

ILLINOIS POLLUTION CONTROL BOARD

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IN THE MATTER OF:) AS 02-5
) (NPDES Adjusted Standard)
PETITION OF NOVEON, INC.,) (Not Consolidated)
FOR AN ADJUSTED STANDARD FROM)
35 ILL. ADM. CODE 304.122) Volume I

The following is the transcript of a hearing held in the above-entitled matter, taken stenographically by Gale G. Everhart, CSR-RPR, a notary public within and for the County of Peoria and State of Illinois, before Bradley P. Halloran, Hearing Officer, at 122 North Prairie Street, Lacon, Illinois, on the 17th day of February, A.D. 2004, commencing at 3:50 p.m.

1 PRESENT:

2

HEARING TAKEN BEFORE:
3 ILLINOIS POLLUTION CONTROL BOARD
100 West Randolph Street
4 James R. Thompson Center, Suite 11-500
Chicago, Illinois 60601
5 (312) 814-8917
BY: MR. BRADLEY P. HALLORAN, ESQUIRE

6

7 APPEARANCES:

8

GARDNER, CARTON & DOUGLAS
9 BY: RICHARD J. KISSEL, ESQUIRE
MARK LATHAM, ESQUIRE
10 SHEILA H. DEELY, ESQUIRE
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12 (312) 569-1442
On Behalf of the Petitioner.

13

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
14 BY: DEBORAH J. WILLIAMS, ESQUIRE
Attorney at Law
15 1021 North Grand Avenue East,
16 Springfield, Illinois 62794
(217) 782-5544
17 On Behalf of the Respondent.

18

ALSO PRESENT:

19

Richard Pinneo
20 Lorraine Robinson
David Giffin
21 Michael R. Corn
Alisa Liu
22 Chen H. Lin

23

Members of the public and press.

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1 HEARING OFFICER HALLORAN: Good afternoon. My name
2 is Bradley Halloran. I am the hearing officer with the
3 Illinois Pollution Control Board. I'm also assigned to
4 this matter entitled Adjusted Standard, 02-5. And the
5 title of it is, In The Matter of Petition of Noveon,
6 Inc., for an Adjusted Standard From 35 ILL. ADM. CODE
7 304.122. It is February 17th in the year 2004. It's
8 approximately 10 minutes to 4. And I do note again,
9 there are maybe one or two members of the public here.
10 And if they so choose, they can make public comment.
11 Again, this hearing will be continued into tomorrow as
12 well.

13 Then I note that that hearing is intended to
14 develop a record for review for the Illinois Pollution
15 Control Board. I will not be making the ultimate
16 decision in this case. That decision is left up to the
17 five members of the Pollution Control Board. They will
18 review the record, the transcript and also the
19 posthearing briefs and render a decision in this matter.
20 My job is to ensure an orderly hearing, a clear record
21 and rule on evidentiary matters that may arise. I do
22 want to note, we are going to run this hearing pursuant
23 to section 104.400 through 104.428. And, again, it has
24 been noticed up pursuant to the Board regs.

1 With that said, would the parties like to
2 introduce themselves, and then we will get into some
3 preliminary matters.

4 MR. KISSEL: My name is Richard Kissel of the law
5 firm Gardner, Carton & Douglas. To my right is Mark
6 Latham of the same firm, and to my left is Sheila Deely.
7 We represent Noveon, Inc.

8 HEARING OFFICER HALLORAN: Thank you, Mr. Kissel.
9 Ms. Williams?

10 MS. WILLIAMS: My name is Deborah Williams. And I
11 am here today on behalf of the Illinois Environmental
12 Protection Agency where I'm assistant counsel for the
13 Bureau of Water. And I have two other agency staff with
14 me at this point: Mr. Rick Pinneo from our permit
15 section, and Lorraine Robinson from the division of
16 legal counsel.

17 HEARING OFFICER HALLORAN: Thank you, Ms. Williams.

18 Before we get into openings I would like to
19 visit this written testimony that was filed on February
20 9th and 6th. Mr. Kissel or Ms. Deely, do you care to
21 address that?

22 MS. DEELY: Sure.

23 HEARING OFFICER HALLORAN: Just kind of a summary.
24 I have right here expert -- file the attached exhibits

1 to expert written testimony of Michael Corn.

2 MS. DEELY: Right. And there is the separate
3 written testimony of Michael Corn that you should have.

4 MR. KISSEL: If I can, I can give you the order of
5 our witnesses and the testimony being submitted. Is
6 that okay?

7 HEARING OFFICER HALLORAN: That's fine. You know
8 what, I do not have -- I'm sorry, Mr. Kissel, I do not
9 have -- all I have is attached exhibits to expert
10 witness testimony of Michael Corn. I don't know if the
11 clerk failed to give me a copy or if I misplaced it.

12 MS. DEELY: I have another copy to give you.

13 HEARING OFFICER HALLORAN: Mr. Kissel, I'm sorry.

14 MR. KISSEL: That's all right. To give you -- it
15 will be part of the opening statement, but I'd just as
16 soon give it at this point. We intend to have the
17 following witnesses. There will be six. The first
18 witness will be Mr. David Giffin, who is employed by
19 Noveon, Inc., and he has prepared a written statement
20 with exhibits that has been filed with the Board. His
21 testimony primarily will be in the area of describing
22 the plant, some of the economics regarding the plant and
23 some of the pretreatment that's been done at the
24 facility.

