BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

PEOPLE OF THE STATE OF ILLINOIS,
Complainant,
vs. No. PCB 97-2
JERSEY SANITATION CORPORATION, (Enforcement - Land, Water)
Respondent.

Proceedings held on January 13, 2004, at 9:00 a.m., at the Illinois Pollution Control Board Hearing Room, 1021 North Grand Avenue East, Springfield, Illinois, before Hearing Officer Carol Sudman.

Reported by: Darlene M. Niemeyer, CSR, RPR, CCR
Illinois CSR License No.: 084-003677
Missouri CCR License No.: 866

JO ELAINE FOSTER & ASSOCIATES, P.C.
P.O. Box 138
Glen Carbon, Illinois 62034-0138
(618) 877-7016
(618) 655-0660 (fax)

A P P E A R A N C E S

STATE OF ILLINOIS, OFFICE OF THE ATTORNEY GENERAL
BY: Jane McBride
Attorney at Law
Environmental Bureau
500 South Second Street
Springfield, Illinois 62706
On behalf of the Complainant, People of the State of Illinois.

HEDINGER & HOWARD
BY: Stephen F. Hedinger
Attorney at Law
1225 South Sixth Street
Springfield, Illinois 62703
On behalf of the Respondent, Jersey Sanitation Corporation.

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P R O C E E D I N G S

(January the 13th of 2004; 9:00 a.m.)

HEARING OFFICER SUDMAN: Good morning. My name is Carol Sudman. I am a Hearing Officer with the Pollution Control Board.

This is PCB 97-2, People of the State of Illinois versus Jersey Sanitation Corporation. It is January 13th of 2004, and we are beginning at 9:00 a.m.

Today's hearing is a continuation of the hearing held in Jerseyville on September 23rd and 24th of 2003, and in Springfield on October the 17th of 2003. I will note for the record that there are no members of the public present.

I would also like to mention, as you may know, Section 42 H of the Act was substantially amended by Public Act 93-575, effective January 1st of 2004. The amendments include establishing that the economic benefit from delayed compliance is a minimum penalty. On January 8th of 2004, in People versus ESG Watts, PCB 01-167, the Board did not apply the new amendments because the record was closed before their effective date.

In this case, the People presented their case in September of 2003, which was before the effective date of the amendments. I only mention this as something to be aware of, and I can't speak to what the Board may do.

At this time I would like to ask the parties to please make their appearances on the record.

MS. McBRIDE: Jane McBride for the People.

MR. HEDINGER: Steve Hedinger for the Respondent. With me at the Counsel table is Pam Shourd, the President of Jersey Sanitation Corporation.

HEARING OFFICER SUDMAN: Thank you very much. Are there any preliminary matters to discuss on the record before we call the Respondent's next witness?

MS. McBRIDE: I would just like to continue our objection to these witnesses in that they were not disclosed before the beginning of the hearing.

MR. HEDINGER: I would like to continue my objection to the exhibits and the undisclosed opinion testimony that created the need for us to put these witnesses on.

HEARING OFFICER SUDMAN: Okay. Having said that, Mr. Hedinger, would you please call your first witness.

MR. HEDINGER: Yes. We call Ken Liss.

HEARING OFFICER SUDMAN: All right.

MR. HEDINGER: Where do you want him?

HEARING OFFICER SUDMAN: Right here, please.

MR. HEDINGER: All right.

HEARING OFFICER SUDMAN: Okay. The court reporter will swear you in.

(Whereupon the witness was sworn by the Notary Public.)

K E N N E T H L I S S,

having been first duly sworn by the Notary Public, saith as follows:

DIRECT EXAMINATION

BY MR. HEDINGER:

Q. Please state and spell your name for the record.

A. Kenneth Liss, K-E-N-N-E-T-H, Liss, L-I-S-S.

Q. Mr. Liss, are you currently employed?

A. Yes, I am.

Q. Could you tell us where?

A. Andrews Environmental Engineering.

Q. In what capacity?

A. I am the Springfield office director.

Q. Okay. What do you do as Springfield office director?

A. Review the work of our subordinates --

Q. And what sort of --

A. -- in the office.

Q. What sort of work is that?

A. Environmental and hydrogeology, environmental engineering. The majority of our work is landfill work.

Q. Okay. Andrews Environmental Engineering, as a firm, then, the majority of its work is landfill work?

A. That's correct.

Q. What sort of work does that encompass?

A. We design landfills. We oversee the construction. We review the ground water data. We prepare hydrogeologic reports, geochemical reports. Close and remediate landfills.

Q. Okay. How long have you been in this capacity with Andrews?

A. I went to Andrews in February of 1999 and I became the office director in fall of 1999.

Q. Where were you prior to that?

A. The Illinois Environmental Protection Agency.

Q. What was your capacity there?

A. When I left or the entire time?

Q. Well, how long were you with the Illinois Environmental Protection Agency?

A. Since 1984. From 1984 to 1999.

Q. Okay. How did you start at the IEPA?

A. Basically as an entry level geologist.

Q. Okay.

A. In the RCRA ground water program.

Q. What were your job duties in that capacity?

A. Reviewing hydrogeologic reports that were submitted by companies that needed to, to the EPA. And looking at ground water data and geologic data.

Q. Okay. How long were you in that capacity and where did you move to from there?

A. Probably from 1984 to 1990, from an entry level position to a senior staff position, I guess you would call it.

Q. Okay. Senior staff doing the same job?

A. Escalated responsibilities.

Q. Okay.

A. Helping junior staff. And at that time then I was assigned as a technical assistant to the legal staff to work on pending ground water rules.

Q. Okay. What do you mean, work on pending ground water rules?

A. Did the technical work for determining -- writing basically the rules for ground water.

Q. Were those in regulations that were ultimately adopted by the Pollution Control Board?

A. Yes.

Q. And it is commonly known as what?

A. The Part 620 ground water quality standards.

Q. Okay. Is that the last of your positions at the IEPA?

A. No.

Q. Okay. What else did you do there?

A. From 1990 to, I think, 1992, possibly, I was acting manager, and became manager in 1992 of the ground water unit through 1999.

Q. What does the ground water unit do?

A. It is a segment, a unit of the permit section. And the group writes permits for landfills and hazardous waste facilities, is the main portion of the work.

Q. In that capacity you were a -- you had supervisory authority over employees?

A. Yes.

Q. How many did you have supervisory authority over?

A. Over that time period anywhere from probably the lowest six to probably fifteen with contractual and temporary employees.

Q. That was for the permit section?

A. Yes.

Q. What was the interplay between the permit section, if there was any, between the permit section and the field operations people?

A. We worked closely with the field operations. They -- I guess by example I could tell you that we issued a permit and if documents came in related to a permit modification or some other activity that we were doing, the FOS would have an opportunity to review them and they would also go out and inspect those facilities.

Q. Okay. Mr. Liss, do you have any professional training or educational experience to qualify you for the positions you have been describing?

A. Yes, I have a degree in geology.

Q. Where was that from and when?
A. Illinois State in 1990 -- in 1983.
Q. Okay. Do you have any professional certifications?
A. A licensed professional geologist.
Q. In the State of Illinois?
A. Yes.
Q. Okay. Do you have any professional affiliations, organizations, anything like that?
A. I was in the Illinois Ground Water Association. The Illinois Geographic Information Systems Association.
MR. HEDINGER: Okay. I don't know what number we are on now. We could start with 100 if you want. I only have two exhibits I am expecting to put in today and they are both resumes.
HEARING OFFICER SUDMAN: I think we are at 21. Oh, no. I'm sorry. That was --
MR. HEDINGER: For Respondent?
HEARING OFFICER SUDMAN: -- for Complainant. For respondent, did you submit --
MR. HEDINGER: I don't know that we did.
HEARING OFFICER SUDMAN: We had the party exhibits.
MR. HEDINGER: There were party exhibits and there were Complainant exhibits.
HEARING OFFICER SUDMAN: Yes, I don't think I have anything

for Respondent.

MR. HEDINGER: Well, just to be careful, should we mark this as 10?

HEARING OFFICER SUDMAN: Yes, let's do that.

MR. HEDINGER: Could you mark that?

(Whereupon said document was duly marked for purposes of identification as Respondent's Exhibit 10 as of this date.)

Q. (By Mr. Hedinger) Mr. Liss, I am handing you a document that has just been marked as Respondent's Exhibit Number 10. It also has a -- it is a photocopy of an exhibit, sticker Number 2.

First, I guess, I would like you to explain, if you can, what this exhibit is.

A. Okay. It is titled: Employee Resume Report, and it is a listing, a partial listing of the general experience and education of myself.

Q. Okay. Is that additional information and more detail as to what you have just testified to --

A. Yes, it is.

Q. -- a few minutes ago?

A. Yes.

Q. And down at the bottom where it says Exhibit 2, can you explain why that is?

A. Oh, this was entered when I was deposed.

Q. Okay. So that was just a mark that was left from the deposition, right?

A. Yes.

Q. All right. Mr. Liss, in all of your background and training that you have described, have you had occasion to ever conduct any trend analyses with respect to ground water results?

A. Those are a routine part of our work.

Q. Can you explain what -- how that -- what that routine was?

A. In general terms, if you look at a data set, numbers could represent anything, I guess. And you look at sequencing in time, how those numbers are behaving; if they are relatively the same, if they are going higher or lower. I guess that's the simplest explanation.

Q. Okay. Are these randomly chosen numbers or are they all from the same source?

A. Well, they shouldn't be randomly chosen. They should be from the data set or population.

Q. Okay. Can you just, as an example, give us a real world type of scenario where you would do something like that?

A. I guess relative to ground water, you would want to make sure that the data came from the same well and that the wells were from the same geologic formation. In other words, that you weren't taking water and sampling it to get numbers, you know,

analysis from a very deep well and comparing it to a very shallow well, if they are from different geologic formations.

Q. Okay. Is there a specific number of data points that you are looking for and should they be consecutive? How does that work?

A. Yes, they should be consecutive, and it is time dependent. Generally I guess most of the experts agree and it is well published that you should have at least one per season, which that equates to quarterly ground water monitoring, really.

Q. Okay.

A. And extend beyond that, but four values won't tell you much, put it that way.

Q. Okay. What is the purpose of the analysis?

A. It is to compare the change or identify any change in ground water quality.

Q. Okay. You said this is a routine part of your work?

A. Yes, that's why ground water monitoring requirements are set up and in the rules for waste facilities, determining if there is a change in quality.

Q. Okay. Just to make sure I understand, this was a routine part of your work while you were at the EPA?

A. Yes.

Q. And specifically while you were at the ground water unit?

A. Yes. It still is.

Q. What about your work now at Andrews Engineering, do you do this kind of --

A. The same thing.

Q. Can you tell us, just off the top of your head, an estimate of how many of these analyses that you have either reviewed or had other involvement with?

A. Several per facility because -- let's see. I was at the EPA for 14 years. We might do it for a period of three or four years, and then it causes us to revisit the site later. So we might perform another analysis extending that data. And I think we had, between the RCRA and the solid waste, at one time over 200 facilities.

Q. Okay.

A. Our group was responsible for looking at that data.

Q. So would you say you have done -- looked at hundreds or even thousands of these?

A. Hundreds of analyses, easily.

Q. Okay. Are you familiar with the Jersey Sanitation case that we are here for?

A. Yes.

Q. Okay. Are you familiar, at least generally, with the Jersey Sanitation landfill site?

A. Yes, I am.

Q. Okay. Now, you have described the permit section ground water unit. What involvement did the enforcement -- I am sorry -- the field operations unit have with respect to these trend analysis?

A. An example would be a permit was issued and there is an inspection authority that the Illinois EPA has, and that was largely performed by the field operations section. So they would go to the facility and sometimes they may take ground water samples from the wells, witness the owner or operator taking samples to make sure it was done in accordance with the permit, do their own data reviews, you know, things like that.

