BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

IN THE MATTER OF:	)	
	)	
SITE SPECIFIC PETITION OF MOBIL OIL CORPORATION FOR RELIEF FROM 35 ILL. ADM. CODE 304.122, AMMONIA NITROGEN EFFLUENT STANDARDS	)	R97-28

The following is the transcript of a hearing held in the above-entitled matter, taken stenographically by GEANNA M. IAQUINTA, CSR, a notary public within and for the County of Cook and State of Illinois, before Audrey Lozuk-Lawless, Hearing Officer, at 375 West Briar Cliff, Bolingbrook, Illinois, on the 2nd day of July, 1997, A.D., commencing at 11:00 o'clock a.m.

A P P E A R A N C E S:

HEARING TAKEN BEFORE:

ILLINOIS POLLUTION CONTROL BOARD
100 West Randolph Street
Suite 11-500
Chicago, Illinois 60601
(312) 814-6923
BY: MS. AUDREY LOZUK-LAWLESS

ROSS & HARDIES,
150 North Michigan Avenue
Chicago, Illinois 60601
(312) 750-8687
BY: MR. DAVID L. RIESER

Appeared on behalf of Mobil Oil Corporation,

ILLINOIS POLLUTION CONTROL BOARD MEMBERS PRESENT:

Dr. Ronald C. Flemal

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY MEMBERS PRESENT:

Ms. Margaret P. Howard

Mr. Steven E. Vance

I N D E X

E X H I B I T S

MS. LOZUK-LAWLESS: Good morning. My name is Audrey Lozuk-Lawless, and I'm the hearing officer in this proceeding.

Seated to my right is Dr. Ronald Flemal. He is a presiding board member in this proceeding, which is entitled In The Matter of Site Specific Petition of Mobil Oil Corporation for Relief from 35 Illinois Administrative Code Part 304.122, Ammonia Nitrogen Effluent Standards.

The Board has docketed this petition as R97-28. Therefore, if you plan to file any documents with the Board or comments, please do include that reference number, R97-28.

This is currently the only scheduled hearing in this matter, and it will be governed by the Board's procedural rules for regulatory hearings, which are found at 35 Illinois Administrative Code 102.282, which means that any information which is relevant and not repetitious or privileged will be admitted into the record.

Please realize that if you are a witness who's testifying, you will be sworn in and subject to cross-questioning by any other person in the room today.

This proceeding is a site-specific rulemaking, which was filed by Mobil Corporation on April 24th, 1997.

At today's hearing, we will proceed with Mobil's counsel giving an opening statement by David Rieser. Then we will move to an opening statement by the Illinois Environmental Protection Agency, Margaret Howard. Then we will go back to Mobil to present its proposal.

Currently, Mobil has filed -- prefiled the testimony of three witnesses. Those witnesses are Lilliana Gachich, James Huff, and John Koon. Those prefiled testimonies will be marked as an exhibit and attached to the transcript as if read.

The witnesses will then proceed and give oral summaries of that prefiled testimony, after which, we will turn and ask if there's anyone in the room who would like to ask questions of any of the witnesses which have presented their testimony today.

Then we will turn to the Agency, and if they decide that they would like to put on anyone as a witness, then we will proceed there.

At this point, if there's anyone in the

public that would like to give any statements on the record, it's their opportunity to do so, and, again, I remind you that you'll be sworn in and then subject to cross-questioning.

If you would not like to proceed in this manner, you can certainly file a public comment with the Board. The Board record will remain open after the transcript is received, and you can file a public comment to the Board, and, again, please reference R97-28.

And note that any questions that Dr. Flemal or myself ask during this proceeding are not to convey any bias or preconceived notions about the proposal before us, but simply to make a complete record for the other board members who are not present with us today.

Any requests for additional hearings will be dealt with at that time. If you would like to make a request for an additional hearing, please look to the Board's procedural rules at 35 Illinois Administrative Code 102.161, which requires that the proponent or any other participant who wishes to request an additional hearing demonstrate in a motion to the Board that failing to hold an

additional hearing would result in material prejudice to the movant.

Okay. So then at this time, Dr. Flemal, would you like to say anything?

DR. FLEMAL: Perhaps just briefly. Usually, at this point, I like to make just a small statement describing the nature of the Board and the role that the Board has in establishing the environmental standards for the state of Illinois.

I'm going to forgo that this morning, in the main part at any rate, realizing that the people in attendance here are well -- in general, well-familiar with the Board and the role it does play.

I would note simply that the record that we presently have before us in terms of the petition and the prefiled testimony plus any record that we develop today and subsequently through a public comment period will be reviewed in its entirety by the members of the Board, myself and the other six board members, upon which the Board will make a determination as to the continuing or, perhaps, noncontinuing disposition of this petition.

Assuming that it does continue, the Board

may move, at that stage, to move the petition to first notice or as we have received the petition or in some modified form.

I would anticipate that that action would be before the Board probably during the month of August. We have two meetings during that month, and I would hope that, perhaps, at one of those meetings the Board could be looking at that decision regarding this petition.

Other than that, let me simply welcome everybody to the process. We appreciate your contributions to it and look forward to having the record well-developed in this matter.

MS. LOZUK-LAWLESS: Thank you, Dr. Flemal, and I would add that as I mentioned, you will be able to file any comments that you would like while the record is open, and this record will close on July 28th, and the mailbox rule does not apply. Therefore, the Board has to receive your comments by July 28th.

So, Mr. Rieser, would you like to give an opening statement, and, I'm sorry, but also before you give your testimony, please do speak loudly and clearly and introduce yourself before you begin so

the court reporter has an accurate record. Thank you.

MR. RIESER: Thank you very much. My name is David Rieser. I'm with the law firm of Ross & Hardies, and I'm here on behalf of Mobil Oil Corporation, which has filed a petition to seek site-specific regulatory relief from 35 Illinois Administrative Code 304.122. This is the effluent standard for ammonia nitrogen.

This is what I hope is the end of a long process that Mobil, the Agency, and the Board have been involved in to find appropriate regulations to limit ammonia nitrogen effluent from this refinery.

Mobil previously filed and obtained a site-specific regulatory relief at R84-16, which was codified at 35 Illinois Administrative Code 304.214 and was generally in compliance with the standard that was described in this regulation.

However, as the testimony will describe today, additional treatment requirements different than traditional treatment was required as a result of other regulatory requirements that inhibited the nitrification processes that were allowed to exist at the refineries existing configuration.

