I just read was: Furthermore, the occurrence of zero flow recorded on January 18th and May 22 is not possible for a water supply system that is under continuous use.

MR. GERSTMAN: Judge, I refer you to Figure 1 in CPC 60. You'll note the previous statement concerning the relatively constant



use is reflected by those --

ALJ WISSLER: You have two zero values.

MR. HABIB: Yes, you have two zero values, and you have what's essentially a straight line over a two-year period. Over a two-year period, we should see peaks, typically during the summer months, and we should see valleys, typically during the winter months. That's fairly typical of most water supplies, that's just normal, cyclic usage. We don't see that here. At the time, it was just speculation. But I was very suspicious of that.

If I can continue. My initial suspicion was later confirmed. After reviewing the Applicant's data that's presented in Volume 3, Appendix 7, Big Indian

Water Supply, B; this section includes in its Appendix B day-to-day water flows taken from a Pine Hill supply meter between December 1st, 2000 and February 28th, 2001.

MR. GERSTMAN: Your Honor, I refer you to CPC 60, that's the following page, water requirements of system, Appendix B on the top



of the page.

ALJ WISSLER: That's specifically taken from what section?

MR. HABIB: That is taken from Volume 3, Appendix 7, Big Indian Water Supply B.

ALJ WISSLER: Appendix 3 of the DEIS?

MR. HABIB: Appendix -- Volume 3, Appendix 7.

MR. GERSTMAN: Maybe during a break we can provide the exact reference for you.

ALJ WISSLER: If you would, please.

MR. HABIB: This data was taken from the -- apparently the daily log sheets of the Pine Hill Water Company. This data appears to be valid in that I find it represents normal variability and it looks likes real data. This data also clearly contradicts the Alpha flow study, as I've shown in Table 3 in that handout.

If we can refer to Table 3, which I have titled, "Alpha Flow Study versus Volume 3 Appendix 7," we can look at some of the common data points between those two documents and

compare them directly; and I refer you to
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January 30th, 2001 and February 28th, 2001 as well.

The Alpha flow study, either Version 1 or 2, shows a flow rate of 113 g.p.m. and 113.5 g.p.m., respectively, for those two dates; whereas, Appendix B shows about 48 g.p.m. That's a significant difference, a very significant difference.

I would also like to draw your attention to Note 5 that's indicated in that Appendix B data. Note 5 indicates that a major leak to the system was repaired on January 23rd, 2001. This is reflected in the Appendix B data by the subsequent drop in daily flow.

If you look at that table, you will see a significant drop in daily flow following January 23rd; whereas, the Alpha flow study does not reflect any such shift in flow, instead it presents consistent flow between 113 and 119 g.p.m., even after the January 2001 repairs.

To further illustrate this, I've plotted the Appendix B data along with the corresponding flow study data in the next
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graph --

ALJ WISSLER: Figure 2.

MR. HABIB: -- to exemplify this

point. Again, I would like to draw your attention to the normal variability in the day-to-day flows from Appendix B; and I'd like you to note the stark contrast with the Alpha flow study data. One of these sources is obviously incorrect.

I would like to raise a methodology question which I just recently uncovered. The recently released Big Indian Water Supply Report cites in its surface water and groundwater assessment -- in Section 2.0, it cites that the spring yields were determined, and I'm paraphrasing and I'm assuming volumetrically what it does indicate is that it uses either a five-gallon bucket or 18-gallon tub. This is just not practical for springs at significantly higher flows.

For example, I refer you back to the flow study. Version 2, which is the low flow version, looking at the April 25th, 2001 data point for Railroad Springs which indicates a spring flow rate of 525 gallons per minute.

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ALJ WISSLER: Wait a minute, Version 2?

MR. HABIB: Version 2.

ALJ WISSLER: What day?

MR. HABIB: April 25th, 2001, Railroad Springs.

ALJ WISSLER: I don't have that. I have April 20 -- I'm sorry, 2001, got it.

MR. HABIB: Railroad Springs --

ALJ WISSLER: 525.

MR. HABIB: 525. Assuming they used an 18-gallon tub and a volumetric method of recording the flow, it would essentially fill up in 2.05 seconds. It's just not practical. If we look at Version 1, which is the high flow, we're looking at 1295 gallons per minute. And similarly, it would fill up in about 0.8 seconds.

So I would like some clarification on the methodology used, particularly for the stream flow, and if a 5-gallon bucket and an 18-gallon tub were used, I think that's probably not the best method to measure flows in this range.

At this point I trust the information

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that I've been presenting clearly discloses the flow study as unreliable. I've demonstrated this with the developer's own contradictory data, and I would like to follow this up with direct implications resulting from the use of this flawed data in the context of the Silo A WSA and the DEIS.

The new water supply permit that was granted on September 12th, 2002, based on the April 2001 WSA application, the flow study -- the Alpha flow study used was really a primary support for this application. The crux of the application is a critical -- the Bonnie View Spring production, the calculations used in

Section 3-2 to determine the average monthly flow of the Bonnie View Spring are based on Version 1 which is -- or which contains the so-called inflated values. That cites a 393,120 gallon per day production estimation which, based on the Version 1 data, is likely a gross overestimate as opposed to a conservative flow as is cited in the application. Also, this estimation was derived using September 2000 data which was reputably the low flow month.

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By use of the formula provided in the engineer's report -- this is the engineer's formula -- for calculating the average monthly flow, we can re-create that calculation by punching in numbers. I have included some of those calculations, pretty simple calculations, in one of the last pages in that handout. The engineer's equation for calculating average monthly flow is 0.7 times the Bonnie View flow. That is equal to 0.7 times (data from Row H, minus C, plus D, plus F, plus E.)

If we use the Version 1 data, the inflated data, and we punch in the numbers, the result is 273 g.p.m. or 393,120 gallons per day, the values cited in the application. However, the developer contradicts this critical calculation with his own supporting documentation contained within the WSA.

The engineer's report, which supports

the WSA in Section 2.1.1 cites August 2001 as the low flow month, and this time arbitrarily uses Version 2 data to calculate the average monthly flow. By using Version 2 data and the August 2001 values, punching in those numbers

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yields 70 g.p.m. or 100,800 gallons a day; however, the engineer's report mis-cites this calculated value as 87 g.p.m. If they were, in fact, using those numbers that they said that they were using, they should have come up with 70 g.p.m., not 87 g.p.m. as is cited. Again, that results directly from their formula.