Q. Okay.

A. Compliance with the permit. Go out in the field and check compliance with the permit.

Q. Did the field operations unit independently analyze these trends?

A. Yes.

Q. Okay. So there are basically two portions of the IEPA who would be looking for trends?

A. Yes.

Q. Okay. Specifically with respect to the Jersey Sanitation -- well, let me strike that, and I will go this way.

I am going to show you what has been marked as Complainant's Exhibits 16 and 20. These are already in the

records, so I am showing you my copies of those, and I will get them back when you are done. Have you had, prior to today, a chance to review those two documents?

A. Yes, I did.

Q. Okay. Can you describe for me your understanding of what these documents show?

A. It is a -- Exhibit 16?

Q. Yes.

A. These are the ones I should use, these numbers here?

Q. Yes.

A. It is a review basically identifying trends, what is described as trends in data taken from wells, ground water samples at the Jersey Sanitation landfill.

Q. Okay. Is it your understanding that Complainant's Exhibit 20 is the same number, just put in a different order?

A. That's what we were told, yes.

Q. Okay. You have not independently verified that, right?

A. No, I didn't go back and forth to check to make sure everything was there.

Q. You were working at the IEPA when the IEPA began this enforcement case against Jersey Sanitation, correct?

A. Yes.

Q. Did you have any familiarity or understanding at that time? And what -- approximately what year was that?

A. Oh, geez.

Q. If you recall?

A. It could have been in 1994.

Q. Okay.

A. I know it was before I left.

Q. Okay. Do you recall whether you were approached to offer the ground water assistance units views on a trend with respect to Jersey?

A. At the time this -- the review was being done in this facility, there were several facilities that they were doing an independent review through the field operations section under Glenn O'Brien. Not Glenn O'Brien. Glenn Savage. Sorry.

Q. Glenn Savage?

A. Glenn Savage.

Q. Were you involved in that process at all?

A. Yeah, we were -- basically some of the information was shared with us, because we routinely shared information to see what we can do through the permitting. And our ground water -- our ground water unit would supply support, basically technical support, as testimony or our expertise in review of the information, peer review, etcetera.

Q. Okay. Well, now I am going to put in front of you what have been marked as the Party's Exhibits, Numbers 33 and 34. I am looking first at 33. Have you ever seen that document before?

A. Yes, I have.

Q. Okay. What is your understanding of what that document is?

A. This is an example of the reports that were generated from field operations section.

Q. Okay.

A. When they did these, they called them ground water -- thorough ground water reviews or compliance audits.

Q. Okay. Who is the author of that particular document?

A. This one is Linda Hollinshead.

Q. Okay. You were familiar with Ms. Hollinshead?

A. She was an administrative assistant in the FOS section.

Q. Okay. Now, turning to Party's Exhibit Number 34, have you seen that before?

A. Yes, I have.

Q. What is that document?

A. That is a ground water monitoring inspection report for the same facility prepared by Karen Nelson.

Q. Okay. Can you tell us just, I guess, first generally the ground water assistance unit's position at that time that these reports were drafted as to the ability to draw any conclusions from that work product?

A. We reviewed some of them and chose not to participate or use the information.

Q. Is that only with respect to Jersey Sanitation?

A. No, that was -- there were quite a few different ones that were done.

Q. Different sites --

A. Correct.

Q. -- that were going through the same process?

A. Yes.

Q. Can you tell us why the ground water assistance unit chose not to participate?

A. Because it was a compilation of a lot of information from the file, and it was not refined. We didn't agree with a lot of the conclusions that were drawn.

Q. How about the methodology that was used?

A. No, that was an issue, too, on some of them.

Q. In general, can you tell us what disagreement you had with the methodology?

A. It was not verified. The documents didn't contain the good QAQC of the information in the document themselves. In other words, were the samples taken properly, were the -- is the data -- all the data there. In other words, we call them outliers. If there is data that does not fit, if you exclude it from your evaluation, it should still be documented as to why it is not being included, let's say in a trend analysis.

MS. McBRIDE: I am going to object to this testimony. It

is opinion and conclusion that was not disclosed prior. There was a disclosure of the opinions and this was not included in that.

MR. HEDINGER: This is background to explain --

MS. McBRIDE: I would say this is an opinion with regard to an exhibit with data that has been presented that was not previously disclosed.

MR. HEDINGER: Well --

HEARING OFFICER SUDMAN: Did you have an opportunity to question the witnesses?

MS. McBRIDE: Yes, I did. We did ask if he had formulated any other opinions with regard to Jersey, and this was not disclosed.

MR. HEDINGER: This is the same opinion he has with respect to the specific question on Complainant's Exhibit 16. This is the same opinion.

MS. McBRIDE: No, it is not. It is a totally different exhibit and a totally different line of questioning.

MR. HEDINGER: By the way, both of those were exhibits to Mr. Liss' deposition.

HEARING OFFICER SUDMAN: Well, I am going to go ahead and allow the questioning and you can raise this issue on cross-examination.

Q. (By Mr. Hedinger) Let's move on, Mr. Liss, to

Complainant's Exhibit Number 16, and that's this document that was dated September 19th of 2003. And previously you said you had seen that before, correct?

A. Correct.

Q. I would like to specifically turn your attention to references in the narrative of this document starting in the bold face where it says monitoring well G104. There are a number of references to -- and in the beginning, let's just go with that beginning line of that paragraph, G104 ground water quality has worsened over the years. Do you see where I am reading from?

A. Yes.

Q. Okay. Do you have an opinion with respect to that statement?

A. Whether it has worsened or not?

Q. Correct?

A. Is that what you want?

Q. Yes.

A. I can't tell.

Q. Well, you do have an opinion?

A. I have an opinion that I don't agree with the statement.

Q. Can you explain the basis for your opinion? Explain why you don't agree with that.

A. Because the data seems to be selective.

Q. Okay. Explain what you mean by that, please?

A. What I stated earlier about outliers. There was a consistent sampling program performed by the Jersey Sanitation pursuant to their permit conditions, and some of the data is left out.

Q. Pardon me?

A. Left out --

Q. Left out?

A. -- of this evaluation.

Q. Okay.

A. But I didn't check or do a review of Jersey Sanitation's files to make sure every quarter every parameter was done. But the report should state, if it is a quarterly monitoring program, why there is data missing from certain quarters. So I am saying that I disagree that the ground water quality at G104 has worsened over the years, because the data set appears to be not consistent with what the permit requirements are. And there is no explanation at all as to why there is no consistency in the data.

Q. Okay. So basically your opinion is that that document fails to establish that the ground water has worsened?

A. That's my opinion.

Q. Okay. Just using arsenic and G104, for example, can you, for the record, explain what it is specifically that you are talking about?

A. Okay. Off of Exhibit Number 16?

Q. Yes.

A. All right. Give me a minute here. Let's see. There are values listed for arsenic -- I am on page three. It is G104, monitoring point, data collected, result. Those are the columns that have entries in them. And the data starts April of 2000 -- wait. I see. It is ranged backwards.

February of 2000, April of 2000, July of 2000, October, January of 2001, July of 2001, October of 2001. So in 2001 there is data missing. In 2002, there is a quarter missing. In 2003 there are three quarters missing in this trend analysis.

Q. Okay.

A. For arsenic.

Q. Again, to explain why that is important, I know you have already explained it, but specifically with respect to this?

A. In the results column there is highlighted, in other words, they are in bold, values which indicate that there is an exceedance, which is indicated as an exceedance of the standard that is listed, which is 200. The units don't matter. And it shows that -- the bold values show that there are several that go up over 200, and then some of these other ones go down. And the data that is missing, you need that.

Q. Why?

A. To determine if the trends are seasonal as they go up or

down, which it indicates in here it might very well be seasonal because of the months in which the higher values were determined. In other words, April and July of 2000, April of 2001 is missing, but July of 2001 is there, and all of those values are consistent, but they are also bold. So to do a proper trend analysis you should have all the data consistently laid out and a trend might be it goes up and down, it oscillates. But does that mean the ground water quality has worsened? No. There is other factors to consider.

Q. Okay. Still with respect to that Complainant's Exhibit Number 16, and I believe we have been talking about G104, do you have the same opinion with respect to its assertions about G105? And that's on the second page of the document, discussing iron.

A. Okay. Let me look ar the iron. Yes.

Q. Okay. So, again, with respect to G105, it would be your conclusion that this document does not establish that the ground water in G105 has, quote, worsened; is that correct?

A. Correct, in terms of a trend analysis.

Q. Okay. And based on the information that has been provided in that document, can you tell us whether there has been -- whether there is any basis to say that there is a belief that a trend is developing?

A. It is a two-sided question. I guess if you look at the data that you have selected you could say there is a trend, but

if you do it properly and you look at consistent data and all of the data, if all the data is in there, which it appears it is not in there, I would say you can't determine that there is a positive or a negative trend.

Q. So it would be your opinion, based on this document alone, you cannot make that determination?

A. Correct.

Q. Okay. Mr. Liss, you have had an opportunity, in addition to reviewing this, to have reviewed the transcript of Ms. Nelson's testimony in this case, correct?

A. Yes.

Q. Let's assume, hypothetically, that, as she has suggested, there is a trend somehow revealed by this data. What in your opinion, would be the appropriate next step for this landfill to take?

A. To comply with the permit.

Q. What would that require? And to answer that perhaps I should hand you the permit. It is Party's Exhibit Number 41. I do have a page tab there that might be of assistance to you.

A. Well, this is the permit application that I have here. And for ground water monitoring for closure, post-closure care, it indicates that if a trend is developing, if a trend -- I will read it. If a trend is believed to be developing, more frequent sampling, parens, e.g., monthly, close parens, may be performed

to substantiate or dismiss the likelihood of site impact. A professional engineering firm should be retained to develop future actions and/or plans for subsequent IEPA approval.

So it reads basically that whoever is charged, whoever is responsible for this company of reviewing the data, if they believe a trend is developing, they should take a look at it, substantiate or dismiss the likelihood of site impact, and then determine if future actions or plans need to be submitted to the IEPA for approval. That's my paraphrase, but my understanding.

Q. Okay. Finally, Mr. Liss, with respect to the data that is before you in Complainant's Exhibits 16 and 20, can you tell us whether there is any basis for concern for human health or the environment revealed by that information?

A. By the --

MS. McBRIDE: I would object. Foundation.

MR. HEDINGER: I mean, he has the same foundation that Ms. Nelson did, and she testified that these parameters posed a risk to human health. Mr. Liss has 20 years of experience.

HEARING OFFICER SUDMAN: You can give your opinion if you have one.

MR. HEDINGER: I will tell you what, we will go back and lay some more foundation.

Q. (By Mr. Hedinger) Mr. Liss, are you familiar with the health affects generally associated with the parameters that are

revealed in those two exhibits?

A. Yes.

Q. What is the basis for that familiarity?

A. I worked on the -- as a technical assistant for the Bureau of Land on the Illinois ground water rules and the TACO standards.

Q. As part of that job or part of that work, what involvement did you have with respect to health affects?

A. Looked at the geology, reviewed federal standards, how that applies to our Illinois programs, and worked with the Office of Chemical Safety, who basically did all the health risk numbers for those rules. So we worked directly with them and, you know, that's how -- so there is standards set. There is numbers set based on health risks.

Q. Okay. So with that background, can you tell us what your position is with respect to whether these two documents reveal any concern for human health or the environment?

A. First of all, that is an assumption, that somebody is going to drink it or be exposed to it. And I don't -- there is no information here that shows that anyone is going to be exposed to it at all. The values are above a Class I ground water standard for iron, some of the bold values. And they are slightly above the Class II ground water standard for arsenic, and we are speaking of G104.

Q. Okay.

A. I am just keeping everything relative to what we talked about. As for danger to human health and the environment, there is nothing here that shows there is a danger to human health or the environment.

Q. Okay. Can you expand on that? What would be necessary for it to show some sort of a danger?

A. That there is some exposure, which means that somebody was drinking it is usually the likely one. That is what these numbers are set, based on the fact that somebody might drink a certain quantity every day, whether it is a child, or a woman, or a man, and that's how these numbers are set.

Q. You wouldn't expect people to be drinking ground water from a closed landfill?

A. No, they are not public water supply wells.

MR. HEDINGER: Okay. That's all of the questions I have for Mr. Liss.

HEARING OFFICER SUDMAN: Ms. McBride?