Mobil has sought and obtained two variances from the Board to study the problem further and to determine whether or not further upgrades and additional treatment could be applied to consistently comply with the Board's ammonia nitrogen effluent standard.

The findings of those studies, as will be discussed today, are that consistent compliance cannot be achieved without significant additional expenditures of money and that the additional treatment would also have certain environmental impacts that would not be worth the additional compliance level with ammonia nitrogen.

So we are here today to ask for permanent relief based on the current high levels of treatment that are currently being afforded by the refinery.

We have three witnesses, as was pointed out. Ms. Lilliana Gachich will testify regarding the facility and the plant operations and the results of the studies that were performed during the variance proceeding.

Dr. John Koon from Parsons Engineering Science will testify regarding an intensive report he performed regarding the treatment being afforded

the refinery, the treatment facilities there, alternative treatment strategies and their costs, and come to the conclusion, which I've stated, which is that further treatment to consistently meet the standards would be technically infeasible and economically unreasonable.

Finally, James Huff will testify regarding the lack of environmental impact associated with the relief which Mobil seeks, that the water quality of the -- the receiving stream of the Des Plaines River is currently sound, that the relief sought by Mobil will not affect the water quality in any degree, and that there will be no environmental impact associated with the relief being granted.

I'd like, with the Board's permission, to call the witnesses as a panel, have them identify their testimony and summarize it verbally, as we discussed, and then be available as a panel for questions, although I'm sure individual questions, as they come up during the course of the testimony, could certainly be asked of the individuals.

MS. LOZUK-LAWLESS: Thank you, Mr. Rieser.

Ms. Howard, do you have an opening statement?

MS. HOWARD: Yes. My name is Margaret Howard, and I'm attorney with the Illinois Environmental Protection Agency, and with me I have Mr. Steve Vance of the Agency's Bureau of Water Planning Section, and Mr. Vance and I have been involved with this case since the spring of 1996 dealing with Mobil's latest request for the variance, and now there's been a request for the site-specific relief, and we have reviewed the testimony that they are presenting today of their three witness along with data that Mr. Vance and Ms. Gachich went over, and at this time, given anything that comes up during this hearing at this time, we are in agreement with what Mobil is requesting from the Board.

MS. LOZUK-LAWLESS: Thank you. Thank you, Ms. Howard.

Therefore, Mr. Rieser, if you'd like to present your witnesses in a panel form, then if the court reporter could swear them all in at one time.

(Witnesses sworn.)

MR. RIESER: The first witness who will testify will be Ms. Lilliana Gachich. A copy of her testimony was prefiled. I'd like it to be -- I'm going to show it to her and have it marked as an

exhibit, if I can.

Would you mark that as Exhibit 1, please?

(Exhibit No. 1 marked
for identification,
7-2-97.)

MS. LOZUK-LAWLESS: The prefiled testimony of Ms. Lilliana Gachich will be marked as Exhibit No. 1 and entered into the record.

Thank you, Mr. Rieser.

MR. RIESER: Ms. Gachich, I'm going to show you what's been marked as Exhibit 1 and ask if you can identify this, please?

MS. GACHICH: Yes, I can. I prepared the testimony and the attachments.

MR. RIESER: All of the attachments that are included in the testimony were prepared by you?

MS. GACHICH: By me.

MR. RIESER: And they accurately reflect the information that's described therein?

MS. GACHICH: Yes.

MR. RIESER: Could you briefly summarize your testimony, please?

WHEREUPON:

L I L L I A N A G A C H I C H,

called as a witness herein, having been first duly sworn, deposeth and saith as follows:

MS. GACHICH: Basically, my testimony is going to show the configuration of the waste water treatment plant in a simpler detail because Dr. Koon will go into deeper detail.

What I'd like to show and highlight is that Mobil's waste water treatment plant is a modern one, that it has highly segregated streams that the waste water or processed water is segregated from storm water or non-contact cooling water, and if you were to look at Figure 1, which gives you the flow diagram, you could then actually see that these streams are segregated and that the sampling is done upstream of where the two streams combine and are then together discharged to the Des Plaines River.

The lower middle part of Figure 1 actually depicts the discharge lines and the sampling points for different streams. So it does tell you that the individual streams are sampled upstream from where the total effluent combines, and it's discharged into a discharge split that Mr. Huff will talk about

later in his testimony.

Further to that, due to this highly segregated process water and process waste water treatment plant, I would like to point out that Mobil's effluent is highly concentrated, and it may, in essence, impede the treatment because we do not have as much dilution as some other plants of a similar nature would have.

However, environmentally speaking, it behooved us once to use lesser amounts of water and to practice water conservation, and we do subscribe to that.

Further, part of my testimony shows the historical performance of the waste water treatment plant since the inception of the refinery itself in 1973, and you can see a detailed presentation of that in Table 1 that shows ammonia historical discharge in an annualized average form as well as individual sample ranges.

Now, when I say individual samples, Mobil is required under the NPDES permit to measure ammonia in two weekly 24-hour composite samples.

So when you look at this column that gives you the range of performance, it actually tells you

that this would have been a measurement in an individual 24-hour composite sample, and then we have averaged those for a whole year to give you the annual average.

From the table itself, you can see that at the inception, the plant did not perform as well as one wished, and Mobil has spent quite a bit of money to improve the performance, and later on in Mobil's performance here, you can see that we have achieved very, very good performance and especially in the years of 1989 through 1992 -- '91, and after that.

Due to some of these regulatory required changes that Mobil had to implement, our performance has deteriorated, and, at that point, we applied for a variance from the effluent standards and obtained the variance, which the conditions of the variance actually required us to perform an optimization study, which we did, and to report to the Agency on a six-month basis as to what the findings were.

And the basic findings of the study were that it was the assumption that Mobil made that the implementation of the Benzene Reduction Unit, which was required under RCRA regulations, definitely increased the toxicity of the process waste water,

which subsequently caused the waste water treatment plant to not function as well.

Further to that, we found out also that the waste water treatment process itself creates -- during the process itself, the bacterial degradation creates certain chemicals that appear to inhibit the process itself. So it's sort of self-limited to some extent, and the combination of increased toxicity and self-limitation could definitely cause problems.

Further, we also found out that the waste water treatment plant, as it was in 1993, did not have sufficient air capacity, and after that finding was established, we applied for a permit from the Illinois Pollution Control Agency to obtain a construction permit and upgrade the waste water treatment plant, which we have.