Incidentally, they do not show their calculation, so it can only be assumed that a basic arithmetic error was made in addition to using the wrong data to support the claim.

This is not the only arithmetic error that I discovered in this section of the engineer's report. The engineer's report then cites average flow over the two-year period as 134 gallons per minute; but by punching in the numbers supplied in Table 1B, average flows, spring and stream flow measurements, that's contained within the WSA, I calculated a different value. I calculated a value of 223 gallons per minute, not 134 gallons per minute as is contained in the supporting documentation.

ALJ WISSLER: Let me stop you for a

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minute. The first calculation that you did which is the next to last page of CPC 60, I take it you were looking at September 28th, 2000; is that the data column?

MR. HABIB: The first calculation data which results in 273 g.p.m.?

ALJ WISSLER: Is September 28th?

MR. HABIB: Yes, September 2000. Is it the 28th -- yes, September 28th 2000.

ALJ WISSLER: And then in the second --

MR. HABIB: I have to apologize. In the second calculation, I'm using August 2001 which unfortunately, as I just noticed, is not included in your version of the flow study. Apparently it got cut off in the copier.

ALJ WISSLER: Do you want to give me the full copy?

MR. GERSTMAN: If you insist.

ALJ WISSLER: I insist.

MR. HABIB: I've highlighted that in red. (Indicating)

MR. GERSTMAN: We'll make this CPC 60A.

ALJ WISSLER: For sake of clarity of





the record.

("TABLE 1A 2000-2001 MONTHLY SPRING AND STREAM FLOW MEASUREMENTS GALLONS PER MINUTES" RECEIVED AND MARKED AS CPC EXHIBIT NO. 60A, THIS DATE.)

ALJ WISSLER: Mr. Habib, so I'm clear, your initial calculation is you take Crystal Spring Brook above Cathedral Glen Brook and from that value you subtract Crystal Spring Brook above Bonnie View Spring; H minus C in your chart?

MR. HABIB: Yes, it's 0.7 times, H minus C --

ALJ WISSLER: No, I understand how the formula works. I'm saying, the value, H minus C that you start out with, what's the reason for doing that again?

MR. HABIB: This is the methodology in which the engineer determined the critical Bonnie View flow. This is their calculation -- I'm sorry, this is their formula. So exactly how that came into being, I'm not sure. It is explained in the WSA, but I didn't want to go into that kind of detail, so I just pulled the formula.

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ALJ WISSLER: Is that the water that's available to the project; that differential is what's available to them?

MR. HABIB: No, this Bonnie View flow data -- the Bonnie View flow data is the water that's available to the Pine Hill Water Company, specifically based on -- from the Bonnie View Springs. That value is primarily what the WSA that relinquished Silo A from the Pine Hill Water Company's assets was based

upon. In my opinion, I felt it was based upon an overstated flow.

MR. GERSTMAN: Could I have one moment?

(BRIEF PAUSE.)

MR. HABIB: Do you need further clarification?

ALJ WISSLER: I understand. You're applying a formula that they applied in the first instance. Why necessarily values -- the H minus C for instance, is a factor here, is something that they proposed?

MR. HABIB: Yes.

ALJ WISSLER: Not something that you're proposing or even necessarily vouching for?



MR. HABIB: Right.

ALJ WISSLER: You're just reworking the numbers in light of the versions with the formula that they proposed?

MR. HABIB: Correct. In the context of the WSA and DEIS, I feel that I've now demonstrated flawed data, contradicting data and arithmetic error, and it's in my opinion that a true account of the Bonnie View Spring production during the low flow month could not have possibly been represented accurately in the WSA. Nevertheless, the WSA was granted which relinquished the Silo A water supply source from the Pine Hill Water Company's list of assets, and allowed its use as an alternate

water supply for the developer's Big Indian Plateau project.

As I previously stated, the implications of the flow study are yet further reaching. Included in the list of DEIS sections which directly referenced the flow study is Volume 2, Appendix 2.1, Big Indian water supply. The flow study was used in the determination of Silo A and Silo B production





capacity.

ALJ WISSLER: You need to show me where you're referring to. You're saying DEIS Appendix 2?

MR. HABIB: Volume 2, Appendix 2.1, Big Indian water supply.

MS. BAKNER: Your Honor, if you could look in Volume 3, Appendix 7, you would maybe find it there.

ALJ WISSLER: Okay.

MS. BAKNER: Sorry, your Honor, the reference to Volume 2, Appendix 2.1 -- as we understand it, Mr. Habib is referring to Table 2, "Occurrences of Alpha Geoscience Stream and Flow Study."

MR. HABIB: That's correct. I'm just further indicating briefly how it was used and some of the production -- and assessing some of the production capability within each section, but I'm not really going into detail.

ALJ WISSLER: So your Table 2 will

tell me where you are in the DEIS?

MR. HABIB: That's correct.

MR. GERSTMAN: After Mr. Habib's

statement and offer of proof, we will try and

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find exactly in Appendix 7 where these

references are.

MR. HABIB: In Volume 2, Appendix 2.1,

the flow study was using the determination of

Silo A and B production capacity. Volume 3,

Appendix 7, Big Indian water supply, it was

again using the determination of Silo A, the

upper spring, Silo B Spring and Railroad

Spring production capacities. Volume 3,

Appendix 7, Big Indian water supply B. This

goes back to the PSC decision which was based

largely upon the 273-gallon per minute

production capacity of the Bonnie View Springs

as we just determined, as was determined by

Alpha using the Version 1 overstated data.

However, in this particular section,

the developer again includes Version 2 in

their supporting documentation in the Appendix

for this section, which directly contradicts

the referenced flows for Bonnie View Springs

cited in a service investigation of the Pine

Hill Water Company Case 01-W-0803.

As we now understand, as I think I've

effectively demonstrated, the Version 1 data

contains overstated flows for the Bonnie View

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Springs, and I think the importance here is

that these exaggerated flows help to support the Pine Hill Water Company's position to have the Pine Hill Water District Coalition's petition denied at the time.

Also I would just like to refer to Volume 3, Appendix 7, Big Indian Water Supply G. There are extensive references to the flow study in the surface and groundwater assessment. These include, but are not limited to Silo A spring flow to meet potable requirements, spring use impacts on stream flow, comparisons with climatological data, Crystal Spring Brook comparisons, et cetera.