CROSS EXAMINATION

BY MS. McBRIDE:

Q. Mr. Liss, is your testimony that the ground water standards are based on health risks?

A. No, not all of them, no. I think the question was the information in front of me, the way it is presented, is it a

danger to human health and the environment. Some of them are not based on health. They are purely based on if they will damage crops or have some impact on agricultural purposes.

Q. Isn't there -- is there not a degradation factor in the ground water standards?

A. There is in several rules.

Q. How about the standards themselves?

A. I don't know if it applies to this facility. There is one section that indicates degradation standards.

Q. All right. Mr. Liss, you testified that you are not familiar enough with the -- you did testify that you are not that familiar with the Jersey Landfill; is that correct?

A. I don't understand what you mean.

Q. Strike that. Your testimony is that you are not personally familiar with the surroundings of the Jersey Landfill; is that correct?

A. The geographic surroundings, or the situation as to why they are here?

Q. The geographic.

MR. HEDINGER: I am going to object. He never talked about his personal familiarity with the geographics surrounding the landfill. You are mischaracterizing the testimony.

Q. (By Ms. McBride) Are you familiar with the geographics surrounding the Jersey Landfill?

A. I am familiar enough with what I have read that has been submitted over the years and what I have looked at in the adjacent facility.

Q. Okay. Now, are you comfortable with your testimony that arsenic is not a potential danger to the environment, not human exposure but the environment, is that --

MR. HEDINGER: I am going to object to the question as to comfortableness.

MS. McBRIDE: All right. Well, let me rephrase.

Q. (By Ms. McBride) Do you believe that arsenic does not pose a danger to the environment?

A. I don't have an opinion on that.

Q. All right. Mr. Liss, you testified that you did review Ms. Nelson's testimony in this case; is that correct?

A. Yes.

Q. Can you tell me what you did in that regard? How did you review that testimony?

A. I just read through the transcript.

Q. Do you remember how -- exactly how she characterized the work that went into Exhibit 16?

A. Yeah, I think I recall.

Q. Could you tell us what you recall in that regard?

A. That they went through -- ground water samples were taken by the Agency, the Illinois EPA, by FOS. They compiled all

the data from the file, which would be the information that is routinely submitted by Jersey Landfill on ground water quality, through sampling data. There was discussion of a generic sampling plan that was followed that was prepared by FOS.

Q. All right. Let me stop you there. I am talking about Exhibit 16. Let's go back. Do you have Exhibit 16 in front of you there?

A. This one?

Q. Correct.

A. Okay.

Q. So what I am talking about is how she described putting that exhibit together.

A. Well, the transcript has quite a bit of information in there. I am just telling you what I recall from reading the transcript.

Q. Okay. Is there anything in that exhibit or in the transcript that you looked at that would indicate that she did actual trend analysis work?

A. I guess it is in this information in front of me here. That is what was discussed in the transcript, if I recall.

Q. What are you referring to?

A. Exhibits 33 and 34.

Q. No, I am speaking of Exhibit 16 and what is in that exhibit and whatever you may have read from the transcript as to

what exactly went into putting that together?

A. Yeah, they reference these documents.

Q. Okay. Now, is there anything in there that would lead you to believe that she actually did statistical trend analysis in putting that document together?

A. Well, again, they reference these documents, and in the documents they have graphs and charts which are trend analysis.

Q. Okay. Those documents that you are referring to, the one that you are referring to --

A. Exhibit 33.

Q. Exhibit 33.

A. Yes, 33.

Q. And so the trend analysis is in 33; is that correct?

A. There are -- there is a lot of information in here. Do you want me to go through it all?

Q. No, I don't. I just want you to say -- I just want to know, is the document that you referred to as a table or a chart contained within that Exhibit 33; is that correct?

A. The one that I just held up?

Q. Yes.

A. Yes, and this is cross-referenced from Exhibit 16.

Q. How do you mean cross-referenced?

A. Well, it is indicated in here, inspection compliance reviews.

Q. Where are you referring to in Exhibit Number 16?
A. Monitoring well G104, that first sentence that we were focusing on. It indicates from 1990 to 1994 previous ground water quality review in the 1994 -- well, 10-24-94 IEPA ground water sampling inspection compliance review.
Q. Okay. So can you read the entire paragraph there?
A. All the way down to dissolved oxygen?
Q. No, no, just that first paragraph directly under the subhead monitoring well G104. This appears on the first page of the document.
A. Okay. G104 ground water quality has worsened over the years.
Q. Right. Then it goes on to say what?
A. From 1990 through 1994 previous ground water quality review in the 10-24094 IEPA ground water sampling inspection compliance review.
Q. Okay. Mr. Liss, is there anything that leads you to believe that this was an actual trend analysis work that Ms. Nelson did?
A. Yes, it is. That is what a trend analysis is. I mean, do you -- what are you searching for?
Q. I mean, you just described a very involved process that includes statistical analysis and the like, and there is nothing in this record that would indicate that she did this kind of work

for this exhibit.

A. I could take the time and search for it to see if it is -- you mean if it is specifically called a trend analysis?

Q. Right, if it is specifically -- this document is specifically called --

A. Which document, 16.

Q. Exhibit 16.

(The witness reviewing document.)

A. Well, no, I don't find the term trend, but when you use the terms decreased, worsened or increased, it implies a trend. The information that was referenced is a process for determining trends, so that's how I came to use the word trend.

Q. Mr. Liss, in your work, in your profession, does the term trend analysis have a specific meaning?

A. Yes, uh-huh. When you say trend analysis --

Q. What does that mean?

A. You are looking at data to see how the data behaves.

Q. You described that earlier?

A. Correct.

Q. How did you describe it earlier? To what extent do you go? What kind of calculations do you do or statistical analysis do you do when you do a trend analysis?

A. In its simplistic form you don't -- some people don't even do a calculation. They look at time dependent data and they

look at the behavior of the data where it goes up and down.

Q. Let me stop you. The behavior of the data. How do they look at the behavior of the data. What is that exercise that they undertake?

A. They plot it in charts, such as these, and then connect the lines to the data.

Q. When you say "these" you are referring back to Exhibit Number 33; is that correct?

A. Well, I think it was also referenced in 34.

Q. All right. But you are looking at Exhibits 33 and 34, and you are not referencing anything connected with Exhibit 16?

A. Well, I think they are connected because it is cross-referenced.

Q. It is referenced as a --

A. I --

Q. -- source of data.

A. I assume this is a summary and this opinion is developed because it is referencing these two major reports.

Q. All right. Mr. Liss, in Exhibit Number 16, are there indications to you that there have been exceedances of ground water standards in the data coming from the Jersey Landfill?

A. Yes.

Q. All right. Looking at arsenic, does it indicate which is -- it is identified as page three on the tabulation. Is there

an indication that there is more than one exceedance of the Class II ground water standards?

A. In the entire table?

Q. Right.

A. Yes.

Q. All right. In that document, do you see an exceedance of arsenic prior to 1994?

A. Prior to 1990? Yes, all this data is pre 1990.

Q. No, 1994.

A. Oh, 1994. I'm sorry. No.

Q. Mr. Liss, if you have -- as we have here, we have a situation where there are exceedances of the ground water standards, and there -- a trend analysis, as described with statistical work and the like, has not been done, but we do have indications of exceedances. In order to keep the landfill in compliance, is that something that you would look at as something that might require trend analysis work?

MR. HEDINGER: I am going to object. Are we talking about this specific landfill and these specific numbers, or is this a hypothetical?

MS. McBRIDE: No, I am talking about this specific document, what is arising in this document.

MR. HEDINGER: Then I would object to a compliance. I mean, a compliance with what?

MS. McBRIDE: A compliance with the -- he has testified that he is familiar with the ground water regulations. He was involved in developing them, and it appears we have exceedances, so I am asking him if given what we have got here, is it appropriate to consider a trend analysis to be applied to this set of data.

THE WITNESS: May I answer now?

HEARING OFFICER SUDMAN: You can answer.

THE WITNESS: Okay. On this set of data is the question --

Q. (By Ms. McBride) Well, the data -- let me --

A. -- that is given here, I would say no.

Q. All right. With all of the data that is coming from the landfill, the quarterly data that is coming from that landfill?

A. Well, I think that's -- the scope of your question has now changed, because we were focusing on this, and this is limited data with excluded data from 2000 to 2003, and this does not show us anything except there is some exceedances. And generally the values, without even plotting them, all seem to be in a range of each other. So I would not say with this information, as prepared, that it would cause me to say let's do a trend analysis.

Q. If you have got a -- now, the next question would be the increased scope. With all of the data that might be available from that landfill, should a trend analysis be done?

A. Now you want me to consider all of this here?

MR. HEDINGER: I think that is highly speculative.

MS. McBRIDE: I want to know --

MR. HEDINGER: We don't have all of that data in front of us.

MS. McBRIDE: It is not highly speculative.

Q. (By Ms. McBride) We have got exceedances out at this site. It is obvious from the data that we have got in this exhibit that we have got multiple exceedances at this site. It is not only arsenic. You have testified to iron, as well?

A. (Nodded head up and down.)

Q. This site has been submitting quarterly data, whether it was readily available for this exhibit or not.

A. Uh-huh.

Q. That is another issue. But there has been quarterly data regularly submitted by this facility and we also have IEPA testimony.

In your professional opinion, given what you have got in this exhibit, as far as exceedances go, would it be, in your professional opinion, appropriate to do a trend analysis at this facility with all available data?

A. I am not trying to be difficult, but you just said the exceedances -- given the exceedances in this exhibit would it be appropriate to look at all the data. And my answer to that was

no, because you said this data didn't belong with this. You just asked me, and --

Q. No, I said --

A. -- you can read it back, that --

Q. -- all available data.

A. But before that you said looking at this exhibit wouldn't you take all available data. If I looked at Exhibit Number 16 on its own, I would not. But I will make it even easier to clarify this and you can stop me if I am saying something wrong here. But in terms of the permit, for compliance with the permit, it indicates that you are supposed to review data and determine if trends are developing. So to comply with the permit, I would say, yes, you are correct, you would always use all of the data. Does that answer your question?

Q. It answers my question as far as whether to use all of the data.

A. Okay.

Q. All right. Is your answer -- now, taking it the next step further, looking at all of the data that you have looked at for this facility, and given we have got exceedances out there and given what the permit says, which you have read prior --

A. Uh-huh.

Q. -- would you do a trend analysis on this facility?

A. Sure.

Q. All right.

A. It is required by the permit.

MS. McBRIDE: All right. Can I have just a minute, please?

HEARING OFFICER SUDMAN: Yes.

MS. McBRIDE: Thank you.

Q. (By Ms. McBride) Okay. Mr. Liss, when you are working with ground water data, did I hear your testimony correctly to say that it is important to be sure you are monitoring water from the same ground water, so to speak? That the ground water that you are interested in, that it should be -- there should be some confirmation that it is coming from -- that the water you are monitoring is the same ground water that is -- it is flowing from one point to the other, and it is consistently the same stream of water?

A. It depends upon how you are performing the comparison.

Q. Okay. Why would that -- I mean, could you explain your answer?

A. You could compare two different wells and show that the quality is different by any order of magnitude. In other words, one group of -- one data is higher than the another. If you want to compare it for purposes of determining if a facility is impacting the ground water, you need to make sure that those wells are producing water from the same formation in your comparison.

MS. McBRIDE: I don't have any other questions.

HEARING OFFICER SUDMAN: Any redirect?

MR. HEDINGER: Can you read back to me the question by Ms. McBride and the answer just before she said, just a moment, please.

(Whereupon the requested portion of the record was read back by the Reporter, beginning at page 40, line 18 through page 41, line 2.)

REDIRECT EXAMINATION

BY MR. HEDINGER:

Q. Mr. Liss, with respect to that question and your answer, what information were you thinking of that would cause you to answer that question as you did?

A. As the question was stated, considering all the data for a facility, permit conditions, would you do a trend analysis, and I said yes. I think it was for any facility.

Q. By that, what did you mean by a trend analysis?

A. What I stated earlier, looking at all of the data that was collected for a facility and qualifying each piece of data as to why you are using it and why you are not using it.