We made some additional upgrades in the refinery itself to remove a stream that was also found to be detrimental to nitrification, and one of our -- of the exhibits in my testimony here Table -- Exhibit No. 2 lists the activities and mechanical improvements to the waste water treatment plant that Mobil actually implemented during the period of the

variance to date and shows that we spent about $7.7 million upgrading the waste water treatment plant and performing certain studies that we were required to do under the variance and that we also wanted to do so that we could improve the waste water treatment performance plant.

Finally, the current performance of the waste water treatment plant, and that is the performance after November of 1996, that was the date when the waste water treatment plant was completely upgraded, is very good.

We have had some incursions, and for some of those, we definitely have established a clause and have taken appropriate measures to remove the recurrence of those upsets and disturbances.

However, even when one removes the instances of known problems, we have unexplained deviation from what you could say very good performance. The only thing that we know of now and that we can contribute this to is the variability and the kind of crude that we process, and one of the exhibits in my testimony, Exhibit No. 8, actually summarizes on an annual basis the number of crudes that we process, and the amount of crude that

we process as well as the nitrogen content of those crudes.

If you'll just turn to the first page that shows January and February of '96, you can see that we process about 27 different varieties of crude oil. The crude oil is processed at different amounts.

It does not necessarily come to the refinery as a mixture of all these 27. We may get a large quantity of one for a couple of days. The next time, we may get a large quantity of some other one, but as you can see, the nitrogen content of these different crudes varies substantially.

You would have some crudes to have extremely low nitrogen content, say, four, five, 600 parts per million, and then you have others that go up to 4200 parts per million.

Now, when you are faced with maybe processing crude that has 4,000 parts per million versus the one that has maybe 500, you can see the difficulty in managing the waste water that results from this process, and there is no control that we can implement to average these crudes in such a way that you would have equalization or complete

equalization because they are shipped through the pipeline and then come in blocks.

When they come to a tank, there is a certain amount of mixing, but not enough because of the size of these shipments.

So what I would say at this point is that Mobil has spent the last several years spending a substantial amount of money, a substantial amount of effort to upgrade its waste water treatment plant, and has taken a very -- a lot of good measures to maintain the performance of the waste water treatment plant.

However, we are not able to consistently meet with the state's standard in spite of all our efforts and in spite of spending a sizable amount of money to try to achieve that, and that's the reason why we're here today hopefully to achieve some relief because spending more money, as Mr. Huff will testify to, will not improve the condition of the receiving water.

MS. LOZUK-LAWLESS: Let the record reflect that Exhibit No. 1 does include all the tables and exhibits that Ms. Gachich referenced in her testimony. Dr. Flemal?

DR. FLEMAL: I have several questions regarding specific parts of your testimony that I think would be useful if we address before we go on to the other witnesses that Mobil wishes to present.

The first question is in reference to Figure 1, which is Figure 1 attached to your testimony Exhibit 1, which is the schematic flow diagram.

I believe you indicated in your statement that if we look in the lower center, we'll see where the sampling points are respectively for the effluent sampling and the storm water; is that correct?

MS. GACHICH: You can see -- yes. You have -- treated water guard basin. Do you see that particular facility?

DR. FLEMAL: Yes.

MS. GACHICH: That is the process -- treated process water and last containment facility.

DR. FLEMAL: And you sample immediately downstream --

MS. GACHICH: Immediately downstream of that.

DR. FLEMAL: Is that then equivalent to outfall 001 in terms of --

MS. GACHICH: Yes, it is equivalent to outfall 001.

DR. FLEMAL: And then immediately below that in the diagram, I see storm water sampling point. Would that be equivalent to 002?

MS. GACHICH: That would be equivalent to 003.

DR. FLEMAL: 003, right?

MS. GACHICH: Yes. That is an intermittent stream only where we have storm water that's discharged on an intermittent basis.

DR. FLEMAL: Okay. And then I see then below that yet there's another stream. Is that --

MS. GACHICH: That would be 002.

DR. FLEMAL: Okay.

MS. GACHICH: And that continues discharge.

DR. FLEMAL: Is there sampling done of the 002 discharge on a regular basis or at all?

MS. GACHICH: The permit requires that we sample twice a week 001, 002, and together with 002, the river water intake because the standard is based on the net difference in TOC.

DR. FLEMAL: At this point, I don't believe we have actually within the record the NPDES permit that you're referring to.

MR. RIESER: Dr. Flemal, we have copies here, and we can -- I was prepared to introduce it as an additional exhibit right now when I can do that.

DR. FLEMAL: Wherever it's convenient in terms of getting it in the record. I'm sure it would be useful for the Board simply to have that available as a reference document.

MS. LOZUK-LAWLESS: Would you like to enter it into the record now?

MR. RIESER: Yeah. It had been my plan also to have Ms. Gachich go through some of the exhibits just to verify what information was in there, but if you're accepting them all as --

MS. LOZUK-LAWLESS: Under her prefiled testimony?

MR. RIESER: Under her prefiled testimony.

MS. LOZUK-LAWLESS: Because it is attached --

MR. RIESER: Okay.

MS. LOZUK-LAWLESS: -- that would be the easiest way to do it.

MR. RIESER: Okay. At this point then, I'd like to introduce -- have this marked as Exhibit 2.

(Exhibit No. 2 marked
for identification,
7-2-97.)

MS. LOZUK-LAWLESS: Let the record reflect that Mr. Rieser has moved for admitting Mobil's NPDES permit dated July 21st, 1994, into the record as Exhibit 2, and it has been so marked and admitted.

MR. RIESER: Ms. Gachich, I'd like to show you what's been marked as Exhibit 2, and ask if you can identify it, please?

MS. GACHICH: Yes. That is a current NPDES permit for Mobil Joliet Refinery.

MR. RIESER: And what you have in your hands is a complete copy of that?

MS. GACHICH: It's a complete copy of that.

DR. FLEMAL: Thank you. I appreciate getting it in the record. I think that will be useful for us.

A secondary question refers to Exhibit 1, actually for several parts of the testimony that you've submitted, but we can focus on it on Exhibit 1, and for the record, I'm referring to Ms. Gachich's testimony, which is Exhibit 1 in the record, and I'm referring to Exhibit 1 --

MS. GACHICH: Of Exhibit 1.

DR. FLEMAL: -- to Exhibit 1.

I believe you had explained this, but for my purposes, I just want to make sure I understand it. You were required to do two samples per week --

MS. GACHICH: That's correct.

DR. FLEMAL: -- of outfall 001 --

MS. GACHICH: That's correct.

DR. FLEMAL: -- under the current permit?

Those are composite samples --

MS. GACHICH: And those are 24-hour composites.