I'd like to conclude with, based on my review of the water supply sections of the DEIS and the discrepancies found within the flow study, I conclude the following: That the data contained within the flow study is unreliable due to the number of discrepancies between Version 1 and Version 2, which is 50 percent of all of the data. The entire flow study should be deemed invalid, as should subsequent calculations, estimations and conclusions that are based upon it.

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I conclude that the uniformity of the discrepancies, that is the consistent factor of 2.5 across entire selected rows is highly suspect. I'd like to point out that the critical data, such as flows from the Bonnie View Springs and Crystal Spring, are among the

directly flawed data. Other flawed data such as Silo A flows are flawed by inclusion with the rest of the defective data, and neither can be used to support claims in the DEIS.

I conclude that the indiscriminate use of either version of the flow study over a four-year period demonstrates sloppy reporting practices and failure to provide attention to detail. And my conclusion is that new flow studies are required to validate the DEIS claims. That's all I have.

ALJ WISSLER: Thank you, Mr. Habib.

MR. GERSTMAN: Any further questions, Judge?

ALJ WISSLER: No.

MR. GERSTMAN: Judge, due to the unavailability of Mr. Habib beyond today, I would request that we take a rebuttal to his offer of proof at this point, and then move on



to Mr. Rubin's offer of proof after that.

ALJ WISSLER: How long is Mr. Rubin going to be?

MR. GERSTMAN: 45 minutes to an hour. We could go over another day if it's necessary, but Mr. Habib is not available, and Mr. Rubin, we can make available.

ALJ WISSLER: Is Mr. Rubin's offer going to be different?

MR. GERSTMAN: Yes, it -- Mr. Rubin's offer has to do with the -- at least in part the pump tests that were done that were relied

upon by the DEIS and the subsequent revision to the analysis set forth in CPC -- I'm sorry, Crossroads 51 series.

MS. BAKNER: Your Honor, if it's worth anything, we have no objection to doing that.

ALJ WISSLER: Do you want five minutes?

MS. BAKNER: Yes, that would be helpful. Thank you very much.

(3:45 - 4:01 P.M. - BRIEF RECESS TAKEN.)

ALJ WISSLER: Going back on the record.

(STORMWATER ISSUE)



MR. GERSTMAN: Before you start, there's one part of Exhibit CPC 60, we have located it as page 15.

ALJ WISSLER: This is Appendix B?

MR. GERSTMAN: Yes, that is in Appendix 7 -- looks like Appendix B of the Public Service Commission record.

MR. RUZOW: In the court decision I think. In their decision.

MR. GERSTMAN: I think in the Public Service Commission decision.

ALJ WISSLER: Got it. Page 15 of --

MR. GERSTMAN: Yes, it's called, "Service Investigation of the Pine Hill Water Company," it's referred to, and it's Appendix B to that.

Judge, for the other citations, we

would be glad to provide further references, we'll submit them.

ALJ WISSLER: Okay.

MS. BAKNER: I'm introducing for the record Applicant's Exhibit 52, 53, 54 and 56. 52 is the resume of Gary Kerzic, professional engineer; 53 is the resume of Mary Beth Bianconi; 54 is the resume of Dr. Sam Gowan;



and 55 is the resume of Michael Palleschi. With them is Steve Trader, who has previously had his resume put in.

(RESUME OF GARY T. KERZIC RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 52, THIS DATE.)

(RESUME OF MAY BETH BIANCONI RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 53, THIS DATE.)

(RESUME OF SAMUEL W. GOWAN RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 54, THIS DATE.)

(RESUME OF MICHAEL D. PALLESCHI, C.P.G. RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 55, THIS DATE.)

MS. BAKNER: I'd like Dr. Gowan, Steve Trader and Mary Beth to go over their qualifications just briefly for the record so we can just proceed quickly with the response to Mr. Habib's comments.

Dr. Gowan, could you go first.

DR. GOWAN: Yes. I'm president of Alpha Geoscience. I have a Bachelor of Arts

Degree that I received at Colton College in 1976, that was with a major of geology; Master





of Science Degree from Texas A & M University in geology; and I received a Ph.D in 1985 from Texas A & M University, also in geology.

I've been working for Alpha Geoscience and am a principal at Alpha Geoscience. I've been there since 1992. Our primary activities are geology and hydrogeologic consulting. My role has been looking at impacts, surface water, groundwater impacts, water budgets, drawdown impacts from well use, these kinds of things.

I've been involved in this project since the very beginning working with Steve. In fact, I came out and made the first stream flow and spring measurements in January of 2000 when it was about 10 to 15 below zero. After that, Steve took over from there.

MR. TRADER: Steve Trader, I'm a geologist. I have a Bachelor's Degree in geology from Virginia Tech., 1988. I've been with Alpha Geoscience for ten years as a geologist. I did go to graduate school and completed 33 hours of course work before I left to get a job.

I've been involved in much of the same





project materials that Sam has, a lot of water supply issues that involve fracture trace

analysis, water budget analysis, stream and spring flow measurements. Been involved in lots of mining issues, environmental contamination problems associated with underground storage tanks and petroleum contamination. That's about it.

MS. BIANCONI: My name is Mary Beth Bianconi, and I formerly worked for Delaware Engineering when the work on the EIS was done. I have a Bachelor's Degree from the State University of New York at Geneseo, and I completed Master's studies and am six credits short of a Master's Degree in Environmental Planning from SUNY Albany. I have 14 years of experience doing permitting and technical writing for civil engineering, transportation engineering, environmental engineering projects.

MS. BAKNER: We're skipping Gary, not because he's less worthy, but we don't need him for this rebuttal. I want to stress we're just responding to Mr. Habib's comments, which we've seen before -- which we saw previously



in the context of the application that was made on behalf of the Pine Hills Water Company to the Department of Environmental Conservation for a water supply permit modification.

If I can just briefly go through what is admittedly a long and convoluted history, I'll do that. The Pine Hills Water Company

was purchased by Dean Gitter, and it was operated for a period of time under his ownership. The Pine Hill Water Company had an extremely old water supply permit that had been issued by the Department of Environmental Conservation. I don't recall, but it might have even been in a prior existence as a prior organization, but it was one of the earliest water supply permits that was issued.

During the course of Mr. Gitter's ownership of the Pine Hill Water Company, which has been incorporated since -- I'd say the very early 1900's, it was determined that the permit should be updated and should be modified to reflect the assets it actually owned, owned by the Pine Hill Water Company, and the assets that were hooked up and used by



the Pine Hill Water Company.