Q. Okay. You have not done that?

A. No, I have not.

MR. HEDINGER: Okay. That's all.

HEARING OFFICER SUDMAN: Anything else, Ms. McBride?

MS. McBRIDE: No.

HEARING OFFICER SUDMAN: Okay. Thank you very much, Mr. Liss. You may step down.

(The witness left the stand.)

HEARING OFFICER SUDMAN: I would suggest that we take about a five minute break before our next witness.

Did you have anything that you wanted to say before we take a break?

MR HEDINGER: No.

HEARING OFFICER SUDMAN: Okay. Then let's go off the record.

(Whereupon a short recess was taken.)

HEARING OFFICER SUDMAN: All right. We will go back on record, and we are ready for the Respondent to call his final witness.

MR. HEDINGER: Yes. Except before I do that, can I move into evidence Respondent's Exhibit Number 10. That is the --

HEARING OFFICER SUDMAN: Oh, yes. The resume?

MR. HEDINGER: Yes.

HEARING OFFICER SUDMAN: All right. Any objection?

MS. McBRIDE: No.

HEARING OFFICER SUDMAN: All right. Respondent's Exhibit Number 10 is admitted.

(Whereupon said document was admitted into

evidence as Respondent's Exhibit 10 as of this date.)

MR. HEDINGER: Respondent's final witness at this stage of the proceeding will be Bradley Hunsberger.

HEARING OFFICER SUDMAN: The court reporter will swear you in.

(Whereupon the witness was sworn by the Notary Public.)

B R A D L E Y H U N S B E R G E R,

having been first duly sworn by the Notary Public, and saith as follows:

DIRECT EXAMINATION

BY MR. HEDINGER:

Q. Mr. Hunsberger, are you currently employed?

A. Yes, I am.

Q. In what capacity and where?

A. At Andrews Environmental Engineering as director of hydrogeological services.

Q. You were in the room a few minutes ago when Mr. Liss was testifying, correct?

A. Yes.

Q. Do you agree with his general discussion of the business of Andrews Environmental Engineering?

A. I do.

Q. What is your -- specifically, can you describe what you do professionally in that capacity?

A. I have a staff of eight personnel, mostly geologists, some environmental scientists, a couple of biologists. I oversee their work product from hydrogeological investigations, to data valuation, other submittals in the environmental nature.

Q. Okay. Primarily relating to landfills?

A. Most of them are related to landfills. The vast majority are, yes.

Q. Okay. How long have you been working with Andrews Environmental Engineering?

A. For 16-and-a-half years.

Q. For 16 and a half years. That would be since -- do you know when you --

A. Yes, July 1st of 1987.

Q. Okay. Did you have any professional employment prior to that?

A. I did not.

Q. So you -- how about college education?

A. I have a bachelor of science degree in geology from Illinois State University, graduating in 1986.

Q. Okay. Do you hold any professional designations with any states?

A. I am licensed, registered, or certified in Illinois,

Wisconsin, Missouri, Indiana, and Tennessee. I am also certified in the AIPG.

Q. Okay. In those list of states you just said, what is your certification or your professional designation?

A. Illinois is licensed. I believe Wisconsin is also licensed. Missouri is registered. Indiana is certified, at least at that time. I believe it is changed to a license now. And Tennessee, I don't recall specifically which one that is.

Q. Those are professional geologists designations?

A. Yes, professional geologist, that is correct.

Q. What is the AIPG?

A. I think it is the Association of Professional Geologists. I may have that acronym incorrect, but it is a nationwide certification that really predated the states becoming or requiring to be registered.

Q. Okay. When does that date back to?

A. It predates my entrance into the environmental arena, so it has been ongoing for many, many years.

MR HEDINGER: Okay. Could I have that marked, please, as Exhibit Number 11.

(Whereupon a document was duly marked for purposes of identification as Respondent's Exhibit 11 as of this date.)

Q. (By Mr. Hedinger) Mr. Hunsberger, you have just been

handed what has been marked as Respondent's Exhibit Number 11. Can you tell us what that is?

A. That is my personal resume.

Q. That shows in more detail the professional and educational experiences that you have just been summarizing?

A. That's correct.

Q. Is that an accurate portrayal of your professional and educational background?

A. It is accurate, yes.

Q. Specifically, with regard to ground water monitoring systems, Mr. Hunsberger, can you tell us what experience you have had?

A. I have been involved in excess of 60 different landfill facilities in Illinois from a ground water monitoring or related aspect.

Q. Okay. What does that involve? With respect to the ground water monitoring, does it involve placement, setting up the plans, just what does --

A. A combination of those. Each facility entails a different amount of work. Some facilities, it would be designing a boring program to determine how to design the monitoring program. Installing the monitoring wells personally. Remediation -- I shouldn't say remediation, but evaluation of a system if there are impacts. And remediation design and

modification to monitoring programs in the event that there are impacts. It varies. Each facility, you know, has a different amount of work entailed.

Q. Okay. But in general, then, would you say that you are familiar with the general requirements, at least as required by the Illinois EPA with respect to ground water monitoring systems?

A. Yes.

Q. Specifically with respect to the placement of ground water monitoring wells?

A. Yes.

Q. What is the purpose of -- at a closed landfill, what is the purpose of a ground water monitoring system?

A. To monitor for potential impacts from the waste units.

Q. Okay. What is the -- what is the goal of these monitoring wells that are used? What are they looking for?

A. They are placed in likely migration pathways, in the event that the facility was impacting the ground water, that it would be determined in a short amount of time.

Q. Okay. Does it matter where the wells are placed?

A. Yes, it does.

Q. Does it matter the depth that they are placed?

A. It can.

Q. Why?

A. You base the placement of the monitor wells vertically,

meaning where the screen location would end up at, in accordance with the stratigraphy beneath the facility. Clay units typically don't transmit water very well. So one would look for permeable seams, sandy, silty, that would be connected, preferably throughout the entire facility, so that a network of monitor wells would be screened in one stratigraphic zone. That does not always occur. There are sand-silt lenses that are not continuous.

Q. You are now talking generally, right?

A. Generally, that is correct.

Q. These are things that you have to watch out for --

A. Exactly.

Q. -- at every facility you go to?

A. Yes.

Q. Can you explain what you mean by stratigraphic?

A. It is a depositional bed. Typically in Illinois, at least in the northern two-thirds, it would be glacial related. When those are deposited, they are typically deposited in layers or beds. Not always. Sometimes there are lodgment tills which are deposition of material that is just slammed down by ice. But typically you get a layer cake affect. So that's why it is called stratigraphy; there are different strata.

Q. Okay. You are familiar with the Jersey Sanitation Landfill site?

A. Yes, I am.

Q. Can you describe the basis of your familiarity, how is it that you are familiar with the site?

A. In 1992 Andrews Engineering was contracted to put together a permit application for a facility known as the RCS Landfill. That is approximately 500 feet south of the boundary for Jersey Sanitation.

As part of that permitting process, I designed a boring program. I was in the field, as a geologist, logging the bore holes while they were being drilled. I utilized some information that was available from the Jersey Sanitation facility to augment the information that I was getting from the RCS property.

So by being there in the field, seeing the soil samples come out of the holes, logging those, and then correlating that with the information on the Jersey Sanitation facility, that allowed me to become intimately familiar with the depositional environment and the geology at the Jersey Sanitation site.

Q. Okay. Could you characterize the Jersey Sanitation site as consistent with what you saw at the RCS site?

A. It is consistent, yes.

Q. Now, that is based on the existing information that you were able to review of Jersey Sanitation?

A. That is correct.

Q. All right. Mr. Hunsberger, I am going to show you what

is marked as Complainant's 16, and actually introduced as Complainant's Exhibit Number 16, and also the Party's Exhibit Number 34. I have tabbed a page there for future reference that may assist your testimony.

But turning first -- well, I guess before turning to these exhibits, can you tell us what, if anything, you have reviewed in preparation for your testimony today?

A. I have reviewed the information that was previously submitted by the Complainant's, and I believe that the hydrogeologic report for the RCS Landfill had been submitted previously, as well. I did review that, as well. And the only other piece of information that I had looked at, which was provided to the Complainant, was a set of data from the Jersey Sanitation landfill, I believe the fourth quarter of 2002, analytical reports. That was specifically for verification of ground water elevations in those existing monitor wells at the Jersey site.

Q. Have you reviewed the transcript or any portion of the transcript from the earlier hearings in this case?

A. I had reviewed parts of the testimony from Karen Nelson, yes.

Q. Okay. Have you reviewed Complainant's Exhibit Number 16?

A. I have seen it, yes.

Q. Okay. I would like you to turn, then, specifically to Complainant's Exhibit 16. I would like to turn your attention to the statement on that first page, and I believe it is underneath the box of material that says that G103 does not appear to be an up gradient well, and possibly is down gradient. Is monitoring a deeper ground water zone than the down gradient wells. Do you see where I am looking at?

A. Yes, I do.

Q. Okay. Do you have an opinion as to the correctness of that statement?

A. Yes, I do.

Q. Can you tell us what that opinion is?

A. My opinion is that that is an incorrect statement under the table.

Q. Okay. Can you explain why, the basis for and the reason for you coming up with -- coming up with that opinion?

A. Yes. I have reviewed the boring logs and the well completion reports for the monitor wells at the Jersey Sanitation site. Those were presented in Exhibit Number 34, I believe. Yes, they are. In review of the screen zone and the geology on the site, each of the monitor wells are screened at the bedrock interface beneath the facility and those are appropriate. That's an appropriate screen interval for those monitor wells.

Q. Okay. Can you turn to Party's Exhibit Number 34, and I

believe it is Attachment 5 to that.

A. Yes.

Q. Okay. Using that page as a reference, can you, for the record, explain in greater detail what you just said?

A. Yes. In order to evaluate the appropriateness of G103 as an up gradient well, not only do you look at the screen intervals and the stratigraphy that these wells have been placed through, but it is important that the potentiometric surface, or the ground water flow direction, moves from the up gradient area, obviously, to the down gradient area.

G103 is located to the east in a topographic high area. One of the down gradient wells, at least in Attachment 5 here, is G104. That is located in a topographic low area. Looking at the water elevations presented in this cross-section, it shows that the water moves from areas of high potentiometric surface from G103 to the areas where the water level is lower, which would be G104. And on the far left side of this cross-section is Sandy Creek, and that appears to be a discharge area for the ground water. And so it appears that the ground water is moving from east to west and then discharging into the Sandy Creek. So G103, then, is located in an up gradient location.

Q. But looking at that picture, does that not show that there is some places that means water would be traveling up hill?

A. It does. And, again, the lower confining layer here,

which is identified -- well, it is not identified in this cross-section. But the bedrock, essentially, is a lower confining layer, meaning that any vertical migration of the ground water will then begin to move horizontally at that contact. The pressures from the higher heads in G103 are going to drive the ground water movement.

And it may appear that in this cross-section the ground water would be flowing up hill and that may, indeed, could be happening at this location. It is no different than having water in your -- in a bathroom in the second story of your house. As long as the stand pipe, which is your water tower, is higher than the second story of your house, you are always going to be able to get water in those upper stories.

It is the same thing here. The water level to the east is higher, and that is where the pressure gradient is the greatest. It is going to diffuse that water to areas of low pressure. So G104, or to the west, is the area of low pressure. So there is your movement.

Q. Okay. So it is really a question of the pressure?

A. Yes.

Q. Okay. Do you have any reason, based on these two exhibits in front of you, to question the reliability of the data that G103 might be producing?

A. No, I do not. There is no indication that there is a

problem with well integrity. Based on what I have seen here, the integrity of the wells do appear to be fine. Which means that there is no surface infiltration affects. And it does appear to be providing appropriate data.

Q. Appropriate as?

A. As --

Q. As the up gradient well?

A. Well, as the up gradient well, it appears to be representative is what I am -- is the word I was looking for.

Q. Okay.

A. So it appears to be representative data of the background well.

Q. Okay. Is there any reason or rationale to perform any further evaluations or even modification of this ground water monitoring system based on what you are seeing in those exhibits?