DR. FLEMAL: And -- okay. That was the question whether that composite period is over 24 hours?

MS. GACHICH: It's a 24-hour composite.

DR. FLEMAL: So all the raw data that we're looking at, the historical data for the ammonia nitrogen discharges are basically from that data set of the --

MS. GACHICH: That's correct.

DR. FLEMAL: -- two samples per week?

MS. GACHICH: Two samples per week of 24-hour composites.

DR. FLEMAL: Fine. Thank you. That helps me on that one. And the last area of questioning goes to the last part of your testimony.

You're referring to the flow of crude into the plant and directed us to a series of tables that are the last portions of Exhibit 1.

MS. LOZUK-LAWLESS: Exhibit 8.

DR. FLEMAL: Exhibit 8 to Exhibit 1.

Could you, for the purposes of just making sure we understand in the record, explain what the captions to the various columns are, what the abbreviations there stand for?

MS. GACHICH: Okay. All the way to the left of this table on the first page, you will see crude source, and we have crude source one, two, three, four, and so on to 27.

What I have done, I have removed the geological name of the crude, as you would be aware, for proprietary reasons. The rest of the table indicates -- the first column as we go to the right indicates the concentration of the nitrogen in what percent in parts per million of nitrogen in any given of these crudes.

So number one --

DR. FLEMAL: And that nitrogen -- excuse me. The nitrogen can be in any form. It's --

MS. GACHICH: It can be any -- this is --

DR. FLEMAL: It's elemental nitrogen.

MS. GACHICH: You element the total nitrogen, whatever the form may be. It could be variable, but it's a total nitrogen, and say crude one is 879 parts per million, then the next column says barrels per day, and it's a thousand barrels per day that we have may have processed or just the barrels per day. It gives the gravity of that crude, which also is one of the qualities of crude that one measures in the refinery.

DR. FLEMAL: When you say it gives the gravity of the crude, I'm sorry to interrupt, but the column headed API gives the --

MS. GACHICH: Stands for API gravity, which is the measure of density of the crude using API, American Petroleum Institute convention.

The next column says thousand pounds of crude, which just converts the barrels of crude, and this is a refining barrel, which is 42 gallons, and you have the gravity of crude, which converts in 2,000 pounds of crudes, and the last column then gives you the pounds of nitrogen that would be found in that amount of crude, and you can then see that for different crudes, each have different gravities,

and, of course, a different quantity of crude.

You can see that the amount of raw nitrogen in a thousand pounds would be 247 and so on all the way down to the bottom, which would add to about 3,027 pounds for crudes processed in January of 1996.

DR. FLEMAL: The abbreviation L -- MLBS is thousands of pounds?

MS. GACHICH: Yes. M stands for a thousand.

DR. FLEMAL: Thank you very much.

MS. LOZUK-LAWLESS: Thank you.

MR. RIESER: Ms. Gachich, I just want to direct you to a couple of your tables. Looking at Exhibit Roman Numeral V to Exhibit 1 is BRU influent/effluent LC 50 vs time. This is -- would you describe what this is?

MS. GACHICH: As I mentioned previously in my testimony, after Mobil installed Benzene Removal Units, which is referred to here as BRU, we experienced increase in toxicity to the waste water treatment plant.

What this table shows is using the MICROTOX analytical procedure, we were able to show that the waste water going into the BRU unit was less toxic

than the water coming out of the BRU unit.

What I'd like to point out to you is that the toxicity is inverse. So you can see that the influent shows a higher number, but the lower number indicates more toxicity, and you can see the two lines here, and you have the white line indicating the waste water that was flowing into the unit showing lesser toxicity than the waste water flowing out of the unit, which is the black solid line.

Further, what this table indicates all the way to the right from June on of '96, there was a shift altogether in both effluent and influent toxicity in this unit.

We believe that this was due to implementation of a benzene treatment unit, which was changed from using a caustic to a caustic-free method, and having found previously that the caustic for this particular unit had effects on the waste water plant and having implemented a completely different process removing the particular stream showed that there was a shift in toxicity, a decrease in overall toxicity even though the difference across the unit itself, the Benzene Removal Unit, did not change, but the total toxicity

underlying the process has shifted downward, in essence.

So implementing the particular unit did help improve the waste water treatment overall, but did not remove the existing toxicity that's created in this unit.

MR. RIESER: And then looking at Exhibit Roman Numeral VI and Exhibit Roman Numeral VII to your Exhibit 1, this is -- is it correct that these are graphic demonstrations of both the upset exceedances for which there is a known cause and exceedances for which there is no known cause?

MS. GACHICH: That's correct.

MR. RIESER: This will complete Ms. Gachich's testimony unless there are further questions specifically for her, but, obviously, she's available should other issues arise during the course of the testimony of the other two witnesses.

MS. LOZUK-LAWLESS: All right. If you'd like to go on with your next witness.

MR. RIESER: The next witness would be Dr. John Koon.

Would you mark this as Exhibit 3, please?

(Exhibit No. 3 marked
for identification,
7-2-97.)

MR. RIESER: I guess we'll mark this as Exhibit 4 while we're at it.

(Exhibit No. 4 marked
for identification,
7-2-97.)

MS. LOZUK-LAWLESS: Let the record reflect that the document entitled Site-Specific Ammonia Relief Petition Report for the Waste Water Treatment Plant Mobil Oil Refinery, Joliet, Illinois, prepared by Parsons Engineering Science has been marked as Exhibit No. 3 and entered into the record.

On the bottom of the first page, it does say Exhibit Roman Numeral VII, however, that will be Exhibit No. 3 for the record.

And let the record reflect that the testimony of John Koon, K-o-o-n, will be marked as Exhibit No. 4 for the record.

Mr. Rieser?

MR. RIESER: Thank you.

Dr. Koon, I'm going to show you what's been marked as Exhibit 3 and ask if you can identify

that, please?

DR. KOON: Yes. That's the report that I prepared for Mobil with respect to this hearing in this matter.

MR. RIESER: And is Exhibit 3 a complete copy of that report?

DR. KOON: Yes.

MR. RIESER: And was that report prepared under your direction and supervision?

DR. KOON: Yes, it was.

MR. RIESER: Did you prepare testimony to summarize for the Board, the -- this report that's included as Exhibit 3?

DR. KOON: Yes, I did.

MR. RIESER: I'm going to show you what's been marked as Exhibit 4, and ask you if that's your testimony?

DR. KOON: Yes, it is.

MR. RIESER: And attached to that testimony as an attachment is your -- the first attachment is a CV that describes your background and experience?