1 Our second witness will be Houston Flippin.
2 He will testify. He has prepared a written statement,
3 as well, along with exhibits. And his testimony will
4 deal with various technologies that were studied and
5 what technologies are available, if any, and at what
6 cost in order to treat ammonia-nitrogen in the effluent.
7 In addition he will talk somewhat about population
8 equivalents and the like.

9 The third witness we have is Mr. Michael Corn
10 who has prepared written testimony and there are
11 exhibits for that. Mr. Corn will testify regarding the
12 discharge characteristics of the plant, along with zone
13 of initial dilution and mixing zones and the issue of
14 water quality.

15 The fourth witness will be Mr. William
16 Goodfellow who has prepared testimony along with
17 exhibits. And his testimony will deal with his
18 evaluation and review of the toxicity issues relating to
19 the discharge.

20 The fifth witness will be Linda Shaw who is
21 an employee of Noveon. She is a CPA. She will testify
22 with regard to the impact of the requirement of
23 treatment will cause on the financial condition of the
24 Henry facility. The last witness will be Guy Davids.

1 Linda Shaw does have written testimony along with an
2 exhibit or two.

3 Guy Davids -- is it David or Davids?

4 MR. DAVIDS: Davids.

5 MR. KISSEL: I was right. He recently was the
6 plant manager at the Henry facility, and he has been
7 involved in many issues involved in this proceeding and
8 will testify as to what the impact of the potential
9 requirement for installing treatment technology will
10 have on the viability of the plant. So there should be
11 in your grasp, testimony, written testimony from five
12 witnesses, Mr. Giffin, Flippin, Corn, Goodfellow and
13 Ms. Shaw.

14 HEARING OFFICER HALLORAN: I do or soon will have.
15 I think I'm missing the written testimony of Mr. Corn,
16 did you say?

17 MS. DEELY: Uh-huh.

18 HEARING OFFICER HALLORAN: Thank you, Mr. Kissel.

19 MS. WILLIAMS: In my experience at regulatory
20 proceedings we do have copies for the members of the
21 public in attendance.

22 MS. DEELY: I doubt if I have a copy for everyone.

23 MS. WILLIAMS: I'm just identifying that usually at
24 regulatory type hearings like this --

1 HEARING OFFICER HALLORAN: I have done a few
2 adjusted standards, and that's --

3 MS. DEELY: Were any members of the public there?
4 I think it is the first time where there have actually
5 been members of the public here. They are planning on
6 reading it in. So it doesn't matter.

7 MR. KISSEL: I think the reason was the same reason
8 we gave at the other proceeding, is there are members of
9 the public here.

10 HEARING OFFICER HALLORAN: Correct. So if there is
11 nothing further, I guess we can proceed with your
12 opening.

13 MR. KISSEL: I will be very brief. As you
14 indicated, Mr. Hearing Officer, this is a Petition for
15 Adjusted Standard which has been filed by Noveon, Inc.,
16 asking for the establishment of new effluent limits or
17 effluent limits different than are contained in the
18 NPDES permit that has been issued and appealed for the
19 Henry discharge.

20 We, as presented in that proceeding, have
21 indicated we do not think that rule 304.122 of the
22 Board's rules dealing with ammonia effluent limitation
23 is applicable to this facility. But notwithstanding
24 that, we are seeking to have the Board adopt an ammonia

1 limitation which would allow us to discharge the current
2 level of ammonia to the Illinois River. The entire
3 proceeding involves the Henry plant of Noveon, Inc. The
4 Henry plant, dubbed, I might add, in the newspaper as
5 the Caterpillar of Marshall County. It is an operating
6 facility and has been here for some time. It is a
7 chemical manufacturing facility containing a specialty
8 chemical branch, and another part of it is the PVC part
9 of the specialty polymers manufacturing. And in any
10 case this will all be described in some detail.

11 It operates -- Noveon owns and operates a
12 waste treatment plant at that facility which treats for
13 BOD, suspended solids and a number of other parameters.
14 This is a relatively unique procedure, and I
15 hesitatingly use that word because we are asking for a
16 limitation -- we are asking for the allowance of the
17 discharge of ammonia when, indeed, for the most part,
18 the plant does not use ammonia in its processes. What
19 happens is that because it has a very efficient BOD
20 treatment facility, it actually generates ammonia in the
21 waste treatment plant itself. This is unusual and
22 different in many cases where the -- it is a contaminant
23 that can't be removed from the processes, but rather has
24 to be treated if anything is done with it at all. In

1 fact, in addition to that, ammonia cannot be treated in
2 the current plant even though it is of the technology
3 that would normally do that. But there are inhibitors
4 in the plant in the influent that inhibit the growth of
5 the bacteria necessary to treat the ammonia. The
6 inhibitors themselves can't be treated because they form
7 a fundamental process -- fundamental part, excuse me, of
8 the manufacturing process.

9 So what we have done is to ask a highly
10 qualified expert, Mr. Flippin, and others, over a period
11 of time to see whether -- or to what degree ammonia can
12 be treated to reduce the amount of ammonia actually
13 being discharged. Mr. Flippin will testify as to the
14 various alternatives that he has looked at. Mr. Giffin
15 will tell you a number of things that he has looked at,
16 and we will come to conclusion as to what, if any,
17 treatment is available.

18 The cost of the posttreatment, which is what
19 is involved, is extremely expensive as compared to the
20 income and the profit produced by that particular
21 facility.