This permit modification was a necessary part of some funding that was being applied for at the time. I won't even go into which federal and state agencies it was being applied to. Mary Beth can rattle them off with the best of them. But the point of it was to get the funding we needed to get the permit in order.

The Pine Hills Water Company had allowed the water system to reach a state of disrepair. It had many, many problems, also way too large to enumerate in this proceeding.

As part of the funding, the goal was to rebuild the distribution system which, as I understand it, dated from a long, long time ago, like the early 1900's. So there was a lot of piping that was no longer working. There were a lot of leaks. And Mr. Frisenda, who sits at that table, was commonly going out in the dead of winter to repair pipes that should have been retired from service probably 25 to 30 years ago. So the system had some problems.

So as part of this process of applying

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for a permit modification, the Pine Hill Water Company submitted a water supply application permit modification. That was submitted in the year 2001. As a part of the review of the permit application, Mr. Ciesluk, our own permit reviewer in this case, was the permit reviewer in that case. There was an engineering report, everything that was submitted, just as you typically have in water supply permit applications.

During the course of that application, as part of the normal give and take in the permitting process, it was discovered that the table, the infamous Version 1, was indeed in error, and the engineers will explain how it was in error. Also, during the course of the give and take on that project, it was discovered there was a calibration error made in the translation of flowmeter data. And

that was also clarified for the record in that proceeding with letters either between Whiteman, Osterman & Hanna and DEC, or Delaware Engineering and DEC. So all of this is completely a matter of public record, your Honor.

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Then we come to Table 2, Mr. Habib's Table 2, and it indicates that Version 1, which is the incorrect version of the table, was inadvertently included in Volume 2, Appendix 2.1 for the Big Indian Plateau water supply. That is the water supply application that's included in the Draft Environmental Impact Statement that precedes the tan ones that are laying there.

MR. RUZOW: Which is Applicant's Exhibit 51, that series.

ALJ WISSLER: 51A, B, C and D?

MS. BAKNER: Correct. We can only -- and we won't ask anyone to fall on their sword here, but we can only assume that this was a photocopying error. It was not a table that should have been included, it was outdated at the time it was put in there. I just want to point out that if you look at Table 2, it indicates that Version 2, which is the correct version, was included as Exhibit 1 to a February 28, 2002 engineer's report, and that would have, of course, been Delaware Engineering's report. And that date was

February 28, 2002. And the permit, which has not been entered as an exhibit here --

MR. RUZOW: It was referenced by Mr. Habib and Mr. Schaedle.

MS. BAKNER: Right. And your Honor, I'm happy to give my copy up. This permit modification is dated September 12th, 2002; and I imagine everybody here has this in one form or another.

ALJ WISSLER: Not me.

MS. BAKNER: Except you -- now you do.

ALJ WISSLER: Now I do.

MS. BAKNER: So you can see that the incorrect Version 1 was -- as often happens or hopefully always happens as part of the permitting process -- corrected, so now it was corrected Version 2, as Mr. Habib mentioned it. I'm going to stop talking about this, and I'm going to ask --

ALJ WISSLER: You want me to mark this as an exhibit and take it in, 56. Thank you.

(WATER SUPPLY PERMIT WSA #10,181 RECEIVED AND MARKED AS APPLICANT'S EXHIBIT NO. 56, THIS DATE.)

MS. BAKNER: Reiterating -- we would like to explain the origins of the error in



the original version of the table, which I just want to emphasize again is not the one that we're currently relying on.

ALJ WISSLER: If I understand, you're

saying 2 yes, 1 no with respect to the versions?

MS. BAKNER: That is correct, your Honor. The other point that my colleagues have instructed me to make is that although in Volume 2, Appendix 2.1, the water supply permit application for Big Indian has Version 1, the incorrect version of the table, the report has all of the correct numeric information in it that's consistent with Version 2, not Version 1, and that merely helps demonstrate that it was a bad photocopying job.

Mr. Trader, I would like you to explain, if you will, the difference between Version 1 and Version 2, and how we came to have different numbers.

MR. TRADER: We used a flowmeter to measure flow from a company called Global Water. They produce a flowmeter for measuring streams and ditches and things like that. We





had been using this up until the time when I discovered the problem, which I think was around April or May of 2001, right about the time the application came up. And the problem was the result of a calibration error.

When you receive the meter, there's a little computer widget at the top, and there's a number that -- it's 82.13. You're supposed to manually change that and reduce it down to

33.31, and then you're good to do all your measurements. That had been done long before, but somewhere along the line, a battery was changed, and it was not recalibrated that way. This was not discovered until, like I said, April or May of 2001. I contacted the company, and they said that's not a problem, just multiply all the numbers by the ratio of 33.31 to 82.13. That is simply doing after the fact what the computer would have been ahead of time. That's the calibration problem. So the difference in the tables reflects that multiplied. It's approximately a .5, but it's actually .4056.

ALJ WISSLER: Is this just a conversation that you had with the



manufacturer of the meter?

MR. TRADER: Yes.

ALJ WISSLER: It's not as a result of any correspondence?

MR. TRADER: Correspondence with the company manufacturer -- yes, I talked to them.

ALJ WISSLER: You have a direction from them in writing that says that you multiply this by some factor to get the correct values?

MR. TRADER: Yes, I have an e-mail.

ALJ WISSLER: Am I getting that?

MS. BAKNER: Mr. Trader, do you have a copy back at your office of the e-mail?

MR. TRADER: Yes.

MS. BAKNER: We will provide it on the next day that we come.

ALJ WISSLER: Let me understand. So Version 1 are readings that were actually taken from the meter, the flowmeter?

MR. TRADER: Yes.

ALJ WISSLER: But Version 1's numbers are inaccurate because the flowmeter was not properly calibrated?

MR. TRADER: Correct.

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ALJ WISSLER: So whatever the calibration error was would have been a constant that you simply applied to each of the values, which is why Mr. Habib gets it consistently at 2.5?

MR. TRADER: It's actually 2.4.

ALJ WISSLER: Okay. So the numbers -- wrong though they may have been, the numbers that you got from Version 1 were the actually observed flowmeter readings?

MR. TRADER: That's right.

ALJ WISSLER: And Version 2 is really basically derived from Version 1 by applying the error factor?

MR. TRADER: That's right. That only applies to the readings on the table that were done with the meter. Any bucket measurements or tub measurements, those aren't affected by that.