DR. KOON: That's correct.

MR. RIESER: Could you briefly summarize your testimony for us?

WHEREUPON:

J O H N H. K O O N,

called as a witness herein, having been first duly sworn, deposeth and saith as follows:

DR. KOON: I'd be glad to.

I was asked to work with the Mobil Refinery in Joliet to evaluate the waste water treatment system, specifically with regard to its ability to remove ammonia and more specifically with respect to meeting its ability to possibly meet the state of Illinois ammonia discharge limitation.

I spent time at the refinery. I also spent time in my offices evaluating data and records from the refinery associated with the waste water treatment system operation in writing this report and developing the conclusions and recommendations that are contained in it.

The report contains a description of the waste water treatment system. It outlines the several-unit processes that are included in the treatment system, both at the site of the terminal treatment system and some treatment units that are located upstream, as we say, in some of the refining units.

I won't go through these unit processes at this time unless there are specific questions, except to say that first of all these are processes that are applicable to the treatment of refinery waste waters, and second to say that if you go through the development document for the refining industry, the development document as issued by the U.S. Environmental Protection Agency, and if you look in this development document at the technology that was used as the baseline for best available treatment technology guidelines, these unit processes comprise the same or meet the model used by the EPA in developing BAT regulations.

That's not to say that this treatment system would meet BAT regulations, but the technologies employed are the same. In fact, the refinery does meet BAT regulations, and I will cover that in a few minutes.

Mobil has implemented a number of capital improvement projects over the years. They've also conducted studies to try and identify why the nitrification process in the treatment system does not provide complete nitrification on all occasions, and I will further discuss this work that they've

done.

There's several modifications which Mobil has made to the waste water treatment system over the years. Since 1990, there have been six such modifications that I have outlined in my testimony.

Let me briefly state what these are. The installation of a Benzene Removal unit, number -- this is number one. Number two is upgrading of an equalization basin to an aggressive biological treatment unit as required to be in compliance with RCRA regulations.

Let me go back and say that the Benzene Removal Unit was required to be in -- for the refinery to be in compliance with benzene NESHAPS, and gee, how is that spelled, N-E-S-H-A-P-S, I think. It's an acronym.

The number three modification was they switched to a caustic-free gasoline treating unit, which is named the Merox unit, M-e-r-o-x.

Number four, they upgraded the aeration basins -- a few aeration basins of the facility. They upgraded these from surface aerators to diffused aerators.

Number five, they completely upgraded the

clarifiers that are used in the activated sludge system.

Number six, they made extensive modifications to a dissolved air flotation system in the treatment unit, including adding additional instrumentation controls and an upgraded air dissolution system.

All of these processes or modifications that have been made are consistent with either meeting other regulations or updating and increasing the level of performance that could be expected from the treatment system, in this case, operating in an oil petroleum refinery.

There's several laboratory studies that have been conducted by Mobil to identify sources of inhibition or the reasons why the nitrification process in the refinery doesn't provide complete nitrification at all times.

There are three of these studies that I will mention briefly. Number one was a sour water stripper tail unit investigation. Mobil looked at developing a process that would remove inhibitory substances from the effluent of the sour water stripper.

They conducted laboratory-scale tests that proceeded to pilot-scale tests; however, the premise behind the operation of this unit proved false. In the pilot testing, the unit did not work as planned, and, therefore, further development of it was not pursued after they had gone through a fairly extensive treatment process -- testing process.

The second investigation was a MICROTOX study. Ms. Gachich referred to this investigation earlier. I will, therefore, only say that one of the conclusions from it was that toxicity of waste water to the nitrification process was increased across the Benzene Removal Unit, and nothing was identified that could be done about that, and, as I said earlier, the BRU is required to be in compliance with benzene NESHAP regulations.

The next investigation was an ammonia inhibition study. This was conducted to see if 15 waste water streams that were -- that go into and are treated in the waste water treatment plant might be inhibitory or contain inhibitory substances to the biological nitrification process and to evaluate several parameters, operating parameters, in the treatment system to see if they might be -- if the

system might be operated in a way that would be inhibitory to this process.

The principal finding of this investigation was the degradation products apparently in the biological treatment system were inhibitory to the very process that one of the processes that we're trying to sustain in the biological treatment system, i.e., the biological nitrification process.

This would explain why certainly at times the biological nitrification process does not provide complete nitrification of its waste water.

It also explained that we had complete nitrification. We completely removed ammonia from the waste water and could comply with the three milligram per liter state of Illinois standard. That's the importance -- therefore the importance of the nitrification process.

On Table 1 of my testimony, I've summarized the costs of the investigations and projects that Mobil has undertaken over the years in improving its waste water treatment system. It's very similar to a table in Ms. Gachich's testimony with the exception that we have -- in my testimony, I've also identified a line for improvements made from 1973

through 1990. It was $2.1 million to the total, and my table comes out just under $10 million, and I think that accounts for any differences in the numbers in those two tables.

We also conducted an evaluation of the waste water treatment system to see if -- to develop an opinion regarding the proper design and operation of this system. Table 2 of my testimony contains an evaluation of the removal efficiencies achieved for relevant parameters in the waste water, and with that evaluation, with -- by talking with operators at the treatment system, by evaluating operating manuals and design of the system, it's our conclusion that the system is properly designed and operated and is designed and operated in a way to promote biological nitrification, but that it does not consistently nitrify.

Based on this, it is our opinion that the ammonia levels above the Illinois effluent standard cannot be produced consistently within this operation.

We compare this treatment system to industry practices and guidelines. Table 3 in the testimony summarizes the BAT requirements that the

USEPA used as the basis of setting the BAT guideline numbers, and in the right-hand column of Table 3, we have summarized Mobil's practice with respect to this BAT model technology and have found basically that the Mobil Joliet system corresponds to the EPA BAT model.

In Table 4 of my testimony, we compared the effluent for the year 1996 from the Mobil Joliet Refinery with BAT effluent guidelines established by the USEPA, and in every case -- let's see. We valued there are eight parameters for which limits were established by the EPA. I believe there's probably a ninth pH that we didn't put on here, but for all eight listed in Table 4 and pH, the treatment efficiency of the Mobil Joliet waste water treatment system is well within the BAT limits established by the USEPA. The system easily meets the BAT requirements.

Mobil also looked at several alternative treatment technologies and evaluated these technologies to see if they might be applied at the refinery to upgrade the treatment system in order to achieve compliance with the state ammonia standard.