22 The current discharge of the plant is to the
23 Illinois River, obviously, and is through a single port
24 diffuser. And I think one of the things for anyone who

1 is here and the Board to keep in mind is that this
2 facility is located on a bluff overlooking the Illinois
3 River and its discharge goes down -- in a pipe,
4 obviously -- into the river and allows for a substantial
5 amount of mixing. It is not what's called a
6 shore-hugging plume. It actually gets out into the
7 river. It is currently, as I said, a single port
8 diffuser. It goes out into the river, and it combines
9 with the -- before discharge, the effluent from the City
10 of Henry which has been allowed pursuant to an agreement
11 with the Illinois EPA.

12 Another important fact here is that we
13 believe that water quality standards for ammonia are
14 currently being met downgradient of the discharge taking
15 into account a zone of initial dissolution and a mixing
16 zone. We believe the criteria -- the two most important
17 criteria are whether there is any contribution to the
18 limitation or reduction in the dissolved oxygen of the
19 river, or is there an addition or whatever to the water
20 quality standards which deal with the aquatic toxicity.
21 We believe that based upon the testimony and the studies
22 that have been done that the water quality standards are
23 being met.

24 The point being that notwithstanding the fact

1 that the Henry facility, the Noveon plant, having added
2 substantial treatment, investigated a number of
3 alternatives and having done a substantial amount of
4 work in trying to pretreat whatever the waste will
5 contribute to the ammonia discharge, they are not
6 causing a water quality standard and to require them to
7 involve further treatment would just be a penalty which
8 could affect the viability of the plant.

9 There has been some talk in the news and
10 others about the toxicity of the effluent. And there is
11 no question, and we admit, that the effluent taken as an
12 effluent does evidence toxicity as will be shown by
13 Mr. Goodfellow, an expert in that field. However, that
14 toxicity is reduced and eliminated, in fact, as the
15 wastewater hits the Illinois River and when it comes
16 into contact at the relevant times with the aquatic
17 life.

18 Another important thing about the toxicity,
19 which Mr. Goodfellow will testify to, is that there are
20 really two toxicants involved. One is ammonia-nitrogen
21 and the other are salts, TDS. He will make the point to
22 the Board that even if ammonia-nitrogen were eliminated,
23 there is a need to -- the effluent is toxic because of
24 the salts involved.

1 The Agency has stated -- and we have memos to
2 that effect -- that if you try to treat -- that the best
3 degree of treatment for salts is no treatment at all,
4 rather dilution because of the expense of it.

5 So the fact is that salt is a controlling
6 parameter as far as the toxicity of the effluent is
7 concerned. But I do want to make the point, again, that
8 toxicity effluent cannot be equated to toxicity in the
9 stream because it doesn't exist here.

10 There will be testimony about the various
11 alternatives available for potentially treating ammonia
12 in the discharge in terms of the various technologies
13 available, what their reliability is, what their cost is
14 and what their efficiency is. We believe that to
15 require us to install treatment here would have a
16 substantial economic impact on the facility. So,
17 therefore, we would ask the Board to review the
18 testimony that's given and has been worked on and done
19 over a long period of time and to allow for the Petition
20 for Adjusted Standard which would allow ammonia to be
21 discharged at the levels we set forth in our petition.

22 HEARING OFFICER HALLORAN: Thank you, Mr. Kissel.

23 Ms. Williams?

24 MS. WILLIAMS: Would there be an objection to

1 providing my opening at the beginning of my case, or
2 would you prefer --

3 MR. KISSEL: Go ahead.

4 MS. WILLIAMS: Go ahead and wait?

5 MR. KISSEL: It's all right with me.

6 HEARING OFFICER HALLORAN: All right. Mr. Kissel,
7 your first witness.

8 MR. KISSEL: Before we do that, I know we had asked
9 by motion to incorporate into this record the transcript
10 of the permit appeal which is R91-17 -- or, no, PCB
11 91-17. We would either renew that motion if the hearing
12 officer is willing to hear it, or offer just the
13 testimony of the witnesses including the ones that will
14 testify today. Or if neither of those is acceptable, to
15 make an offer of proof so that this can all be marked as
16 an exhibit and be presented to the Board.

17 HEARING OFFICER HALLORAN: Well, I guess I'm not
18 going to revisit my opinion, my order that went out.
19 And right now, quite frankly, I can't find the thing.
20 But what were your options?

21 MR. KISSEL: Well, what we have done is we have
22 separately taken the testimony of the witnesses rather
23 than all of the preliminaries and other things, the
24 witnesses and the exhibits, and would ask that --

1 MS. DEELY: As they pertain to ammonia.

2 MR. KISSEL: As they pertain to ammonia. And would
3 ask that the hearing officer include that as
4 Petitioner's Group Exhibit Number 1.

5 HEARING OFFICER HALLORAN: Ms. Williams?

6 MS. WILLIAMS: I'm not sure. How is it that -- you
7 are saying you just took portions of the transcript and
8 portions of the exhibits? I guess at this time I was
9 relying on your order and feel at this point it's a
10 prejudice on me to evaluate what those documents are and
11 what I might need to put into the record to rebut them,
12 or if I feel something has been left out that should
13 have been kept in.