MS. BAKNER: Mr. Trader, do you have

the table in front of you, and can you point out -- I mean, is it pretty obvious in comparing Version 1 and Version 2 which things were -- which values were obtained with the flowmeter?
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MR. TRADER: Yes, I believe it's the ones that Mr. Habib had highlighted.
MR. RUZOW: After April -- the flowmeter was corrected in April?
MR. TRADER: April or May.
MR. RUZOW: So other readings that are shown on the longer table through the later part of the year --
MR. TRADER: Version 2.
MR. RUZOW: Yeah, Version 2 -- are with the corrected meter?
MR. TRADER: That's right.
ALJ WISSLER: When did you determine that the meter was in error?
MR. TRADER: April or May of 2001.
ALJ WISSLER: How was it that you came to discover there was an error?
MR. TRADER: I looked at the USGS for stream flow measurements at Birch Creek and found that my flow was way above Birch Creek, the measurement downstream; so I went back and looked and said, ah-hah, that's it.
ALJ WISSLER: And you discovered that when, I'm sorry?
MR. TRADER: April or May of 2001.
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ALJ WISSLER: So what has been submitted here as Version 1 is a table that stops at April 2001?

MR. TRADER: Right.

ALJ WISSLER: After 2001, you were using a corrected meter?

MR. TRADER: That's right.

ALJ WISSLER: Is there a consistent error that needs to be applied to those numbers?

MR. TRADER: In Version 2?

ALJ WISSLER: Yes.

MR. TRADER: No, Version 2 numbers are correct.

ALJ WISSLER: So you had the meter recalibrated?

MR. TRADER: For the erroneous numbers, the first set of numbers from Version 1, all those were multiplied by --

ALJ WISSLER: That I understand, but I'm saying, beginning in May, you now knew what the error was --

MR. TRADER: I re-calibrated it. I calibrated it like the manufacturer instructed.

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ALJ WISSLER: Is there a consistent error in the meter that has to constantly be cranked in?

MR. TRADER: No, just at a battery change. Once you change the battery, the

power goes off, you have to reset it.

MS. BAKNER: I think, Steve and Sam, you wanted to describe some sampling methods. Do you want to get into that now, or do you want me to have Mary Beth talk about the second problem?

DR. GOWAN: Yes.

MS. BAKNER: Sam, let me say briefly, we're talking about the sampling methods, because there seems to be some confusion about how the sampling was done and what values were derived. So if you could explain that.

MR. RUZOW: Measurements.

DR. GOWAN: I understand. Whenever we could, we would use a bucket. If we had -- some of the springs, of course, have -- you've seen them, your Honor -- have a tube coming out, PVC pipe; and wherever we could get a five-gallon bucket under, if the flows were low enough, that's the method we used because



that's the most accurate method you can use. We use a bucket and a stopwatch. I'm sure you recall, Silo A had a fairly large stream coming out. We used the 18-gallon bucket for that feature.

Wherever we had a stream, like the side ditch from Bonnie View Spring or Railroad Spring, we used our actual flowmeter. This is the flowmeter Steve was talking about, and that's got a little propeller on it and shaft. And you actually get out into the stream. If

we got into the larger streams like Birch Creek, we would lay out a tape measure to take flow measurements at regular intervals across that stream, and we would have to take a depth measurement as well. So you get a cross-sectional area and a velocity so that you can get a total flow.

ALJ WISSLER: In cubic feet per second?

DR. GOWAN: Exactly, exactly. Different features, like the Bonnie View Springs system, of course, that has a pipe that goes into the building -- I don't know if you recall the building -- and then the



reservoir.

So you have the water, the 113-gallon a minute, or plus or minus whatever that was, went through a meter into the reservoir. There was also a certain amount of that water that would go out through an overflow pipe, a plastic pipe that would go out towards the creek. That's the excess water that was not able to go through that meter.

There was also a certain percentage of that water would come along a ditch from the springs that wouldn't be captured by the spring boxes, and that's the side ditch, the Bonnie View side ditch.

We would take a propeller flowmeter measurement from the side ditch, from the

overflow pipe we would use the bucket, and then for the water that was going into the reservoir, we would read that directly off the meter, which was inside the building.

Now, that was a fairly constant amount going into -- through that meter, but sometimes there would be no water going through that.

ALJ WISSLER: Excuse me, are we talking about the same meter here?

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DR. GOWAN: Yes. This is not the flowmeter. The flowmeter -- this is a meter that's set in the pipe permanently at the Pine Hill water system.

ALJ WISSLER: Not the meter Mr. Trader was referring to?

DR. GOWAN: Right. I know there was some discussion from Mr. Habib about the discrepancies, what these different things mean. He was talking about a usage, flow usage in the Pine Hill system, which is a different number from the meter, their flowmeter on their pipe going into the reservoir. Those numbers are both real numbers. They're not in error. They just stand for totally different things. Part of that reason is if you -- that water had to go into that reservoir, the reservoir would fill up, and they would add chlorine, and it had to have a certain contact time with the chlorine before it's released out of the system; and

that's why you have periods of time when that meter is shut off, because you're no longer accepting water, and all of it would go out
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the overflow pipe.

So you can have periods of time where you're going to see a constant 113 gallons per minute going into this reservoir, to fill up this reservoir, but your actual usage out in the Pine Hill system is going to be quite different from that number at any given period of time.

ALJ WISSLER: Mr. Trader, let me ask you this: The flowmeter that you used that was in error, is that Alpha Geoscience's flowmeter, or did that belong to the Pine Hill Water Company?

DR. GOWAN: That's ours. That's the one that we take around to the different locations.

MR. TRADER: It's portable.

ALJ WISSLER: This flow data that's in Versions 1 or 2, does that data exist for other years? This is for the period 2000, 2001, this data that you guys took, I understand that. Has this data ever been tabulated for any other years?

DR. GOWAN: This is the only --

ALJ WISSLER: I'm not saying you guys
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would do it -- as related to this project, I

understand that, but these kind of flow numbers, were they maintained by the water company at all?

MR. GERSTMAN: We're talking about usage data or flow data?

ALJ WISSLER: I'm talking about the data that's contained in Version 1/Version 2, is that flow data -- is that a record that is kept by the Pine Hill Water Company?

MR. SCHAEDLE: The water company minute books may contain some of this, which we no longer have access to. The last person I know that had them was the owner in 19 -- between 1991 and 2000, possibly they were transferred to Crossroads. I don't know. I know we had a -- not as sophisticated a flowmeter on that flow from Bonnie View during the `60's, and it ranged between 60 gallons per minute to 120 gallons per minute, but I don't have any statistics that show that. That's just from memory.