Basically, without going into details, I'll

say that none of these processes were found to be applicable to the situation at the refinery for a variety of reasons ranging from performance shortfalls, unsuitability from the Joliet site, the production of toxic by-products, or unreasonable costs associated with the systems.

I then conclude by saying that based on our findings, I have concluded that modification of the treatment plan at the Mobil Joliet Refinery to achieve compliance with the state of Illinois ammonia standard is technically infeasible and economically unreasonable.

I'll be glad to answer any questions that you have.

MR. RIESER: Thank you.

MS. LOZUK-LAWLESS: Thank you, Mr. Koon.

DR. FLEMAL: Dr. Koon, you characterize the current discharge concentration of the Joliet Refinery as being at, I believe, 3.9 milligrams per liter.

Tell me what that number is based on? That is --

DR. KOON: As I recall, if you take the average discharge ammonia concentration for the year 1996,

that average number is 3.9 milligrams per liter.

DR. FLEMAL: Is that the understanding of Mobil generally that that's --

MS. GACHICH: Yes.

DR. FLEMAL: -- the basis of that number?

MS. GACHICH: That's the annual average.

DR. FLEMAL: And once more, that's the average of the daily composite --

MS. GACHICH: Of the daily composite.

DR. FLEMAL: -- composite samples?

MS. LOZUK-LAWLESS: Thank you. Mr. Rieser?

MR. RIESER: I will proceed with my next and final witness.

Let's mark some of his exhibits. Would you mark this as Exhibit 5 and this as Exhibit 6, please?

(Exhibit Nos. 5 and 6 marked for identification, 7-2-97.)

MS. HOWARD: Do you have an extra copy of Exhibit 6?

MR. RIESER: Yes, I do.

Mr. Huff, I'm going to show you what's been marked as Exhibit 5 and ask if you can identify

that, please?

MR. HUFF: Yes, sir. This is a report we prepared for Mobil Oil.

MR. RIESER: Okay. And that was prepared under your supervision and direction?

MR. HUFF: That's correct.

MR. RIESER: Did you prepare testimony summarizing the report for this hearing?

MR. HUFF: Yes, I did.

MR. RIESER: I'm going to show you what's been marked as Exhibit 6 and ask you if that's a copy of your testimony?

MR. HUFF: Yes, sir, it is.

MR. RIESER: Okay. And Exhibit 5 is a complete copy of the report that you prepared?

MR. HUFF: Yes.

MR. RIESER: Okay. And Exhibit 6 contains an attachment with your resume in it; is that correct?

MR. HUFF: Yes.

MR. RIESER: And that's current and up-to-date?

MR. HUFF: Yes, it is.

MR. RIESER: Could you summarize your testimony for us, please?

WHEREUPON:

J A M E S E. H U F F,

called as a witness herein, having been first duly sworn, deposeth and saith as follows:

MR. HUFF: Yes. I have a bachelor's of science in chemical engineering from Purdue University and a master's of science in engineering from the Environmental Engineering Department at Purdue University in 1971.

My first job was at the Mobil Oil Joliet Refinery during the construction and start-up phases, and included in that period of time, I spent a six-week period as the area supervisor in charge of the waste water treatment facility, and I spent the entire two years basically responsible for technical support of waste water treatment issues.

Since that time, I've had several other jobs, all of which have involved some aspect of either ammonia treatment or the impact of waste water treatment discharges on receiving streams, most of those throughout Illinois.

I was asked by Mobil to evaluate the impact of its discharge on the Des Plaines River, and that was what was marked as Exhibit 5, which was the

report that came out of that. I'll briefly summarize that report.

MS. LOZUK-LAWLESS: Okay. Mr. Huff, I'm sorry. Then I should go ahead and enter this into the record then since you were marking -- my mistake.

Then we will enter into the record as Exhibit No. 5 the study titled Plume Study and Effluent Limit Derivations Report prepared by Mr. Huff, and as Exhibit No. 6 into the record, the testimony of Mr. Huff. Sorry.

MR. HUFF: Our primary focus was to go out and do a mixing zone determination on the Des Plaines River to determine how rapidly the discharge was dispersed into the river.

Mobil's discharge is combined with once through cooling water discharge outfall 002, and they go through a man-made channel, which is then discharged into the Des Plaines River.

We went out and by tracking various parameters, predominately chloride, which is a conservative parameter, we were able to determine that the available mixing inside the entire mixing zone was sixty-three to one of Mobil's outfall 001, and that factors in outfall 002 as well, which

represents approximately 77 percent of the flow out the outfall.

We then also followed the Plume further down to the I-55 Bridge where the water quality standards changed from a secondary contact water standard to a general use standard, and what we found is that at the I-55 Bridge, there was an additional four-to-one dilution of Mobil's outfall between the edge of its mixing zone and the I-55 Bridge.

That additional four-to-one dilution, you can take the existing secondary contact ammonia water quality standard, the 0.1 milligrams per liter, and say well, if you meet the un-ionized secondary contact standard at the edge of the mixing zone, the .1, then the stream at the general use standard will meet a .025 standard, which is the winter general water quality standard for un-ionized ammonia.

So we concluded that any effluent limits derived based on the secondary water quality standard would also be protective of the general use water quality standards as well.

Based on the mixing zone study that we did

and factoring in the Illinois EPA procedure of taking the 75th percentile temperature and pH, we back-calculated the appropriate effluent limits based on being protective of water quality, and we came out with a summer effluent limit of 70 milligrams per liter total ammonia and a winter value of 243 milligrams per liter total ammonia.

We then went back and looked at their existing effluent quality following a USEPA publication called Technical Support Document that's used to derive effluent limits based upon existing effluent quality.

When we did that, we came up with a monthly limit of nine milligrams per liter and a daily maximum of 23 milligrams per liter. The nine milligram per liter was based on strictly data since Mobil upgraded the activated sludge operation as being more representative of monthly average conditions; whereas, the maximum limit was derived back through data from 1992 because it's more reflective of potential upsets that even the upgrading is not going to be able to rectify short-term upsets.

The third thing we did then was look at the

existing NPDES permit limits, which were 13 and 26 milligrams per liter, and under the Clean Water Act anti-backsliding provisions those also need to be factored in.

Combining then all three of those, the one that is most restrictive was the one derived based on the existing effluent quality monthly average ammonia limit of nine milligrams per liter and the daily maximum limit of 23 milligrams per liter, and those numbers, of course, are well below what the water quality limits that we derived would have been, effluent limits, and from that you can conclude that the water quality is going to be adequately protected with limits of nine monthly and 23 on a daily maximum.