14 MR. KISSEL: I just feel that -- as we have talked
15 about before that I think we are sort of closing our
16 eyes to the fact that these proceedings, while maybe
17 shouldn't be consolidated, they are related. And the
18 testimony, I think rather than being duplicative, put it
19 into this record and let the Board use it. This is a
20 regulatory proceeding, and I can, as I'm sure you can,
21 attest to the fact that there are things that have been
22 introduced into regulatory proceedings, including screen
23 doors, that would not find their way into a courtroom as
24 such or a courtroom proceeding. I just think it's

1 relevant; the testimony is relevant. I would be more
2 than happy to give whatever we have for review to Ms.
3 Williams and she can, within the next day or so or
4 whatever, look at that and see whether she wants to add
5 anything, or --

6 MS. WILLIAMS: Doesn't it make more sense, given
7 all these documents are filed with the Board, that
8 Mr. Kissel simply make an offer of proof of why he
9 thinks the Board should overrule your order and then
10 they can
11 themselves -- I mean, it's not like these are documents
12 that are not available to the Board.

13 HEARING OFFICER HALLORAN: You know, again -- and
14 maybe I'm missing the point in my order. In the very
15 last sentence I put, "The Board should not be burdened
16 with sorting relevant from irrelevant material." And
17 that's what would happen here.

18 MR. KISSEL: That's what we did.

19 MS. DEELY: That's what we did.

20 HEARING OFFICER HALLORAN: Well, she hasn't even
21 looked at it yet, so we are kind of back to square one.

22 MR. KISSEL: She can look at it. She must have
23 reviewed -- or the Agency must have reviewed the
24 transcripts to prepare for the hearing we just

1 concluded. So --

2 MS. WILLIAMS: Not in that frame of how --

3 HEARING OFFICER HALLORAN: Can we reserve that
4 ruling and if you get a chance to look at it tonight,
5 Ms. Williams, do so and we can revisit it tomorrow
6 morning?

7 MS. WILLIAMS: I can take it with me tonight and
8 look at it.

9 MR. KISSEL: Thank you.

10 HEARING OFFICER HALLORAN: Thank you.

11 MR. LATHAM: We will call our first witness,
12 Mr. David Giffin.

13 (Witness sworn.)

14 DAVID GIFFIN,
15 called as a witness, after being first duly sworn, was
16 examined and testified upon his oath as follows:

17 DIRECT EXAMINATION

18 BY MR. LATHAM:

19 Q Please state your name for the record.

20 A My name is David Giffin.

21 Q Have you prepared a written statement for
22 this hearing today?

23 A Yes, I have.

24 Q Are you prepared to read that statement into

1 the record for us?

2 A I am.

3 Q Please proceed.

4 A My name is David Giffin. I reside at 336
5 County Road 850 North, Sparland, Illinois, which is
6 about approximately 18 miles west of the Noveon-Henry
7 plant. I'm the health safety environmental manager for
8 the Noveon-Henry plant.

9 I graduated from the University of Illinois
10 in 1967 with a bachelor of science, a degree in zoology
11 and a minor in chemistry. In 1975 I received a master's
12 of engineering administration degree from Bradley
13 University.

14 I have been employed at the Henry plant for
15 34 years. I started as an associate engineer at the
16 Henry plant after being discharged from the United
17 States Army in July 1969. In this capacity I worked as
18 a shift foreman for 13 months in the polymer chemicals
19 area. From 1970 to 1972 I worked as a process technical
20 engineer in the polymer chemicals area. I was then
21 asked to be the plant environmental engineer, a position
22 I had from 1972 to 1978. In 1978 I transferred to the
23 Geon production area as the general foreman of
24 suspension and dispersion production.

1 In 1979 I became the product manager,
2 production manager, for Geon Suspension and Compound
3 Production. In 1982 I became the technical manager of
4 Geon Suspension and Compound. In 1983 I was asked to be
5 the plant engineer of the facility. And, finally, in
6 1992 I was asked to be the health safety environmental
7 manager of the facility. And in March 1993 I assumed my
8 current position as the health safety manager for the
9 Noveon plant.

10 Through my work experience, I have interfaced
11 with all the processes affected by the current NPDES
12 permit appeal and Petition for an Adjusted Standard. A
13 little background on the plant, the Henry plant site was
14 established in 1958 by BF Goodrich as a chemical process
15 facility manufacturing rubber chemicals for the rubber
16 industry. The site was selected by BF Goodrich
17 initially due to its unique location and proximity to
18 the Illinois River, Rock Island Railroad System, state
19 highway system, electrical power resources, the natural
20 gas resources, the water resources, and the positive
21 work ethic of the local rural population.

22 The property was purchased adjacent to land
23 owned by Rohm and Haas. Since 1958 the plant has
24 expanded and changed so that two separate companies,

1 Noveon, Incorporated, and PolyOne now coexist at the
2 same site. PolyOne manufactures polyvinyl chloride
3 products and was created as a separate entity in 1993
4 when BF Goodrich spun the Geon Vinyl division off and
5 created a separate publicly traded company, the Geon
6 Company. In 2001, Noveon, Incorporated, was created
7 when BF Goodrich sold the remainder of its chemical
8 operations to a private investment group.

9 The facility has a utility operation that
10 serves both sides of the plant. The utility operation
11 consists of boiler operation, water treatment process
12 and a complex wastewater treatment system that serves
13 both sides on site. The boiler operation is owned and
14 operated by PolyOne, while the water treatment and the
15 waste treatment systems are owned and operated by
16 Noveon.