A. No, there is not.

MR. HEDINGER: I have no further questions of Mr. Hunsberger.

HEARING OFFICER SUDMAN: All right. Ms. McBride?

CROSS EXAMINATION

BY MS. McBRIDE:

Q. Mr. Hunsberger, in order for that 103 to be measuring the same water as, say, G104, the strata holding the water would have to be continuous, would it not?

A. The bedrock interface is continuous.

Q. How do you know that?

A. Because the log showed that the bedrock is located -- well, obviously, the till is over the bedrock. The bedrock is regionally present. It has to be. So your glacial material sits over the top of the bedrock, and at that interface that is present beneath the entire facility.

Q. Is that just an assumption you are making or do you know that to be true?

A. I know that to be true.

Q. How do you know that to be true?

A. Because it shows up in the borings, and the bedrock is the base of all of the geology in Illinois. So once you get through the unconsolidated deposits you are not going to have glacial sediments going down to the core of the earth. There has got to be bedrock, and it is here.

Q. Is the material that these wells are screened in, is that identical amongst the various wells?

A. G104 shows that it interfaces what appears to be a limestone. G103 looks like it is sitting on top of a shale unit.

Q. What about the actual strata carrying the water? Is the bedrock carrying the water?

A. It is the contact between the glacial sediments and the bedrock would be actually moving the water the most.

Q. Is that material identical between the two locations?
A. It is generally the same, yes. There may be some subtle differences.
Q. Such as?
A. Well, mineral content may be slightly different. You may have where it is --
Q. Let me rephrase that. Specifically to what you observed given the borings and all factual information here, do you observe a difference between materials at 104 versus 103?
A. I will look at the log and tell you specifically.
(The witness reviewing documents.)
A. Okay. The log for G104 is listed as MW-2. And sitting directly on top of the bedrock -- as a matter of fact, here it says that the upper bedrock is of massive bedded shale, and then that overlies limestone, and the shale is not shown on the cross-section. Above that -- I'm sorry. There is no shale on top of the limestone. White ground, very moist, hard, low/medium plasticity, very silty clay. So you have a silty clay directly overlying --
Q. Can you verify for us -- I am sorry to interrupt. Can you verify for us what log you are looking at, or what well you are looking at?
A. This is G104 and the log is MW-2.
Q. Okay.

A. That is what is provided in this document here.
Q. In 34?
A. Yes, it is.
Q. Okay.
A. G104 is handwritten in the MW-2. I am assuming that is an Agency -- somebody from the Agency wrote that in there.
MR. HEDINGER: Do you have the one that has been introduced as evidence in front of you there?
HEARING OFFICER SUDMAN: I have -- I do not have this witness' resume.
MR. HEDINGER: No, I mean 34.
HEARING OFFICER SUDMAN: Oh, 34.
MR. HEDINGER: You are looking at 34, aren't you, Brad?
HEARING OFFICER SUDMAN: I have it. Yes, I have it. Does someone need to look at it?
MR. HEDINGER: Well, I just want to make sure. Brad, look at the copy that is in the record already and make sure that you find the same document or the same page there. Don't get them all mixed up.
THE WITNESS: Right. Okay. Now, this is typed in here, but it is the same number. G104 corresponds with MW-2.
HEARING OFFICER SUDMAN: Okay. So this is Party's Exhibit Number 34, a document with the date of May the 9th of 1994, IEPA ground water sampling and analysis plan for Jersey Sanitation.

And within that document you are looking at Attachment 3 and what is that, M --

THE WITNESS: MW.

HEARING OFFICER SUDMAN: MW-2, and it says, parenthesis, G104. Okay.

THE WITNESS: All right. The material on top of the bedrock in G104 is generally shown to be a dark gray, high plasticity silty clay. And it contains a little gravel which appears to be limestone in nature, because that is in parenthesis, and dark gray, slash, brown, moist trace sand. That means just very minute traces of sand. That's what sits on top of the limestone at G104.

HEARING OFFICER SUDMAN: This document you are looking at is in an attachment called Ground Water Monitoring Program Review, part of the same exhibit, and this page is -- well, it is a test boring log.

THE WITNESS: Sheet two of two for MW-2.

HEARING OFFICER SUDMAN: Yes.

THE WITNESS: G103 is listed as MW-1. On top of the shale bedrock there is brown, medium plasticity, silty clay and sand and gravel, light brown, moist, very stiff, medium plasticity, very silty clay, trace iron standing. So in both locations you have silty clay essentially over the top of the bedrock. One appears to have a little more oxidation than the other. That

would be G103, which appears to have slightly more oxidation in the clay. That is determined by the color of the clay. So to answer your question, both materials look to be very consistent.

Q. (By Ms. McBride) Okay. Now, you have testified that it appears that the flow of the ground water would be to the west; is that correct?

A. That's correct.

Q. What is keeping it from going south?

A. There looks like there is a ground water divide between the RCS property and the Jersey Sanitation property. And what is keeping it from going south, then, would be the discharge in the Sandy Creek area along the west there. That is dominating the flow in the west -- or at the Jersey Sanitation facility. So that is why you are seeing a westward ground water movement at that location.

Q. So what you are essentially saying, and correct me if I am wrong, is that at the Jersey Landfill there the ground water is flowing to the west, at the bedrock level it is essentially flowing up hill to the west and that there is some sort of divide causing that ground water to flow west; is that true?

A. The divide does not cause it to flow west. The discharge to the west in the low topographic areas is drawing the ground water in that direction because you are going from high pressure to low pressure. High pressure being at G103 and low

pressure being in the Sandy Creek area.

Q. Now, are you familiar with how the ground water flows at RCS?

A. Yes, I am.

Q. Can you tell us what --

A. It generally flows to the south with easterly bearings and some westerly bearings.

Q. Is that area -- would you characterize that area as adjacent to the Jersey Landfill?

A. Yep. Yes.

Q. So it is flowing west to Jersey and immediately adjacent it is flowing south; is that correct?

A. That is correct. That is verified by evaluating the ground water elevations in the RCS monitor wells, because the wells are screened at the same interval, which is the bedrock interface. And the ground water levels in the north wells at the RCS facility are higher than what they are at the Jersey Sanitation facility.

So if you use all that data and put it on a potentiometric surface map you will see that there is ground water divide north of the RCS Landfill. The ground water north flowing to the west and the ground water south of that divide flows generally to the south.

Q. Okay. What factual evidence do you have of the divide?

A. Plotting the potentiometric surfaces or creating the potentiometric surfaces using the ground water elevations.

Q. Okay. So can you explain, then, on site what exactly you are doing there? Please just explain where those surfaces are that you are looking at so we have a factual basis behind that opinion.

A. The potentiometric surface is the surface of the ground water that it would rise to in the event that there were unconfined conditions, meaning there was nothing compressing the ground water at the bedrock interface. If you take all that information and you draw contours to where the ground water would rise in these monitor wells you will see essentially a topographic profile of the high topography between the two landfills. And at the RCS facility it then would decrease, and at the Jersey Sanitation facility it would decrease to the west. It would decrease at the south at RCS and would decrease to the west at Jersey Sanitation.

It is forced potential for the ground water. It is the weight of the ground water and the gravimetric forces that create the pressures, and that is just the way the ground water is going to move. Based on having firsthand knowledge of the soil at RCS and reviewing the logs at Jersey Sanitation, the wells are all placed in the same monitoring zone at the bedrock surface. So the data is good data. You can combine the two and use it to

create the one map that shows the contours of the ground water. And then that, thus, would indicate which way the ground water is flowing.

Q. Okay. My first question is if there was a flow to the south, what would that look like? What would the elevations be?

A. There is potentiometric surface in here. I believe that was created maybe by Karen. I don't recall. There is one in here for both the Jersey Sanitation landfill and there is one in here for the RCS Landfill. They are not the same sample dates, but because of the consistency of the ground water levels, you can still apply that data and get a good representation of what the potentiometric surfaces are. If I can find those two maps in here -- here is one of them.

Q. I believe it is Attachment 8 and 9.

A. Yes, there is Attachment 9 and there is Attachment 8. That is correct.

Q. All right.

A. Now, if you take these two attachments and you look at the ground water elevations, you will notice in G105 at the RCS facility, it has a ground water elevation of 565. If you look at the closest Jersey Sanitation well, which is G104, that's at 547. So right there you know that the pressures are higher at 105 than they are at G104.

So if you were just to take those two points at face value,

it would indicate that the ground water is moving somewhere in a northerly direction. But when you combine all of these wells and all of the data together, that is not the case. You still have a southerly flow direction at RCS and a westerly flow direction at Jersey Sanitation.

Q. How is it, given -- okay. Now, you said -- let me strike that and start over again.

The wells at RCS, are they screened at the bedrock?

A. They are screened at the bedrock interface, yes.

Q. So how is it that you are so sure that 103 is not part of that southern system?

A. 103 could be part of the southern system. If you look at the ground water elevation at 597, that is higher than what we are seeing at G101 at RCS, which is 561. That can be an appropriate location for an up gradient at both facilities. It just happens that at the west of there the water moves to the west, and south of there it moves to the south.

Q. Okay.

A. Your recharge area or your high spot is in that northeast area for both facilities.

Q. I just want to confirm again that Andrews nor -- strike that.

I want to confirm again that to your knowledge there has been no field work done that will confirm that this strata right

above the bedrock is continuous; is that correct?

A. The strata above the bedrock --

Q. The strata that you are claiming that ground water is traveling, which would be right at the bedrock level, has there been any field work done to confirm that?

A. All the borings out there show it.

Q. Okay. And explain that answer, please.

A. That's the field work, by drilling it, identifying the soils in the bedrock and then placing the well screens at that particular location and taking the depth of waters and determining what the height of the water is at each location is the field work.

Q. Okay. But you are just assuming it is continuous; isn't that correct?

A. Well, you are going to have a clay material overlying the bedrock anywhere out there.

Q. All right.

A. In some areas there might be a little more sand and gravel, or there might be a very thin weathered zone in the bedrock to transmit water, but it is all under the same hydraulic system.

Q. In this kind of material that this -- in this location, is it not true that there are discontinuous lenses of permeable material?

A. There are a few, yes.

Q. All right. So what convinces you that there absolutely cannot be another lens that might be -- you know, that another permeable lens is lying above this bedrock?

A. Well, there could be a permeable lens. If they are lenses, they saturate and that's all they do. They don't transmit water. They are just there.

Q. What about another permeable layer, another strata, what convinces you that there is absolutely not one out there?

A. I have not seen them in the boring logs, and based on the depositional environment, you normally get those -- where there is one there is usually more. In this system it is a very thick clay sequence with only lenses. Because the glacial depositional environment is very -- over a large area, and these aren't outwashed deposits, which means they are due to melt water from a glacier, these are actual sediment deposits. So it is unlikely that you are going to see any additional extensive permeable zones that are going to transmit water. It has to do with the glacial environment or the depositional environment.

MS. McBRIDE: Okay. That's all.

HEARING OFFICER SUDMAN: Any redirect?

MR. HEDINGER: No redirect.

HEARING OFFICER SUDMAN: Okay. Thank you, Mr. Hunsberger.

(The witness left the stand.)

MR. HEDINGER: I would move into evidence Mr. Hunsberger's resume, Respondent's Exhibit Number 11.

HEARING OFFICER SUDMAN: Any objection to the admission of Mr. Hunsberger's resume?

MS. McBRIDE: No.

HEARING OFFICER SUDMAN: Then we will admit Respondent's Exhibit Number 11.

(Whereupon said document was admitted into evidence as Respondent's Exhibit 11 as of this date.)

MR. HEDINGER: With that, the Respondent will rest.

HEARING OFFICER SUDMAN: All right. Thank you very much.

Ms. McBride, would you like to -- how many witnesses do you plan to call for your rebuttal?

MS. McBRIDE: One.

HEARING OFFICER SUDMAN: Would you like to go now or would you like to take a five minute break? It is up to you.

MS. McBRIDE: Yes, I would like a five minute break, please.

HEARING OFFICER SUDMAN: Okay.

(Whereupon a short recess was taken.)