As far as flow data --

ALJ WISSLER: You remember what from the `60's? Give me those numbers again.

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MR. SCHAEDLE: Flow data, during dry periods, I think the spring flow would fall to about 60 gallons per minute; and during more normal periods, would be 120 gallons per minute.

ALJ WISSLER: Where would that be?

MR. SCHAEDLE: The flow from the

Bonnie View Springs into the reservoir. We had a flowmeter -- we had a flowmeter on the pipe that went from the springs into the reservoir.

The only other thing that is available probably are statistics on the flow of the water through the Pine Hill meter that's been in place since 2000. The meter you took the flow from, you know, going into the reservoir, that meter has been in place since 2000, and I'm sure readings have been taken in addition to the period that you used.

ALJ WISSLER: Actually what I'm interested in, I have Version 1 and Version 2 here, that talk about various flows for various points at various times. All I'm interested in is if, to your knowledge, there are records within the Pine Hill Water Company



where equivalent types of measurements were taken.

MR. SCHAEDLE: Prior to this time?

ALJ WISSLER: Exactly.

MR. SCHAEDLE: What I'm saying is, I think there were records in the minutes of the corporation. If anybody could ever find the minute books of the corporation, you might find them.

MR. GERSTMAN: Where would the minute books be?

MR. SCHAEDLE: The minute books were

transferred when we sold the water company to Ben Oderno. I don't really know whether the minute books were transferred from Ben Oderno to Dean Gitter. He may still have them; he may not. He did retain the corporate title of Pine Hill Water Company.

ALJ WISSLER: Does any of that have to be reported to the State, the Department of Health or anything like that?

MR. SCHAEDLE: What?

ALJ WISSLER: Any of that kind of data?

MR. SCHAEDLE: I don't think it did at



that time.

ALJ WISSLER: All right.

MS. BAKNER: Your Honor, just to clarify again, if I may, the Pine Hill Water Company during the period that it was owned by Mr. Gitter kept very good records of water usage. That's what the system was geared to, records on water usage.

So there are water usage numbers that are reported. I believe Mr. Trader said they take them on a daily basis, and they would be compiled into an annual report, and during the time it was a private water company, it would have been submitted to the Public Service Commission. Now as a public water company, I'm sure that the Town of Shandaken continues to maintain and operate records.

MR. CROSS: That's correct, we do,

your Honor, have those records. Don Clark who is the water superintendent has to keep track of roughly what goes through there for daily flows, and they're submitted to the Health Department on a sheet.

MR. RUZOW: But that's usage?

MR. CROSS: That's usage.

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ALJ WISSLER: That's usage. Are you familiar with tables, Versions 1 and 2 of the tables we're talking about?

MR. CROSS: I'm going to stay right out of that.

ALJ WISSLER: What I'm interested in is I have a situation here where I have data that has been compiled. And I appreciate the candor. There's a question about the meter that was used, and now that meter has been corrected, that data has been reworked in light of that error, I have no problem with that. But all I want to know is is the data that is contained in Table 1A -- whatever version you want -- those flows at those sites, is that a data that is collected and maintained anywhere else? Has it ever been?

MR. CROSS: Just total usage.

ALJ WISSLER: So the only time we're ever going to find compilations of that data is what's right here in this proceeding and that's it?

MR. CROSS: Yes.

ALJ WISSLER: Thank you.

MS. BAKNER: Your Honor, there's a

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very good reason for that. The reason why this data was recovered was specifically for the permit application because we needed to know what all the sources of water were in the area and how they interacted with each other. So that was the purpose of collecting the data.

In terms of the operation of the system, especially with the old permit, there was never any reason to care how much water there was in the creek because they essentially just used as much water as they wanted. We knew that the issue of base flows in the creek would become quite an issue in this proceeding, or presumed it would, and that's why we collected this data all those years ago.

ALJ WISSLER: But you have records of water usage; you have that?

MR. CROSS: That's correct.

ALJ WISSLER: Where is that? Does that get filed with the State?

MR. CROSS: It gets filed with the County Health Department. An administrator -- Dean Pallen was here earlier from the Ulster

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County Health Department. It gets filed with the County Health Department. I'm not sure which gentleman now, because they have changed

people down there just recently; but it's filed with them, a record is, I believe it's once a month.

ALJ WISSLER: Within the DEIS or anyplace, is there a compilation of that historical data, the water usage out of the Pine Hill Water Company?

MR. CROSS: Well, as, I believe Al stated, it was done by Dean Gitter, and it's also been continued through by the Town.

ALJ WISSLER: I don't mean that. I mean if reports are getting filed on an annual basis with the County Department of Health?

MR. CROSS: Yeah, each day is listed, not a monthly figure. Each day is individually listed.

MS. BAKNER: It would not be comparable data, your Honor.

ALJ WISSLER: I'm not talking Table 1 and 2 anymore. I would like to know what, if any, trend there is with respect to water usage out of Pine Hill based upon historic

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usage records. Is it going up? Is it going down? Is it flat? Does it fluctuate? What? That would be helpful to me.

MR. CROSS: I think you'll find if you look back, a lot of it was before repair work, and right now we're looking at repairing and completing --

ALJ WISSLER: Leakage within the

system, but that is a question that I'll tell everybody I've got. I'll be happy if there's somebody here that could answer that.

MR. DUNN: Jack Dunn, New York State Health Department. We can call Ulster County Health Department and have those monthly operation reports provided for the last several years.

ALJ WISSLER: That would be great.

MR. GERSTMAN: Logistically it will be provided to the Judge?

ALJ WISSLER: I'll take it in, and it will be an Office of Hearings Exhibit, and I'll make copies for everybody.

MS. BAKNER: The next issue I would like Mary Beth Bianconi to address, if you could.

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MS. BIANCONI: There was a comment made by Mr. Habib about the method through which to determine how much water there is in any one of the given spring or stream resources. In an older version of the engineering reports, there was a formula that was provided that referenced the infamous Table 1A for Bonnie View Springs and referenced the rows, and said add Row A, to Row B to get Row C, or whatever those letters were.

I would actually like to have Mr. Trader address what the correct calculation is. We made a calculation error in

doing that. We used the wrong rows. That was recognized, and there was documentation submitted back to DEC describing what that change was, and in the current DEIS, the correct calculation is provided.