17 In 1985 with the assistance of the State of
18 Illinois, BF Goodrich constructed a state-of-the-art
19 circulating fluid bed coal fire boiler for \$21 million
20 that is capable of burning Illinois high sulfur coal
21 environmentally clean. This boiler has been in
22 operation for the past 17 years consuming high sulfur
23 Illinois coal and supporting many jobs in the Illinois
24 coal industry. The state-of-the-art wastewater

1 treatment system is owned and operated by Noveon
2 providing wastewater treatment for both companies'
3 wastewater processes.

4 A little bit of information about our
5 products. The Noveon facility currently produces
6 antioxidants and accelerators for the rubber and the
7 plastics industry and employs 75 people. Recently the
8 facility has added personal care and Carboset products
9 to its mix of products. The antioxidants and the
10 accelerators are the salt and pepper chemicals used in
11 the production of rubber and plastics. In other words,
12 the chemicals are used in small amounts to provide very
13 key effects for the rubber and plastics industry.
14 Without antioxidants present, and such articles such as
15 rubber bands, the rubber band as it expands and
16 contracts will develop holes in the rubber and it will
17 quickly break. This concept applies to tires as they
18 support a vehicle and they roll down the road. Tires
19 could not function safely without antioxidants. One of
20 our products called Geltrol is even approved for food
21 grade applications such as baby bottle nipples.

22 The accelerator products are used in the
23 manufacture of specific rubber tires in such a way that
24 the vulcanizing process does not require 8 or 10 hours,

1 but it accelerates that curing action so that radial
2 tires can be cured evenly in less than 30 minutes. In
3 practical terms this means a tire that's going to cost
4 less and last longer.

5 In light of the competitiveness of the rubber
6 industry, the company more recently has been expanding
7 its product base to include personal care products and
8 Carboset products that impact less competitive markets
9 and have new product and better growth marketing
10 potentials.

11 A little background on PolyOne products. The
12 PolyOne facility produces specialty polyvinyl chloride
13 resins for niche, and specialty markets and the flooring
14 industry and has an employment of approximately 100
15 people. The resins produced by PolyOne have a myriad
16 number of applications including the wear layer which is
17 the top layer of resilient floors; the support base of
18 the resilient floor, which is the bottom layer;
19 protective coating of cans used for food processing and
20 vinyl wallpaper, to name just a few.

21 Each of the companies plays a major role in
22 supporting the local economy through payment of wages,
23 purchase of materials locally, and the payment of real
24 estate taxes. PolyOne pays approximately \$128,000 a

1 year while Noveon pays approximately \$142,000 a year.

2 On an annual basis, each company supports a
3 payroll including benefits of \$8.2 million for PolyOne
4 and \$6.2 million for Noveon. These payrolls provide the
5 economic energy that help support the community of
6 Henry, which has about a population of 2,200 as well as
7 local businesses within Marshall County and elsewhere.
8 The average hourly rate for a chemical operator working
9 at the site is approximately \$22 an hour. During a
10 grand awards ceremony for PolyOne, as an aide to Robert
11 Michel, U.S. Representative, Ray LaHood said, "This
12 company is like the Caterpillar of Marshall County in
13 the jobs it provides and the stability it provides to
14 the community. Typical economic models indicate that
15 for every job created by Noveon's type of industry, six
16 jobs are created as a result, to support its overall
17 production activities.

18 Q Excuse me, Mr. Giffin, I'm going to show you
19 what's been marked as Petitioner's Exhibit Number 1 in
20 the Adjusted Standard proceeding.

21 A All right.

22 Q Have you seen this before?

23 A Yes, I have.

24 Q Can you tell us what that is, what that

1 represents?

2 A This is a block flow diagram of the Noveon
3 wastewater treatment system.

4 Q Is that a true and accurate representation
5 of the wastewater treatment system?

6 A Yes, it is.

7 MR. LATHAM: I'd like to move that this be
8 admitted. It's Petitioner's first exhibit.

9 HEARING OFFICER HALLORAN: Ms. Williams?

10 MS. WILLIAMS: I have no objection to Petitioner's
11 Exhibit Number 1.

12 HEARING OFFICER HALLORAN: Petitioner's Exhibit
13 Number 1 is admitted.

14 A Okay. The facility's wastewater treatment
15 system, referring to Exhibit 1, serves both companies on
16 site. It consists of wastewater storage tanks for each
17 company that feed a primary treatment system consisting
18 of pH control, flocculent addition and clarification.
19 The clarified wastewater is then fed to a secondary
20 treatment system consisting of an activated sludge
21 system involving four separate biotreaters which total 2
22 million gallons. And then to a clarifier designed to
23 remove and recycle the activated sludge back to the
24 biotreaters.

1 The clarified effluent is finally fed to a
2 tertiary treatment system consisting of two traveling
3 bed sand filters. In addition to this system,
4 additional wastewaters, including noncontact water from
5 the water treatment system, the boiler operation, and
6 storm water runoff, are collected in separate ponds
7 where they are neutralized and are either fed back into
8 the wastewater treatment system or to a Parkson sand
9 filter for solids removal, combined with the wastewater
10 treatment effluent and discharged to the Illinois River
11 through a single port discharge pipe.

12 The wastewater treatment system has undergone
13 a number of improvements throughout the life of the
14 facility. In 1972 the primary and the secondary systems
15 which consist of about 800 gallons of aeration pond were
16 installed. The secondary system was changed in 1987 and
17 1988 to above-ground aeration tanks which consist of
18 about one million gallons of aeration, and a sludge
19 removal system was added at that time. An initial
20 tertiary sand filter system was installed in 1989. This
21 tertiary filtering system was expanded to a second sand
22 filter in 1992. Additionally, aeration of approximately
23 one million gallons was added to the system in 1997 to
24 provide more complete treatment of the wastewater

1 organic load to the system.