HEARING OFFICER SUDMAN: All right. We will go back on the record, and we will pick up with the Complainant's rebuttal witness.

MS. McBRIDE: All right. The People call Karen Nelson.

(Whereupon the witness was sworn by the Notary Public.)

K A R E N N E L S O N,

having been first duly sworn by the Notary Public, and saith as follows:

DIRECT EXAMINATION

BY MS. McBRIDE:

Q. Karen, would you state your name, please.

A. Karen Nelson, N-E-L-S-O-N.

Q. Have you testified previously in this proceeding?

A. Yes.

Q. When was that? Would it be in September?

A. Yes.

Q. Okay. So, Karen, were you in the room today when Mr. Hunsberger -- and if I haven't got that name right I am sorry -- but the previous witness just explained his conclusions regarding the G103 well, whether it is up gradient or not?

A. Yes.

Q. Okay. What I would like to ask you is whether you agree with his conclusions?

A. Not all of them.

Q. Okay. Can you specify as to which ones you do not agree with?

A. Well -- and we have maps available?

Q. Yes.

A. Okay. I don't agree that there is a continuous permeable zone on top of the bedrock that connects all the wells and leads into Sandy Creek. And that's based on the boring logs that we have been talking about.

I will start out with G103. On the boring log of G103, the deep up gradient well, at 96 feet there is a one-foot sand and gravel zone. And this is also in the Hennegan report, the hydrogeology report done in 1991, they refer to that one-foot sand layer and they also refer to it as a gravel zone. This would be a permeable zone.

Q. Can I stop you right there. Can you explain what that Hennegan report was?

A. It was a hydrogeological investigation for the monitoring network at the site.

Q. Okay.

A. They installed or they did borings and they installed piesometers and monitoring wells.

MR. HEDINGER: I am going to object. Is that in evidence?

MS. McBRIDE: I have got it right here. The problem is we think we have the boring logs in 34.

Can you look at 34 and see if --

MR. HEDINGER: Is this the same --

MS. McBRIDE: This is the Hennegan report that you are getting right here. I am going to have it marked.

THE WITNESS: Yeah, they are in here, in my compliance review report.

MS. McBRIDE: I have got the report. I am not going to enter it unless -- bring it forward unless we have to. We are going to try to work off of 34 here.

THE WITNESS: Okay. Well, that is where these boring logs came from, was the Hennegan report. Okay. I need to find the map. The boring for G103 was -- I am going to have to figure it out. See, I have got it handwritten on those and I don't have it on here. The borings aren't called the same thing as the monitoring wells, so it is a little confusing.

Q. (By Ms. McBride) Is there anything that would refresh your recollection as to what you --

A. My handwritten notes and stuff that I have been working on.

Q. Okay. Can you explain what the handwritten notes are?

A. It is a map that has pencil notations on it. I just found G103 in here, though.

Q. Okay.

A. So if you look at the boring log for -- it is called monitor well one, but it is the boring for G103.

Q. Okay.

A. At 96 feet, which is where the screen is, part of where the screen is, you find brown, moist, hard -- no, that is not it. A gray/brown, very moist, fine to medium gravel, with a trace of silty clay. So that would be a permeable zone.

Q. Why do you consider that a permeable zone?

A. Because sand and gravel has a lot of porosity and permeability and water will transmit through it.

Q. Does the size of it being a foot weigh into it?

A. That's not a real big zone, but it will definitely transmit water into a monitoring well, yes. I don't know what the extent of that zone is because it does not show up in other borings or wells. I don't know if it extends further south or north or northeast, because there is no information. But it is a one-foot zone, which is -- it would transmit water into a well.

Q. Okay.

A. We sampled that well and it had a lot of water in it. It never went dry while we were purging. I don't know how many gallons of water we purged out of the well. I would have to look it up. But it never went dry. The water level, I can't remember what the water level did, really. We didn't have any problem getting plenty of water out. I think that at least in part the water is coming from that one-foot sand and gravel zone which is above the bedrock.

Q. Now, why is it that you are not sure if it is a

continuous zone to the other wells?

A. Well, to the west of it, the bedrock slopes upward and so if the zone is a lateral zone it is going to be truncated by the bedrock. And also it does not show up in the other borings for the various borings that were done at the site and the borings for the monitoring wells. That zone is not present in the other wells.

Q. Okay. What is at the bedrock level? Is that obvious from borings?

A. Yeah. Well, the bedrock is different in the wells and goes from shale on the east side to clay stone in the middle, and then shale and limestone on the west. And what is directly above it varies slightly but it is blue, gray and brown silty clays. Sometimes there is a mention of trace sand or trace gravel or something like that. There is -- in a couple of the borings there is a mention of a thin weathered zone. I can't recall. I think it is G104 that has six inches of weathered clay stone, which just because it is weathered does not necessarily mean it is permeable or it is going to transmit much water.

So what is above the bedrock you have got the relatively impermeable bedrock with relatively impermeable silty clay above it, glacial till. That seems to be pretty consistent. Some of the till is brown, which we have mentioned means -- it usually means it is oxidized and it can transmit water, which is very

common. It does not make it an aquifer or anything close to an aquifer, but it will transmit water and rainwater will seep into it and through it.

MR. HEDINGER: I am going to interpose an objection here. I was not sure when Ms. McBride put Ms. Nelson back on the stand what the purpose of the testimony was for. But we, because of opinions first made just before the hearing in September, we asked and were granted the right to put on some additional opinions in response to that. We did so and we were prepared to offer them up when we came together again in early October. By late October that was continued. We had a deposition and Ms. McBride deposed Mr. Hunsberger at length and Mr. Liss, as well.

I would object that these are new opinions coming from Ms. Nelson. I know Ms. McBride's position is they are new opinions offered to rebut our opinions. But I have never been given any notice of these opinions. There is nothing in Ms. Nelson's previous where we are talking about this lens at the 96 foot level or these other issues she is raising. So I would object that these are undisclosed opinions and shouldn't be part of this proceeding.

HEARING OFFICER SUDMAN: I am going to overrule your objection. We will note your objection, but her testimony does go to what your previous witness testified to, so I am going to allow her to express her opinion as to that previous topic.

Q. (By Ms. McBride) Okay. So could you please describe what you feel is going on out there, so to speak, as far as ground water? What are those -- the wells that we have identified as down gradient, what are they measuring?

A. I believe the down gradient wells, especially G105 and G106, are in an unconfined zone that is perched above the bedrock and is recharged by rainwater and by some ground water and by any leachate coming out of the landfill. I don't think that there is a continuous confined permeable zone overlaying the entire bedrock that connects all these wells and discharges into Sandy Creek.

I don't know if the ground water on the west side discharges into Sandy Creek or just under it, but the shallow water, ground water is flowing to the west. I would agree with that.

I guess the difference of opinion I have, another difference of opinion would be G103 and is it isolated from the other wells or connected. Because if you are going to have the ground water flowing up hill along the bedrock, which is a very common phenomenon, there is nothing unusual about that, but you have to have something to connect it. If you have a permeable zone connecting all the wells, yeah, and if it is confined, yes, I would agree. But I don't see that the data supports that in this case, based on the boring logs. There is no -- there is no

continuous permeable zone. There is an interface between the bedrock and the silty clay, and I agree that there is ground water on top of the bedrock, because it is saturated above the bedrock.

I believe that the down gradient wells, like I said, are in a saturated zone, but it is in an unconfined zone and it is going to the west. G103 appears to me to be isolated. The water is coming in from -- there might be a weather zone. I know we have -- there was some talk at one time about a weathered zone above the bedrock. That is common, too. If there is a weathered zone and it is permeable, yes, that could add water into the well. But just the fact that there is a one-foot sand and gravel zone, seam, whatever you want to call it, that's an obvious source of ground water that is coming into that well. It does not exist in the other borings.

So to me it looks like G103 is isolated and has about -- okay, you have got that sandy gravel layer at 96 and then you have got silty clay above it, which would be a confining unit separating it from the other wells.

Q. When you talk about the bedrock interface versus a permeable zone would you please describe further why you feel those might be two different things?

A. Well, interface, I guess, could be confined different ways. But from what I am gathering from the testimony I have

heard, it is the contact between what is above the bedrock and the bedrock, which could be as thin as a sheet. I don't know that silty clay on top of shale, that there is going to be any permeable zone in there for ground water to move at any substantial amount. The boring logs don't indicate that there is some permeable zone above the bedrock, I think. But there is water above the bedrock. But that does not mean that there is a continuous zone across the entire site.

At RCS, and this is in my report, I pulled some information or read some information at the RCS site. What they are monitoring is a sand/gravel bedrock rubble, and that is terminology from Andrews Engineering. And so that's one of the things I looked for on the boring logs, and I couldn't find it except for in G103. There is sand and gravel there. As far as the bedrock rubble, I don't know.

So if that is what they are monitoring at RCS, it does not appear to be at Jersey Sanitation in the boring logs. It is not evident. There is no terminology like that. Not that there has to be. But there has to be some indication that there is a zone there. Silty clay on top of shale or a mass of limestone, that does not indicate to me that there is a sand and gravel seam, because it does not say anything about sand and gravel.

Q. Now, in order to get an answer here as to, you know, what -- strike that.

What needs to be done at this site to assist in a determination as to --

MR. HEDINGER: Objection.

Q. -- whether that --

MR. HEDINGER: We didn't talk about anything like that. That is beyond the scope.

HEARING OFFICER SUDMAN: Can I hear the rest of the question, please?

Q. (By Ms. McBride) What kind of fieldwork can be done to make a determination as to what the up gradient well should be out there?

MR. HEDINGER: Objection. She -- I mean, that is clearly beyond anything that we covered this morning. And, moreover, if it was an opinion that she didn't share with us in September, then it is clearly undisclosed. And I believe that, on the other hand, that she did talk about that very issue in September. Redirect is not a time -- or rebuttal is not a time to patch holes in the case-in-chief.

HEARING OFFICER SUDMAN: Well, I think it relates back to the testimony that Mr. Liss gave. So I am going to allow her to answer.

MR. HEDINGER: Mr. Liss was talking about the ground water constituents. He was talking about the -- whether there was a trend, not about whether the ground water monitoring system needs

to be in any way modified. That was Mr. Hunsberger.

MS. McBRIDE: I am going to withdraw this particular question.

HEARING OFFICER SUDMAN: Okay. Thank you.

Q. (By Ms. McBride) What kind of field work can be done at the site to provide factual information as to the ground water flow that should be monitored at the site?

MR. HEDINGER: The same objection. I mean, anything that she is answering now should have been what was introduced as evidence and what she thought needed to be done back in September after we had our first hearings.

MS. McBRIDE: If I could respond to that, I did ask Mr. Hunsberger what kind of field work was done to confirm what -- if any field work had been done or what kind of field work could be done to confirm that this was a continuous zone, and this is what I am, you know -- I will rephrase it again. I will strike and rephrase.

Q. (By Ms. McBride) What kind of field work can be done to confirm the ground water zones at this site so we are measuring the proper permeable zone, the proper ground water, is what I am looking for?

MR. HEDINGER: The same objection.

HEARING OFFICER SUDMAN: Okay. You can answer.

THE WITNESS: Drilling operations and you could possibly

use a geoprobe, which is a less expensive method to do the drilling if you didn't want to use a regular drilling rig. But either way, regardless, the geology needs to be defined better, if someone wants to prove there is a continuous zone, that is. The samples need to be -- the soil and the glacial tills need to be reviewed by a geologist on site through some kind of drilling operation.

Also, I would recommend doing field slug tests to see what the hydraulic conductivity is for the zone that is being monitored. Because at RCS they did do an extensive investigation, but it included slug tests and they determined the hydraulic conductivity of the zone they are monitoring. So if you did that it might give you some more information to work on, if you are not getting the same hydraulic conductivities, which is the measurement of the ability of the formation to transmit fluid related to permeability. If you are not getting the same kinds of hydraulic conductivities that could give you an indication that it is not the same zone. Or if you are getting similar ones, then it could be an indication that there is a similar zone.