MR. TRADER: The correct calculation to determine the Bonnie View Springs production would be to add the Bonnie View side ditch, which is Row D; water flowing through the Pine Hill water supply meter, which is Row E; and the Pine Hill water supply

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overflow, which is Row F.

ALJ WISSLER: Do these calculations exist in the DEIS; what you just did?

MR. TRADER: The results are.

ALJ WISSLER: Where is that? Is the formula in there?

MS. BIANCONI: In the engineering report which is in Volume 3, Appendix 7, the engineering --

MR. RUZOW: Your Honor, you're looking at 51.

MR. TRADER: 51B.

MS. BIANCONI: -- describes how those figures were added together. In addition, in an older version of the EIS, there was -- a factor had been used on the math to figure out the flow from Bonnie View Springs -- a factor had been used to provide what we would consider a low flow measurement because during

that time period when the measurements were being taken, it was a period of very heavy rains -- not heavy rains, but it was certainly not a dry period.

So in order to make some kind of an accounting for lower flow periods, a factor

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was used. So in some of the older documents, you see the little equation and you see a factor of, I believe it's .7 was used. That formula was then dropped because we had ended up with a dry period where we could do actual monitoring of low flows, which is more accurate than using a factor. So that was another concern brought up by Mr. Habib was that formula. That formula is part of an old version of the EIS. The new version of the EIS that you're looking at, you won't see that factor in there.

ALJ WISSLER: That's not in this --

MS. BIANCONI: You will not see it in there.

ALJ WISSLER: 51B?

MS. BIANCONI: Right.

MR. GERSTMAN: When you say the new version -- new version of the EIS, we're talking about the Crossroads 51 series?

MS. BIANCONI: Yes.

ALJ WISSLER: So that I'm clear here, Mr. Habib used a formula here?

MR. TRADER: That formula is not used in the DEIS.

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MS. BAKNER: That formula was used in connection with the Pine Hills water supply permit modification, and it was then corrected prior to the issuance of the revised permit modification in September 2002. To be clear, it's not a part of the record in this case. It's a part of the record in the Pine Hill Water Supply Permit Modification. We can certainly get your Honor a copy of that for the record. It's not anything that we have here today.

ALJ WISSLER: I understand that. If I understand Ms. Bianconi to say that there was a formula to which this constant was applied in order to take account of low flow period, which you didn't have because you had a pretty wet flow period. So if you multiplied it times that constant.

MR. RUZOW: The sampling period over which you had data included both a wet period and dryer periods?

MS. BIANCONI: Right, or what we'll call an average period. It wasn't truly wet.

ALJ WISSLER: Can you take me to the data you're talking about?



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MS. BIANCONI: The horrible Table 1A.

MR. TRADER: Up to April of 2001, I believe they used the .7 multiplier.

ALJ WISSLER: Where is it in the

materials?

MS. BAKNER: It is in the DEIS. This is Volume 2, Appendix 3.

MR. RUZOW: You want to know where in the DEIS?

ALJ WISSLER: The numbers that you were talking about, those are now --

MS. BAKNER: They're now correct.

MS. BIANCONI: -- corrected.

ALJ WISSLER: They are now where?

MS. BAKNER: In the DEIS, Table 1A.

MR. GERSTMAN: Are you talking about Appendix -- Volume 2, Appendix 3 for which table now?

MS. BAKNER: For Table 1A.

ALJ WISSLER: Volume 2?

MR. RUZOW: Appendix 2 --

ALJ WISSLER: Volume 2.

MR. RUZOW: Volume 2, I'm sorry.

MS. BAKNER: Appendix 2.

ALJ WISSLER: In Volume 2.

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MR. RUZOW: In Volume 2, correct. In the Wildacres Resort tab, Table 1A appears in its correct form. The mistaken Table 1A appeared --

ALJ WISSLER: Why does it appear in Wildacres?

MR. RUZOW: It's a photocopy error.

ALJ WISSLER: The table is for Big Indian?

MS. BAKNER: That's right. If you

look at page 14 of the conceptual design report.

MS. BIANCONI: Page 14 describes Bonnie View Springs and the monitoring of Bonnie View Springs.

ALJ WISSLER: Right here. (Indicating)

MS. BIANCONI: There you go. When you get down here, it says a low flow occurred, and it gives you the values. The values are correct, and they're from the correct table. That's the only -- Mr. Habib raised a concern about differences between previous versions and current versions, and we're admitting to a calibration error, and we're admitting to a

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math error which had been fully corrected, and we want to make sure it was clarified.

ALJ WISSLER: Your instruments?

MS. BIANCONI: His instruments, my math error.

MS. BAKNER: For the record, they were corrected in the permit modification.

MR. GERSTMAN: Which is not in the record.

MR. RUZOW: Right, it's a separate proceeding.

MS. BAKNER: Your Honor, we'll provide you the letters that were sent to Mr. Ciesluk correcting the record in the other proceeding so it's a little bit clearer and easier to

follow.

ALJ WISSLER: Yes, that would be helpful. Thank you.

MS. BAKNER: Your Honor, there's one more thing we would like to clarify. Mr. Habib made the comment that you could not use an 18-gallon tub, or a bucket which is five gallons as I understand it, to take the one flow that was measured because it would just be too much.

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Sam, can you just address that again, just so we're sure we have that clear on the record.

DR. GOWAN: Yes, that was the Railroad Spring. I'm sure you remember walking up. That was up on the hill above Bonnie View Springs, and it was coming out of the bank and flowing down the ditch, quite a good, substantial flow when we were up there. We measured that with the flowmeter. You couldn't measure that with the bucket because you couldn't get a stream.

ALJ WISSLER: This is the same flowmeter you used for Version 2 or Version 1?

DR. GOWAN: It's the same flowmeter.

ALJ WISSLER: What is the manufacturer of that flowmeter?

MR. TRADER: Global Water.

ALJ WISSLER: Is there a model number?

MR. TRADER: It does. We can get that to you.

ALJ WISSLER: I'd like to have that. Is there any instructions with respect to the calibration of that instrument?

MR. TRADER: Yes.

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ALJ WISSLER: Is it a calibration that you can do in-house, or does it need to be sent out?

MR. TRADER: In-house.

MS. BAKNER: We'll be happy to bring the meter in.

ALJ WISSLER: Is there some kind of maintenance log you guys maintain with respect to that meter when you calibrate it, when you service it; anything like that?

MR. TRADER: You're supposed to change that one value every time you make a battery change, and in this case it was not.