2 During the time between 1990 and the present,
3 many studies were conducted to evaluate methods for
4 removing the ammonia-nitrogen from the plant effluent.
5 The Noveon processes do not discharge any significant
6 ammonia-nitrogen directly to the wastewater treatment
7 system. They do, however, discharge complex organic
8 amine chemicals to the wastewater system including
9 tertiary butyl amine and morpholine. These materials
10 are discharged directly to the wastewater system due to
11 the unreacted portion of each chemical, or indirectly
12 due to loss of finished solid product of the wastewater
13 system. The solid product can break back down into
14 amine-bearing byproducts. The PolyOne processes
15 discharge a small amount of ammonia-nitrogen directly to
16 the wastewater system in the form of ammonium laurate, a
17 dispersing agent used in their polymerization reaction
18 step. Depending on the efficiency of the current
19 activated biotreater system, the complex organic amines
20 and amine-bearing byproducts are converted to
21 ammonia-nitrogen and the ammonium from ammonium laurate
22 are discharged after treatment to the system -- to the
23 Illinois River.

24 Noveon, through its pollution prevention

1 efforts, has evaluated all of its processes for
2 contributing ammonia precursors to the wastewater
3 treatment system. Through these evaluations the
4 following source reduction activities have been pursued:
5 In 1990 a process evaluation literature search for
6 removing morpholine from the OBTS was conducted by our
7 research and development scientists.

8 Q Mr. Giffin, I'm going to show you what's been
9 marked as Petitioner's Exhibit Number 2 in the adjusted
10 standard proceeding. Can you take a look at that,
11 please?

12 A Yes. This is the OBTS morpholine recovery
13 system.

14 Q Is that a true and accurate representation of
15 the system you evaluated?

16 A Yes, it is.

17 Q Thank you.

18 HEARING OFFICER HALLORAN: Ms. Williams?

19 MS. WILLIAMS: I don't have any objection.

20 MR. LATHAM: I would like to move that Petitioner's
21 Exhibit Number 2 be admitted.

22 HEARING OFFICER HALLORAN: No objection.

23 Petitioner's Exhibit Number 2 is admitted.

24 Mr. Giffin, are you going to need these

1 exhibits?

2 THE WITNESS: I may need this one. I don't know.

3 HEARING OFFICER HALLORAN: Okay.

4 A Okay. The technology identified for the
5 removal of morpholine involves a liquid/liquid
6 extraction system which is depicted in Exhibit Number 2.
7 It begins with chlorinating the unreacted morpholine to
8 a substance called N-chloromorpholine which we will call
9 NCM from this point on. The NCM is then extracted from
10 the waste phase using an ordinary solvent such as
11 toluene. The toluene/NCM is then separated from the
12 water using a decanting step and then converted back to
13 free morpholine and toluene using a reducing agent.
14 Since the morpholine is soluble in water, it can be
15 separated from the toluene using a decanter and then
16 recycled to the process as raw material. The toluene is
17 then flashed in a flash pot and reused in the reactor
18 for extracting additional NCM.

19 Noveon did not proceed with this process
20 because of safety, quality control and other concerns
21 with its implementation. These included the quality of
22 the morpholine returning to the process, the unstable
23 nature of NCM which would present a risk of
24 decomposition and explosion. And the hazardous waste

1 generated from the process.

2 In 1990 a process evaluation literature
3 search for removing tertiary butyl amine from the BBTS
4 process was conducted.

5 Q Mr. Giffin, I would like to show you what's
6 been marked as Petitioner's Exhibit Number 3 in the
7 Adjusted Standard proceeding. Can you take a look at
8 that for us, please?

9 A Yes. This is a TBA recovery system that I'm
10 about to speak to.

11 Q Is that a true and accurate representation of
12 the TBA recovery system you are going to testify about
13 here today?

14 A Yes, it is.

15 MS. WILLIAMS: Can you explain a little bit? It's
16 not a representation of something that actually has been
17 built, right?

18 A That's correct.

19 Q But it's something that was -- it's a system
20 that was evaluated as part of the -- as his testimony
21 will show.

22 MS. WILLIAMS: Can he just sort of explain who did
23 the drawing?

24 A Yeah. The drawings have been put together by

1 our R and D people back in 1990. And as far as the
2 specific person that put them together, I do not know
3 the name.

4 MR. LATHAM: Do you have any other questions about
5 it?

6 MS. WILLIAMS: Was it someone that worked for
7 Noveon? They worked for Noveon; you just don't know
8 their name?

9 A Yes. They were from our research and
10 development group. As far as who put the drawings
11 together, I don't who. But the R and D scientist,
12 C.K. Shaw, was one of the individuals that was involved
13 with that as well as one of our plant personnel named
14 Rick Bremlin.

15 MS. WILLIAMS: I think that's fine.

16 HEARING OFFICER HALLORAN: Petitioner's Exhibit
17 Number 3 is admitted.

18 A This technology involves feeding the tertiary
19 butyl amine waste stream to a steam stripping column.
20 The tertiary butyl amine is condensed to a receiver and
21 used back into the reactor. The water of the column is
22 fed to the existing wastewater treatment system. We
23 determined that the materials of construction for the
24 column would need to be made from monel due to the high

1 temperature and salt concentration.