Q. So you would use a geoprobe to go out and get additional soil and -- soil information basically?

A. Well, or a drilling rig. Somehow you need to re-examine the sediments and if -- to see if there is a permeable zone

there. So that would take visual examination, because to me the boring logs with the current descriptions are not adequate to prove that there is a permeable zone throughout the site.

Q. Okay. Then I had one more question with regard to Mr. Liss' testimony with regard to Exhibit 16.

A. Okay.

Q. With regard to the data that you are using -- let me back up again.

I believe we have had prior testimony, but are you familiar with that exhibit?

A. Yes.

Q. And why is it that you are familiar with that?

A. I prepared it.

Q. Now, with regard to the data that -- is there data that was provided from the facility itself utilized in that exhibit?

A. Yes.

Q. Can you tell us how you acquired that data?

A. That is from the Agency's ground water database, which is comprised of facility submitted information from our permit section.

Q. Okay. How did you go about acquiring information from Jersey from that system?

A. I contacted Bur Filson and he sent me the data.

MR. HEDINGER: Objection. That is hearsay. Whatever Bur

Filson sent is something Bur Filson should be testifying to and not Ms. Nelson. We don't know what he sent.

HEARING OFFICER SUDMAN: I'm sorry. You said you contacted that you -- he sent you something, or you sent him something?

THE WITNESS: I requested the data in electronic form from Bur Filson because he is the person in charge of the -- distributing ground water information in the permit section.

HEARING OFFICER SUDMAN: Well, I don't think it goes to the truth of the matter asserted. She is just talking about how she put together the report.

Is that correct?

THE WITNESS: Yes.

Q. (By Ms. McBride) Okay. Did you request all of the available data or did you --

A. Yes, a couple of different times because there was some data missing.

MR. HEDINGER: Okay. So now I am going to object because now the testimony is for the truth of the matter asserted that she had all data. Presumably this is being offered to prove that all data the permit section had was given to Ms. Nelson. But we need Bur Filson to testify to that, not Ms. Nelson, because she is the recipient of that communication, not the maker of it. That's an out-of-court statement from Bur Filson that here is all of the information we have. Presumably that's what we are up to.

HEARING OFFICER SUDMAN: She is just talking about -- what was the question, Ms. McBride?

MS. McBRIDE: Did she request all data available, that might be available on Jersey Sanitation.

HEARING OFFICER SUDMAN: And you are trying to establish foundation for how she compiled the report?

MS. McBRIDE: Right.

HEARING OFFICER SUDMAN: I am going to allow you to continue.

Q. (By Ms. McBride) Okay. So is it your belief that you had in the compilation of that report all of the data that the Agency had available on Jersey Landfill?

A. Yes. Some of it was in paper form, and I would have to look at the exact dates. But I think the 2002 data was given to me in paper form and it -- but the facility does not submit paper since then anyway. At least in 2003 no paper has been submitted and we are all electronic now. So, you know, the older data you go to a paper file and look at it to see if it was submitted and stamped in. Now it is all electronic.

Q. But according to your belief, you had all of the information that the Agency has available for this site?

A. Yes.

MR. HEDINGER: I am going to object as to what was her belief. It is fact or not, and I don't think Ms. Nelson's belief

is relevant.

HEARING OFFICER SUDMAN: Overruled.

MS. McBRIDE: I have nothing else right now.

HEARING OFFICER SUDMAN: Okay. Mr. Hedinger?

CROSS EXAMINATION

BY MR. HEDINGER:

Q. Ms. Nelson, you don't work in permits, do you?

A. No.

Q. Never have, have you?

A. No.

Q. This is a permitted facility, right?

A. Yes.

Q. That means somebody, an engineer somewhere, maybe a geologist reviewed this file, right?

A. Yes, presumably.

Q. And they never asked you your opinion, did they?

A. Not directly.

MS. McBRIDE: Objection. Broad. General. What opinion?

Q. (By Mr. Hedinger) Did they ask you whether a permit should be granted for this facility?

A. They may have. I don't remember if the permit application came across my desk or not. The permit section -- we get a copy of the permit application at the field and we are asked to comment on it, but we are not required to. So they

indirectly do want our input. If for some reason we don't have the resources or the time to look at the permit application we are not required to do so, because we know the permit section will. That's their job.

Q. So you don't recall ever looking at this ground water monitoring system before it was put into place?

A. No.

Q. As far as you are aware has anybody in the permit section ever agreed with your opinions that you have expressed today?

A. They have not given me any feedback.

Q. They have not given you any feedback. Have you ever shared this with any other professional geologist? Have you ever discussed this opinion?

A. At what time?

Q. Oh, aside from the professional geologists that are in the room today, any other time?

A. Yes.

Q. Okay. Which professional geologists?

A. Sherry Otto.

Q. Who is she?

A. She works for the Bureau of Land, and she used to be in charge of the Agency's two drilling rigs and the drilling program. And she, for many years, installed wells and

characterized geology at Super Fund sites and now she is a quality coordinator. But she is a licensed professional geologist.

Q. You talked to her about the opinions that you shared with us today?

A. Yes.

Q. When did you talk to her?

A. Probably about a month ago.

Q. A month ago?

A. (Nodded head up and down.)

Q. Okay. So you have had this opinion for at least a month?

A. Which opinion are you referring to?

Q. The ones that you just shared with us today about --

A. Well, it was stated in my 1994 report my opinion about G103. So, yes, I have had this opinion for a long time.

Q. You have had this opinion about this sand lens or this lens at 96-foot level that somehow throws this data off, you have had that since 1992?

A. No.

Q. When did you get that one?

A. I was forced to look closer at the boring logs when someone disagreed with my geologic opinion, because I had to look for the zone that they were talking about on the boring logs and

it wasn't there. But I did happen to see the one-foot sand and gravel zone.

Q. You are not practicing as a professional geologist right now either, are you?

A. No, I am not.

Q. So the two people that looked at this are not practicing as professional geologists right now, correct?

A. I also --

Q. Yes or no, please.

MS. McBRIDE: Objection. Arguing with the witness. Bantering.

HEARING OFFICER SUDMAN: Please --

MR. HEDINGER: It is a yes or no answer.

HEARING OFFICER SUDMAN: It is a yes or a no question. Please --

THE WITNESS: I can't testify --

Q. (By Mr. Hedinger) Just yes or no, please.

A. -- to what Sherry Otto does fully. I don't know that she is not practicing geology. I don't know.

Q. Well, you just testified that she wasn't.

A. She is -- her title is a quality coordinator. I don't know that she never practices geology anymore.

Q. All right. We will move on.

A. I also discussed it with another geologist who is

practicing geology.

Q. The RCS Landfill was permitted under the 811 standards, correct?

A. Correct.

Q. Jersey Sanitation is an 807 landfill, correct?

A. That is my understanding.

Q. It is your understanding. You don't know that, though?

A. Yes, I think it is an 807 site.

Q. Okay. The 811 standards are -- would you say it is a fair characterization that they are more stringent than the 807 standards?

A. Yes.

Q. So you expect more ground water analysis even before a landfill is built under 811, correct?

A. Yes.

Q. When you have this -- a lens of permeable material, I think is what -- is that basically what you were talking about at this 96-foot level?

A. It is a zone. I don't know what shape it is, if it is a lens or what. But there is a zone.

Q. Okay. You know that it does not stretch for the entire site?

A. Yeah, to the west anyway.

Q. What do you mean? Yes, you know it does not, according

to the --

A. According to the boring logs, correct.

Q. Okay. What else do you know about this lens? How wide is it?

A. I don't know.

Q. It might not go the whole way across any direction, correct?

A. I don't know where it goes and where it doesn't go.

Q. All right. Then -- well, okay. Let's talk about the interface with the bedrock. You said you don't know what is down there, right? If I understand you correctly, you don't know what kind of material or at least how thick it is just at the interface?

A. I know what the boring logs say.

Q. The boring logs don't show enough of any particular kind of material to say that it is all the same material across the site?

A. No, not a permeable material.

Q. This is a different condition than what you understand the RCS condition to be?

A. According to what has been submitted, yes.

Q. Even though they are adjacent to one another, they apparently have different characteristics right there at the bedrock interface; is that your testimony?

A. Yes.

Q. But there is water at that interface? You said that, right?

A. Yes.

Q. So I guess I am still a little confused as to why you think G103 is impacted by this zone that you are talking about. Could you explain that again for us?

A. Impacted by what zone.

Q. The zone at the 96 foot level?

A. Because the screen intersects it. The screen has holes, slots that allows water to come into the well. A sand and gravel zone would be saturated with water, and it would enter the well. It is under -- you know, it is not -- it is in the saturated zone, so it is going to flow into the well.

Q. You said as far as G105 and G106 that those are perched in a confined zone? That's what your --

A. No.

Q. Okay. Say it again.

A. Perched and unconfined.

Q. Oh, and unconfined. Okay. There is no continuous lens that is discharging into Sandy Creek?

A. Not that I can tell from what has been submitted in the report.

Q. Geologically wouldn't you expect that a creek bed would

be a drawdown point?

A. If it -- yeah, it is typical that the shallow ground water in Illinois flows towards streams. It does not necessarily flow into the stream. It depends. The stream may be intermittent, which means the ground water level fluctuates up and down. And when it is up high enough it will flow into the stream. If it is under the stream, it is not going to discharge. It is going to be a dry stream. I don't know if Sandy Creek is a perennial stream or an intermittent stream.

Q. Why do you think that the guys in the permit section didn't see all of this stuff?

A. All what stuff?

Q. Well, all these problems with this ground water monitoring system.

A. I --

MS. McBRIDE: I would object. Speculation. We have already established that she has never worked in permits.

MR. HEDINGER: Yeah, but the --

HEARING OFFICER SUDMAN: Sustained.

Q. (By Mr. Hedinger) But the EPA has approved this, right, the EPA permit section?

A. Yes.

Q. They are the ones with the authority to approve it, aren't they? Karen Nelson does not have authority to approve

this, did she?

MS. McBRIDE: I would object. I thought the objection had been sustained.

MR. HEDINGER: This is a different question.

HEARING OFFICER SUDMAN: I think it is a different question.

MS. McBRIDE: (Inaudible.)

THE COURT REPORTER: I'm sorry. I didn't hear you.

Q. (By Mr. Hedinger) The permit section is the section that has the authority to approve this, correct?

A. Yes.

Q. Field operations does not sign any permits, right?

A. No.

(Mr. Hedinger, Mr. Hunsberger and Mr. Liss confer briefly.)

Q. (By Mr. Hedinger) Who was it that you discussed these opinions with? What was her name again?

A. Sherry Otto.

Q. She has never been with the permit section in your knowledge, either, has she?

A. No. Oh, yes, she was.

Q. Was she? When was that?

A. She was acting manager after Ken Liss left.

Q. Okay. At the time that you discussed this with her?

A. No.

Q. Why didn't you discuss it with somebody in permits?

A. I don't recall.

MR. HEDINGER: Okay. I have no further questions.

THE WITNESS: And I can't say --

MR. HEDINGER: No further questions. We are done.

THE WITNESS: Okay.

MR. HEDINGER: I would like to renew my objection to this material. She had it for a month, these new opinions, and they never bothered to disclose them to me. Ms. McBride had the opportunity to depose my witnesses before today's hearing, and I think just basic decent practice would have given me the same opportunity. We should have had a supplemental disclosure and the opportunity. We had plenty of time. The depositions of these guys happened in late October. It is now mid January.

HEARING OFFICER SUDMAN: But you were aware that she was going to produce a rebuttal witness?

MR. HEDINGER: I had no idea that -- in the first place, no, I was not certain of that. She did mention something a couple of weeks ago about a rebuttal, but she did not say on what topic.

HEARING OFFICER SUDMAN: Okay.

MR. HEDINGER: So, no, I did not know these opinions.

HEARING OFFICER SUDMAN: All right. Well, your objection

is noted.

Do you have anything further, Ms. McBride?

MS. McBRIDE: With regard to the witness?

HEARING OFFICER SUDMAN: Yes.

MS. McBRIDE: Yes, I do have one question.

REDIRECT EXAMINATION

BY MS. McBRIDE:

Q. Ms. Nelson, when you are doing a ground water assessment, would the appropriateness of the up gradient well be a part of that assessment?