These numbers reflect a 31 percent reduction over their current 13 milligram per liter monthly average limit and a 12 percent reduction in the current daily maximum limit, which is 26 milligrams per liter.

The larger reduction in the monthly average limit is attributable to the additional expenditures that Mobil has done, which basically allows a system to recover faster from upset provisions, but it's

not as effective on the short-term spikes, and that's why you have less of a reduction along those areas.

Just to summarize, the proposed effluent limits to nine and 23 milligrams per liter we think are -- based on our analysis, are adequate to protect the Des Plaines River not only in the secondary contact water area where Mobil discharges into, but also further downstream where it goes into a general use standard below the I-55 Bridge. Thank you.

MR. RIESER: Mr. Huff, did you -- as part of your work in preparing the study that's in Exhibit 5, did you have occasion to review and evaluate water quality data for this reach of the Des Plaines River?

MR. HUFF: Yes, we did.

MR. RIESER: Okay. What did you look at specifically?

MR. HUFF: We -- the most applicable data we could find was from the Metropolitan Water Reclamation District Study that was done in 1989 and 1990.

The Metropolitan Water Reclamation District

collected samples right at the I-55 Bridge immediately downstream of Mobil, and, basically, they found in the summer months a 0.7 milligram per liter total ammonia, a quite low total ammonia number.

Our concern was that that data was somewhat outdated now because of the improvements that have been done by other discharges, primarily the Metropolitan Water Reclamation District.

So we recommended to Mobil that they institute a program of collecting water quality data at the I-55 Bridge, and Mobil did that from March 1996 to September '96 and collected approximately two samples a week over that period, and they found a monthly average number of 0.3 milligrams per liter, which is down over 50 percent from the '89 and '90 data that the Water Reclamation District collected.

In fact, for the five months from May to September, the highest ammonia that they found in the river during that period of time was .3 milligrams per liter.

When we were out in October of '96 doing the mixing zone in late October, October 29th, the

upstream ammonia of the six samples we collected was 0.1 milligrams per liter, quite low.

DR. FLEMAL: May I just interrupt here? You're talking about total ammonia nitrogen, not un-ionized?

MR. HUFF: That's correct. Those are total ammonia values. The un-ionized ammonias that those correspond to are down basically at the .00-something values. They're quite low.

So we basically concluded from that then that the ammonia levels in the Des Plaines River are currently well in compliance with the applicable water quality standards and has been and the levels appear to be further improved over the last five years.

MR. RIESER: Thank you, Mr. Huff.

DR. FLEMAL: I have a series of questions, if I might. As long as we've already touched on this issue of the distinction between total ammonia nitrogen and un-ionized ammonia nitrogen, perhaps we can clarify something else as well.

The data that you're talking about in terms of the effluent discharge levels are all in terms of total ammonia nitrogen; is that correct?

MR. HUFF: That's correct. In the case of the water quality derived values, they were based on achieving the .1 milligram per liter un-ionized ammonia water quality standard and then factoring in the pH and temperature calculating a stream ammonia total ammonia value and then factoring in the available dilution back-calculating into the effluent total ammonia value.

DR. FLEMAL: You went through all of those steps to determine whether or not the contribution from the Joliet Refinery from Mobil to that .025 milligrams per liter un-ionized ammonia?

MR. HUFF: Well, we did it to the .1, which is the secondary contact water quality standard, but then our mixing zone showed that we had a further four-to-one dilution from the edge of the mixing zone to the I-55 Bridge where the .025 winter standard un-ionized ammonia would kick in.

DR. FLEMAL: And assuming that there was -- that ammonia remained conservative over that additional distance as well?

MR. HUFF: Right. So we concluded that the recommended values, in this case, the water quality one, would be equally protective of not only the

secondary contact, but the general use downstream of the I-55 Bridge.

DR. FLEMAL: Could you run through for us for the record the distances that are involved? I think there's several critical distances here. The distance from the actual point of outfall of the effluent to the Des Plaines River and then from the Des Plaines River to the I-55 Bridge?

MR. HUFF: These would be an approximate. We have in our Exhibit 5 our report a Figure 4-1 that has a scale of one inch equals 200 feet, and you can see the mixing zone. The dilutions of fifty to one are basically shown on there. So the I-55 Bridge appears to be approximately a thousand feet downstream of where the outfall is.

DR. FLEMAL: Now, the outfall you're referring to is the entry of the water into the Des Plaines River in the main or where the pipe -- in the pipe?

MR. HUFF: Well, yes.

DR. FLEMAL: Or is there a difference even?

MR. HUFF: Yes, there is. In the pipe, we treated basically the outfall channel as part of the discharge pipe, if you will. It was a man-made channel installed basically to carry the effluents.

So we -- the discharge into the river was right where the outfall channel stopped, if you will.

DR. FLEMAL: If you'd like, on your Figure 4-1, that's at the boathouse position?

MR. HUFF: That's correct.

DR. FLEMAL: How far up-channel from the boathouse is the end of the pipe?

MR. HUFF: It's approximately where the word outfall channel is located on the figure.

DR. FLEMAL: And by scale, I would then guess that to be 150 feet or so?

MR. HUFF: Right.

MS. GACHICH: One hundred and fifty feet.

DR. FLEMAL: Okay. You refer to the mixing zone associated with this discharge in a number of places, both in your report and in your testimony.

Is there, in fact, a mixing zone that has been determined as part of the NPDES permit?

MR. HUFF: Not to my knowledge.

DR. FLEMAL: There is not?

MR. HUFF: I believe our study was intended to do the necessary fieldwork to establish the mixing zone.

DR. FLEMAL: So to the extent that a mixing zone is a formal construct in the NPDES permit, it doesn't exist, you're instead using that term to talk about what kind of an area might be available for mixing?

MR. HUFF: It's my understanding that when effluent limits are derived, there are various considerations. One is to water quality impact. One is existing effluent quality. Another is the existing permit limits. So -- and then you take the most restrictive of those three.

So the mixing zone is relevant when you're addressing the water quality impacts, and that's exactly what we did.

DR. FLEMAL: Okay. I have at least one additional question, but I'm not sure to whom this is best directed.

Mr. Rieser, you might want to appoint someone to --

MR. RIESER: Whoever jumps up and answers it, I suppose.

DR. FLEMAL: Yeah, give somebody the responsibility on this one.

In terms of effectuating your proposal,

which you do through -- would do through, in effect, reactivating a section that, although is still part of the corpus of the Board's regulations, has ceased to apply because it expired. That would be Section 304.214.