2 In 1990 our process evaluation literature
3 search for removing morpholine from the Curite 18
4 process was conducted.

5 Q Mr. Giffin, I would like to show you what's
6 been marked as Petitioner's Exhibit Number 4 in the
7 Adjusted Standard petition. Can you take a look at that
8 for us?

9 A This is a flow diagram for the Curite 18
10 morpholine return system.

11 Q Is that a true and accurate representation of
12 the system that you are going to provide testimony about
13 today?

14 A Yes, it is.

15 HEARING OFFICER HALLORAN: Ms. Williams?

16 MS. WILLIAMS: I don't think I really have any
17 objection to these. I just want to point out they
18 weren't attached, were they, to the testimony? I mean,
19 they are referred to as we go through, but I didn't get
20 a copy.

21 HEARING OFFICER HALLORAN: Some of them were
22 attached.

23 MS. WILLIAMS: Did you get them? I didn't get
24 anything attached to mine at all. I never got -- I

1 don't think I have ever got these.

2 MR. LATHAM: Here is a file-stamped copy.

3 MS. WILLIAMS: I had made a note to ask him.

4 MS. DEELY: They were originally attached.

5 MS. WILLIAMS: I got mine in an e-mail. If the
6 Board has gotten them, they probably came in the hard
7 packet that we got, the hard copy that came on Friday.
8 I didn't look through that. I don't have an objection.

9 HEARING OFFICER HALLORAN: Should have gotten them
10 on February 6th.

11 MS. WILLIAMS: I did not.

12 HEARING OFFICER HALLORAN: Or thereabouts. But in
13 any event, Petitioner's Exhibit Number 4 is admitted
14 without objection. Is that correct, Ms. Williams?

15 MS. WILLIAMS: Yes.

16 HEARING OFFICER HALLORAN: Thank you.

17 THE WITNESS: Which one are we on?

18 MR. LATHAM: I think I took your exhibit.

19 A And this is Exhibit Number 4? In 1990 a
20 process evaluation literature search for removing
21 morpholine from the Curite 18 was conducted. This
22 technology as depicted by Exhibit 4 is very similar to
23 the OBTS recovery process I already reviewed. With the
24 exception of the organic extractant which would be

1 methylene chloride in this case and the need to reduce
2 the normal chloromorpholine back to morpholine. Again,
3 the safety, quality control and other concerns would
4 remain the same as for the OBTS recovery system.

5 In 1990 a process evaluation literature
6 search for removing morpholine, mercaptobenzothiazole,
7 tertiary butyl amine, and other byproducts from the
8 OBTS, MBDS, BBTS and Curite 18 processes was conducted.

9 Q I'll show you what has been marked as
10 Petitioner's Exhibit Number 5 in the Adjusted Standard
11 proceeding. Can you take a look at that and tell us
12 what that is?

13 A This is the flow diagram for the accelerated
14 pretreatment system that I am about to describe.

15 Q Is that a true and accurate representation of
16 the system you are going to give testimony about today?

17 A Yes, it is.

18 MR. LATHAM: I move that that be admitted.

19 HEARING OFFICER: Ms. Williams?

20 MS. WILLIAMS: Oh, I have no objection, I'm sorry.

21 HEARING OFFICER HALLORAN: It's admitted.

22 Petitioner's Exhibit Number 5 is admitted.

23 A This technology uses acidification for
24 pretreating all of the accelerator streams. The process

1 involves collecting all of the streams and acidifying to
2 a pH of 1, followed by neutralization to a pH of 7 and
3 subsequent extraction of the organics using an organic
4 solvent such as isopropanol and a liquid/liquid
5 extractor. The solvent organic waste stream is then fed
6 to a flash pot where the solvent is stripped off and the
7 organic tars are collected for disposal. The solvent is
8 repurified and reused. In this treatment scenario none
9 of the organic tars would be suited for reuse in the
10 process. Significant research and development would be
11 needed to develop this treatment further. Safety,
12 environmental and other concerns with this pretreatment
13 involve the potential generation of carbon disulfide,
14 which has an auto ignition of 200 degrees Fahrenheit,
15 the amount of hazardous waste that would be generated
16 and the high levels of total dissolved solids to the
17 waste treatment system.

18 In 1994 the MBDS process was started up at
19 the Henry plant. Since it also used morpholine as a raw
20 material, a process evaluation literature search for
21 removing morpholine from MBDS process was conducted.
22 Due to the similarity of this process and the OBTS
23 process, it was determined that the same literature
24 search and evaluation of potential treatments would be

1 applicable for the morpholine as for the OBTS process,
2 which I have already described.

3 In 1996 Noveon spent more than \$700,000 to
4 install a new BHS filter system improving significantly
5 the dewatering of the BBTS and the Curite 18 streams and
6 reducing loss of solids to the waste treatment system.
7 The BHS system technology relies on a series of plates
8 with a filter cloth media that are located on the outer
9 circumference of a rotating hub. Each plate goes
10 through a fill step, which we call filtration, two wash
11 steps, an air blow step, and a cake discharge step.

12 Prior to returning to a fill step, it goes
13 through a cloth cleaning step. Due to the nature of the
14 technology, solids removal is very efficient and very
15 dependent upon the nature of the cloth collecting the
16 product. As a result of this improvement, the process
17 efficiency increased by 47 pounds per charge and reduced
18 the amount of BBTS to the wastewater treatment system by
19 100,000 pounds annually in 1997 and continues today at
20 this rate.