A. Yes.

Q. So above and beyond any permit requirements --

MR. HEDINGER: I would object. This is beyond the scope of my cross of Ms. Nelson.

MS. McBRIDE: I am going to wrap it up right now.

HEARING OFFICER SUDMAN: Okay.

MR. HEDINGER: Well, it is still beyond the scope.

HEARING OFFICER SUDMAN: Well --

Q. (By Ms. McBride) So whether or not this is a permit requirement, looking at this up gradient well, the appropriateness of the up gradient well might very well be a proper part of a ground water assessment with regard to remediation, correct?

A. Yes.

MS. McBRIDE: Okay. That's all I have.

HEARING OFFICER SUDMAN: Is that all?

MS. McBRIDE: That's it.

RECROSS EXAMINATION

BY MR. HEDINGER:

Q. Okay. So is it your testimony that it may be an appropriate ground water monitoring system for permit purposes but not for this assessment purposes? Are there two separate reasons why you have the ground water monitoring system?

MS. McBRIDE: Objection. She is not in permits. She has never been in permits.

MR. HEDINGER: Well, she just asked her --

MS. McBRIDE: I asked her with regard to a remediation program, not --

MR. HEDINGER: You said --

MS. McBRIDE: -- on what you are asking her to testify about.

MR. HEDINGER: You said beyond the reason for permits.

HEARING OFFICER SUDMAN: Okay. You can answer if you know.

THE WITNESS: What was the question?

MR. HEDINGER: Well, strike the question. We are done.

HEARING OFFICER SUDMAN: All right. Very good. Thank you, Ms. Nelson.

(The witness left the stand.)

HEARING OFFICER SUDMAN: Ms. McBride, do you have anything further to present for your rebuttal case?

MS. McBRIDE: No, I don't, but I want to confer for one minute, please.

HEARING OFFICER SUDMAN: Okay.

MS. McBRIDE: Okay. We have nothing further.

HEARING OFFICER SUDMAN: Okay. Thank you.

MR. HEDINGER: I would like to put on one more witness in response to the rebuttal. I will need a few minutes to talk to him and see what we need to put on in terms of these new opinions that have been projected for the first time.

HEARING OFFICER SUDMAN: Okay. Well, let's take a five minute break.

(Whereupon a short recess was taken.)

HEARING OFFICER SUDMAN: Okay. We are back on the record. Mr. Hedinger is recalling Mr. Hunsberger.

Ms. McBride?

MS. McBRIDE: We just -- I feel this absolutely should not go forward. We are objecting. You know, we are fully entitled to put on a rebuttal witness who is going to respond, you know, to their expert's testimony, particularly since it is a full reference to her opinion. She was just articulating her response, which is the typical scope of a rebuttal witness.

That was not a new opinion. In no way would I look at that

as a new opinion. It was an articulation of what happened when she looked at these maps and these boring logs and why she came up with the opinions that she did. And she articulated a response to what Mr. Hunsberger had testified to. So that was not new opinion.

By no means should this be allowed to go forward, a surrebuttal witness. There is no grounds for it. There is no precedent for it. We have the burden. We have the burden to put on, and that is why we have a rebuttal witness that we put forward. So I find this way out of line that we have another witness.

HEARING OFFICER SUDMAN: I --

MS. McBRIDE: He had every opportunity to depose our witnesses. There was nothing that kept him from doing -- you know, he didn't do a single deposition all the way along. As far as he has not been surprised by one bit of a data. This has just been an unbelievable, you know, abomination in that regard --

HEARING OFFICER SUDMAN: Okay.

MS. McBRIDE: -- because none of this has been a surprise to him.

HEARING OFFICER SUDMAN: Okay.

MS. McBRIDE: He has the information.

HEARING OFFICER SUDMAN: Okay, Ms. McBride. I understand your objection. I am allowing Mr. Hunsberger to be called for

purposes of clarification.

This is a new one for me, too, procedurally. So we will see what the Board has to say about it. I am hoping that you are just going to clarify a few --

MR. HEDINGER: We are going to cover, I think, basically two issues that had not previously been raised until Ms. Nelson took the stand a few minutes ago. So, yes, it will be isolated to those two issues.

HEARING OFFICER SUDMAN: Okay. Mr. Hunsberger, I will remind you that you are still under oath.

THE WITNESS: Yes.

(Whereupon the witness was previously sworn by the Notary Public.)

B R A D L E Y H U N S B E R G E R,

having been previously duly sworn by the Notary Public, and saith as follows:

DIRECT EXAMINATION

BY MR. HEDINGER:

Q. Now, Mr. Hunsberger, you were in the room when Ms. Nelson provided her rebuttal testimony a few minutes ago, correct?

A. Yes, I was.

Q. Okay. You heard her testimony concerning about this one-foot zone of sand and gravel at about the 96-foot level?

A. Yes, I did.

Q. Okay. Can you tell us your opinion of the relevance of that one-foot zone?

A. I think in the up gradient well it is not an irrelevant issue -- it is not a relevant issue. The first thing, it is in the till sequence. It is not sitting directly on top of the bedrock. That means that it was a deposit as part of the glacial clay, which indicates that in all probabilities it is not extensive. It is more of a sand seam, a stringer, or some sort of lens. That means it is very isolated. It becomes full of water.

When they are sampling that well -- there is 80 feet of water in that well. And that is going to take a lot of bailers to get it out. So it may seem like there is just water upon water. But in reality there may not be. Anyway --

MS. McBRIDE: Can I ask what you are referring to there? I mean, does he have notes in front of him?

THE WITNESS: These are just -- yes, I don't need them. They are just notes.

MR. HEDINGER: Are you objecting to those?

MS. McBRIDE: Yes.

THE WITNESS: Okay. I will --

MR. HEDINGER: Okay. Remove the notes.

HEARING OFFICER SUDMAN: You can just give them to me for

now, sir.

THE WITNESS: Okay. Sure.

(The witness passing documents to the Hearing Officer.)

Q. (By Mr. Hedinger) So to continue, though, you said there is 80 feet of water there?

A. Right. Responding to the comment that Ms. Nelson was not sure how much water they pulled out of the hole, but it seemed like a lot. Well, 80 feet of water is a lot, particularly if you account for the sand packed around the well. So that does not insinuate that there is a lot of recharge from the sand zone, which then corresponds with it can potentially be very isolated. Once it saturates these isolated pockets, stringers, seams, whatever they are, they don't transmit water because they are hindered by the hydraulic conductivity in the adjacent material, which is the silty clay.

Anyway, having said that, the purpose of G103, obviously, is to provide ground water samples up gradient to the facility unaffected by any of the landfill affects, if there are any. And in review of Complainant's Exhibit 16, which I believe is the correct document, I don't recall seeing any analytical results that show that there were exceedances in that up gradient well. So from an environmental perspective, if you are comparing up gradient quality, ground water quality, to down gradient ground

water quality, you want to have as clean of a well as possible. That is conservative from the Agency standpoint. And that appears to be what is in there.

So not only from the geologic perspective, but also from the ground water quality perspective, it appears that G103 is an adequate up gradient monitoring well for the facility. And there should be no further evaluations to replace that well.

Q. Okay. You also heard Ms. Nelson's testimony that the bedrock interface, there is not enough data to support the suggestion that the bedrock interface is the same across both the RCS and the Jersey Sanitation facilities. Do you recall that testimony?

A. Yes, I do.

Q. Do you agree with that?

A. No.

Q. Why?

A. It generally is consistent from what I have personally seen come out of the bore holes myself. There is a weathered zone on top of the bedrock. Overlying the bedrock is a thick sequence of low permeable clays. So what you get is the movement of ground water laterally at that interface at two to three maybe four orders of magnitude higher than what you get vertically through the clay material. That is the zone that you want to monitor.

Anything that would theoretically seep out from the landfill is going to have to migrate through this low hydraulic conductivity clay before it reaches the bedrock interface. Once it reaches there, it is going to move advectively and maybe through diffusion with the gradient of the ground water. That is what, then, the monitor wells on the down gradient side are designed to pick up.

Q. Okay. So, again, what is your opinion concerning the propriety of using the bedrock interface as the monitoring zone?

A. It is my opinion that that is the target zone that you want to have the screens at for the monitoring program.

MR. HEDINGER: No further questions.

CROSS EXAMINATION

BY MS. McBRIDE:

Q. Mr. Hunsberger, have you ever been on site at the Jersey Landfill when they did borings?

A. I have not.

Q. So what you are referencing is what you witnessed or experienced at RCS; is that correct?

A. That is correct.

Q. At that landfill we are talking about bedrock rubble, we are talking about a sandy gravel zone that you experienced at that landfill; is that correct?

A. That is correct.

Q. You have no personal experience with regard to personal, in the field experience with regard to Jersey; is that correct?

A. That is correct.

Q. Okay. With regard to the reference you made to the water that was -- that the EPA experienced in that well during the 1994 sampling, do you remember you made some comments with regard to that?

A. If it relates to Exhibit 16 --

Q. All right. Strike that.

(Ms. McBride and Ms. Nelson confer briefly.)

MS. McBRIDE: Okay. We don't have anything else.

MR. HEDINGER: Nothing further.

HEARING OFFICER SUDMAN: Thank you.

(The witness left the stand.)

HEARING OFFICER SUDMAN: Okay. Does anyone have anything else to say before we get to closing arguments and discussion of the briefing schedule?

Okay. Then we will go off the record to discuss the transcript availability and the briefing schedule.

(Discussion off the record.)

HEARING OFFICER SUDMAN: All right. We are back on the record.

We have just had an off-the-record discussion regarding posthearing briefs. The transcript will be available from the

court reporter by January the 23rd of 2004, and should be posted on the Board's website by January the 26th of 2004.

The public comment deadline is January the 30th. Any public comment must be filed in accordance with Section 101.628 of the Board's procedural rules.

The parties have agreed to a briefing schedule as follows: The Complainant's brief will be due March the 15th of 2004.

And the Respondent's brief will be due April the 26th of 2004.

The Complainant's reply, if any, will be due May the 10th of 2004, and the mailbox rule will apply.

All right. Ms. McBride, would you like to make a closing argument?

MS. McBRIDE: I am going to reserve it for briefs.

HEARING OFFICER SUDMAN: Mr. Hedinger?

MR. HEDINGER: We will reserve, as well. Can I just ask, did you say January the 30th for public comments?

HEARING OFFICER SUDMAN: Yes. I can extend that if you know of any --

MR. HEDINGER: No, I just wanted to make sure I got it down. Well, let's see. I guess that's true. That is not even 30 days, is it?

HEARING OFFICER SUDMAN: No. We usually -- I mean, I could give 30 days.

MR. HEDINGER: Well, I guess I would ask for 30 days.

HEARING OFFICER SUDMAN: Okay. The public comment deadline will be February the 26th of 2004. That is one month after the transcript is posted.

Okay. I will note again for the record that there are no members of the public present.

I will proceed now to make a statement as to the credibility of the witnesses testifying during this hearing. Based on my legal judgment and experience, I find all of the witnesses testifying to be credible.

At this time I will conclude the proceedings. We stand adjourned. Thank you all for your participation.

(The hearing exhibits were retained by Hearing Officer Sudman.)

STATE OF ILLINOIS)
) SS
COUNTY OF MONTGOMERY)

C E R T I F I C A T E

I, DARLENE M. NIEMEYER, a Notary Public in and for the County of Montgomery, State of Illinois, DO HEREBY CERTIFY that the foregoing 104 pages comprise a true, complete and correct transcript of the proceedings held on the 13th of January A.D., 2004, at 1021 North Grand Avenue East, Springfield, Illinois, in the case of People of the State of Illinois v. Jersey Sanitation Corporation, in proceedings held before Hearing Officer Carol Sudman, and recorded in machine shorthand by me.

IN WITNESS WHEREOF I have hereunto set my hand and affixed my Notarial Seal this 21st day of January A.D., 2004.

Notary Public and
Certified Shorthand Reporter and
Registered Professional Reporter

CSR License No. 084-003677
My Commission Expires: 03-03-2007