MS. BAKNER: We'll be happy to bring the flowmeter next time.

ALJ WISSLER: And whatever manual you have with respect to it.

MS. BAKNER: That would be great.

Your Honor, if we can have a second, we want to check to make sure we have responded to all of Mr. Habib's questions because he is only available today.

MR. GERSTMAN: Judge, if we might, we would like to -- after we receive the response, we would like to be able to submit a

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written response to some of the comments if we could.

ALJ WISSLER: Not a problem.

(4:52 - 4:55 P.M. - BRIEF RECESS TAKEN.)

MS. BAKNER: Your Honor, we do have two more things we would like to follow up on. The first one is that there was a comment made by Mr. Habib that the usage flow -- usage fluctuates kind of arbitrarily, and we just want to address that again for the record so we're sure it's absolutely clear.

So, Steve, if you could address that.

MR. TRADER: I think what he was saying was that normal usage from the Pine Hill system would fluctuate, higher in the summer, lower in the winter. While that's true, we weren't measuring that, what we were measuring was the instantaneous flow through the meter. The meter has -- I think it's a three-inch diameter. We have a four-inch pipe that feeds into that, so there's a restriction, there's only a certain amount of water that's going to go through that. I think that's why you have a consistent 113,



113.5, 113.4 gallons per minute three months in a row. It's very similar. That's not a water usage, that simply what's going through that part of the water system. You have to add in the overflow and the side ditch to get the spring flow.

ALJ WISSLER: In particular, you're looking at the Version 2E, Pine Hill water supply meter, that one?

MR. TRADER: Yes. And if you jump over to 2001, January, February, March, you see a lot of fluctuation.

ALJ WISSLER: And all these numbers in Table 2 were what you had in Table 1, but you multiplied it by that factor, 2.4?

MR. TRADER: No, not those numbers.

MS. BAKNER: That meter is in the pipe.

MR. TRADER: That was installed by the Pine Hill Water Company.

ALJ WISSLER: So January 18th and May 22nd, 2000, you have a zero reading?

MR. TRADER: Yes, it wasn't actively filling the reservoir. It was all going out the overflow. The meter had shut. It was not

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actively filling anymore, so all the spring flow goes out the side pipe before it goes into the reservoir.

MS. BIANCONI: It's actually valved. So essentially -- the water is always present in the springs. This is a gravity-fed system. The water is always present there, and whether you use it or not, it's either going to come to the pipe or it's going to end up on the ground. One way or another, the water is always present, and it's present on a pretty

continuous basis all the time, all year-round. And that's because it's a spring, and that's what springs do. The water is there all the time.

When water is collected in the collection box in the spring, it goes through a series of pipes which goes into one pipe, a four-inch PVC pipe. At the end of that four inch PVC pipe right when it goes into the treatment building, it narrows down to a three-inch pipe. In that three-inch pipe, there's a meter, that's also a valve. There's a float in the reservoir over here. When it hits a low level, this valve opens, and as much water as can possibly be delivered through that pipe, goes through the system, gets treated and goes into that reservoir.

When the reservoir level rises up to the high level alarm, sends a signal back, this valve now closes. Any water that's present -- water is constantly present, it's constantly available -- is going to have to go somewhere. It's either going to go all over the ground, this is what they call the side ditch because it just kind of ends up there, or it goes out an overflow pipe that's actually on the spring side of the meter -- of the valve.

MR. RUZOW: I think we saw that.

ALJ WISSLER: We did.

MS. BIANCONI: So essentially, that's

why it's possible to have zero or 113, because 113 is the amount of water that can fit through a three-inch pipe, given the characteristics of that water through the three-inch meter. But zero is simply the meter is sitting on the other side of the valve, the valve is closed.

ALJ WISSLER: And pressure which is just gravity?

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MS. BIANCONI: Exactly. Water is always present. You're either drawing it or not drawing it, but the water is always present. That's why you can have that.

But when you look -- a related point Terresa wanted us to make -- you just saw this.

ALJ WISSLER: Yes.

MS. BIANCONI: Where these numbers come from, they were all from those records you were asking Supervisor Cross about. That's where these came from. They were provided to the investigator at the Public Service Commission. They're daily values for use that the Pine Hill Water Company, and now the Town, maintains.

And how they get these numbers is they go -- that meter has a little reader on it with numbers on it. It's a totalizer. If you go at 7 o'clock in the morning today, there's going to be a value on that. In the logbook,

they write down the value. They go back the next day at 7 o'clock in the morning, 24-hour period has gone by, they write down the next
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number. They can simply figure out how much water went through by subtracting, doing the math.

So that's where all of these values come from, but they're not the same values -- when we say 113 gallons of water went through at this particular time of day, they're not necessarily related to these two. This number is how many times did the value open and let 113 gallons of water go through and how many times it closed. That's based on system demand.

So that, I think, explains a couple things; number one, is why it's possible to have zero and 113, yet see fluctuations in these values. It also explains where these numbers come from. Basically every day the operator goes a certain time of day. He tries to go within an hour or two --

ALJ WISSLER: But the numbers on that table are obviously not the numbers on this table? (Indicating)

MS. BIANCONI: Exactly right.

ALJ WISSLER: We're looking at two different things?
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MS. BIANCONI: Those are flow, this is use, exactly. And use data is available from

the County Health Department.

MS. BAKNER: Your Honor, I think that addresses everything we needed to address in response to Mr. Habib. I just want to emphasize that we have rather a lot to say in response to Mr. Schaedle, and we'll be happy to wait and do that another time.

ALJ WISSLER: Mr. Gerstman, any further response -- you intend to put in writing and make an exhibit prior to the close of the record here?

MR. GERSTMAN: Yes, Judge, and I'll come up with, hopefully, a schedule after we get the transcripts where we'll be able to do that.

ALJ WISSLER: Then at this point, we are going to be adjourned for the day, and we will reconvene here on June the 29th.

(5:02 P.M. - WHEREUPON, THE ABOVE PROCEEDINGS ADJOURNED FOR THE DAY.)

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C E R T I F I C A T I O N

I, THERESA C. VINING, hereby certify and say that I am a Shorthand Reporter and a Notary Public within and for the State of New York; that I acted as the reporter at the Issues Conference

proceedings herein, and that the transcript to which this certification is annexed is a true, accurate and complete record of the minutes of the proceedings to the best of my knowledge and belief.

THERESA C. VINING

DATED: August 27, 2004