I noticed that one of the things that you would do is replace the term daily composite with daily maximum.

Can you explain for me what the significance of making that change is, if any?

MS. GACHICH: I believe if you look at the regulations, the definition is daily maximum. It does not refer to it as a daily composite. I believe that's why the change was made, and then there is a further requirement that says that the sample shall be a composite, but I believe it comes from the regulation itself.

DR. FLEMAL: There's certainly no intention upon your part then, I gather, to characterizing it as a daily grab sample or something?

MS. GACHICH: No, no. The intention is not there, but I believe that that was to make a congruent definition in the regulation.

MR. RIESER: I think the regulations tend to

speak in terms of daily maximums, and the maximum is defined.

MS. GACHICH: As a composite sample or some other variety. They didn't make that --

MR. RIESER: Yeah. There is no intention to change the method of compiling the information.

DR. FLEMAL: I had assumed that that was the case, but I thought that perhaps we ought to have the record reflect that.

MR. RIESER: Absolutely.

DR. FLEMAL: Whether we have an answer to this area of inquiry fully today or not, let me just observe for you that under the Board's regulations at Section 304.104, which is the averaging principle for effluent standards, that's on Page 30 of the March 1995 version of the regulations, the daily sampling are generally referred to there as composites rather than as maximums, and whether that's meaningful in terms of what we're dealing with now or not I don't know, but I do point you to that for your own thought to see whether or not, in fact, we are headed on the right course to make the replacements that you suggest.

MR. RIESER: I note that other -- just flipping

through, I believe this is consistent, that other site-specific regulations, and I'm looking at 304.211, refer to daily maximum.

That may have been that this was done at a time in 1988 where there was just a usage change, but there's no intention to establish a different methodology of evaluating how a maximum value is derived.

DR. FLEMAL: I expect that over time we've simply used these terms in vogue periods, and it's nothing more profound than that, but just to make sure that we understand, in fact, what it is that the daily sample would be, whether that remains the composite that we've been talking about or is intended to be some other kind of sample.

MS. LOZUK-LAWLESS: Does the Agency have any questions for the Mobil witnesses?

MS. HOWARD: No, we don't.

MS. LOZUK-LAWLESS: No. Are there any questions from any members of the audience on any of the testimony that was given today? No. Okay.

MR. RIESER: It's certainly our intention that the value -- the permit requires composite sampling and will be continued to require composite sampling,

continue to perform composite sampling, and certainly this value, this daily value, should be in terms of a composite.

It would be expected to be in terms of a composite sample rather than a grab sample because that's how the purpose is and that's how those things are gathered.

MS. LOZUK-LAWLESS: Thank you, Mr. Rieser.

Would you like to add anything else to any testimony?

MR. RIESER: I have nothing further. We have -- that concludes our presentation. We have nothing further unless there are further questions.

MS. LOZUK-LAWLESS: Okay. Seeing no further questions --

MR. RIESER: And I'd like to move for admission of the exhibits at this time if they've not already been admitted.

MS. LOZUK-LAWLESS: They have been admitted. Exhibits 1 through 6 have been admitted into the record properly.

Does the Agency wish to present any testimony at this time?

MS. HOWARD: Not at this time. With respect to

Dr. Flemal's comments, we'll also take a look at that, and if we feel that there might be something we need to clear up, we might submit something later in writing during the comment period.

MS. LOZUK-LAWLESS: With regard to the sampling and the composite sampling?

MS. HOWARD: Right, the composite versus the daily maximum. We'll just double-check it all so...

MS. LOZUK-LAWLESS: Okay. Thank you, Ms. Howard.

DR. FLEMAL: As long as we're talking about vogues and writing things, I don't even know if we should put this on the record, but we're all friends here, so let's do it.

There has been a tendency that any time we use a verb in writing any regulations, the verb is shall. Everything shall be this, shall be that, and there's certain questions to whether that's a grammatically correct way to do things.

I'm wondering whether the assembled crew here has reflection on whether when we and if we do move this rule forward we might go back and change some of the shalls that we inserted in this rule in 19-whatever when it was first adopted, 1988, I guess.

I would refer to example Subsection B. It says the requirements of Section 304.122(b) shall not apply. I think we say that they do or they don't apply, but we can hardly order them to mandate them to do something since the requirements themselves are inadequate.

I would propose that maybe we might do some grammatical dressing up of this.

MR. RIESER: My recollection as someone who has some experience in writing regulations is that the Secretary of State's Rules on Rules Joint Committee administrative rules practices require certain terms and prohibits certain adjectives and adverbs and things like that.

So I suspect the use of shall is a holdover of the certain limitations on the language that they tend to impose. I think grammatically you may be right, and it may be a more appropriate way to say things, but there may be, as there are in so many things, rules about it that ought to be consulted.

DR. FLEMAL: I think the Board over time I think has been as guilty as anybody in the rulemaking game for, what I consider, an overuse of shall when we say something shall mean this or shall mean that.

It either does or it doesn't, and we can hardly order it to have meaning I think.

At any rate, it's a small matter. As I said, I probably doubt it was worth having been put on the record, but I will look at the proposed language here and see if maybe some changes of that sort shall be in order.

MR. RIESER: Certainly.

MS. LOZUK-LAWLESS: Thank you. Are there any members of the public who wish to give testimony today?

Seeing none then, I would like to remind everyone that the record in this matter will close on July 28th, and, as I mentioned earlier, if you plan to file any additional filings or material with the Board, please do reference docket number R97-28.

As Dr. Flemal had mentioned earlier, the Board anticipates it may move on this matter during one of its August board meetings, so if that gives you a timetable, not seeing any further difficulty.

And are there any other matters which anyone would like to address on the record? No. All right. Then seeing none then, this matter and this hearing is adjourned. Thank you.

(Whereupon, these were all the proceedings had in the above entitled-matter.)

STATE OF ILLINOIS)
) SS.
COUNTY OF C O O K)

I, GEANNA M. PIGNONE-IAQUINTA, do hereby state that I am a court reporter doing business in the City of Chicago, County of Cook, and State of Illinois; that I reported by means of machine shorthand the proceedings held in the foregoing cause, and that the foregoing is a true and correct transcript of my shorthand notes so taken as aforesaid.

_____
Geanna M. Pignone-Iaquinta
Notary Public, Cook County, IL
Illinois License No. 084-004096

SUBSCRIBED AND SWORN TO
before me this_____day
of_____, A.D., 1997.

_____
Notary Public