21 Based on summer work in 2000 and 2001
22 performed by several of Noveon's P2 intern students,
23 specifically, Rebecca Forbeck and Adam Lock, under the
24 Illinois EPA's pollution prevention program, Noveon

1 optimized the filtration media of its BHS rotary filter
2 media. With this improvement, the better capture of the
3 accelerator product occurred as it was processed through
4 the filtration operation, reducing 66,000 pounds per
5 year of product, of BBTS, to the waste treatment system.

6 In addition to this work, efforts were
7 conducted to improve loss of product from the BBTS fines
8 scrubber used to prevent particulate emissions to the
9 air from the fluid bed dryer. Through Noveon
10 engineering efforts and also some later work done by the
11 2002 P2 intern student, Crystal Johnson, fines loss to
12 the wastewater treatment system was reduced further
13 using a polymer coagulant that improved the collection
14 and the processing of small particles back to the BHS
15 rotary filter, reducing by 123,000 pounds per year the
16 amount of BBTS small particles or fines to the
17 wastewater treatment system. Noveon was recognized for
18 this effort by the Illinois EPA and IWMRC with the 15th
19 Annual 2002 Governor's Award for Pollution Prevention.

20 Finally, in 2003, Noveon's engineers
21 optimized the tertiary butyl amine recovery system by
22 linking the vacuum control valve of the recovery system
23 to the major heat load on the tertiary butyl amine
24 recovery condenser. As a result of providing greater

1 vacuum control, the tertiary butyl amine recovery was
2 improved by five percent and reduced losses to the
3 wastewater treatment system by 185,000 pounds per year.
4 Noveon received -- was recognized for this effort by the
5 17th Annual Governor's P2 Award.

6 As already mentioned, the above activities
7 represent source reduction activities investigated or
8 completed by the plant to reduce ammonia precursors to
9 the waste treatment system. As most environmental
10 engineers recognize, the best starting point to solve a
11 waste issue is through source reduction. Noveon has
12 made extensive efforts to reduce the ammonia in the
13 wastewater and expended a great deal of money and time
14 to reduce solids and liquid losses to the waste
15 treatment system.

16 In light of the Illinois EPA's treatment
17 criteria, the plant conducted a number of in-house
18 activities to determine whether there were appropriate
19 end-of-pipe options for reducing ammonia discharge from
20 its wastewater treatment facility. More complete
21 evaluation of these activities will be provided by our
22 consultant, Houston Flippin, of Brown and Caldwell.
23 However, I would like to discuss several of the
24 assessments that were completed online as a full-scale

1 experiment within the current wastewater treatment
2 system.

3 In 1997 and in 1999 the Noveon plant
4 conducted a pretreatment experiment for several months
5 of the PC waste stream. The pretreatment involved
6 lowering the pH of this stream using ferric chloride and
7 the precipitation and removal of solids prior to
8 neutralizing the stream and feeding the effluent back to
9 the rest of the wastewater treatment system, namely, the
10 primary, secondary and tertiary treatment system.
11 Noveon incurred a monthly cost of approximately \$40,000
12 to evaluate the effects of solids removal at a lower pH.
13 The effluent showed a 25 percent COD reduction along
14 with a reduction in mercaptobenzothiazole, which was
15 approximately 50 percent. In spite of this treatment
16 the system did not show any evidence of nitrification in
17 the biotreaters. The above experiments involve renting
18 equipment including tanks, a plate and frame press,
19 flocculators, and providing contract labor to run the
20 system 24 hours a day.

21 During the summer of 2000 the Noveon plant
22 conducted full-scale aeration studies of air stripping
23 for various effluents through the modification of the
24 east biotreater that had been taken out of normal

1 biological service and converted to a temporary air
2 stripper using its normal air diffusion system and
3 floating aerators and also by the installation of a
4 floating aerator in the Noveon waste tank or the PC
5 tank. These modifications were estimated to cost
6 approximately \$50,000. The following trials were
7 conducted: Aeration of the primary clarifier effluent
8 resulted with the aeration was unable to reduce the
9 ammonia-nitrogen below 110 milligrams per liter. Also
10 we were not able to control the pH to the desired level
11 due to the method of cost and condition. In this study
12 we also evaluated a 10-horsepower and 100-horsepower
13 surface aerator during this experiment.

14 The second trial that we evaluated was the
15 aeration of Noveon waste stream, specifically, for the
16 PC tank. A 100-horsepower surface aerator was installed
17 in the PC tank and the tank influent and effluent was
18 characterized for TKN removal, morpholine removal,
19 tertiary butyl amine removal. The outcome was that TKN
20 was reduced during the trial as was the tertiary butyl
21 amine; however, there was no morpholine removal. All of
22 these experiments had many variables that could not be
23 controlled due to the evaluation being conducted on a
24 full production sized scale.

1 The above trials were stopped due to the
2 difficulty of controlling pH and also due to production
3 demands. Again, the testimony of Houston Flippin will
4 more fully address the potential of air stripping
5 ammonia from the Noveon wastewaters.

6 And in conclusion, in light of all the above
7 source reduction and end-of-pipe activities conducted by
8 the plant, the plant has determined that there is no
9 silver bullet that will allow its wastewater treatment
10 system to comply with the three milligram and six
11 milligram ammonia standard that the Illinois EPA is
12 attempting to impose by application of 35 Illinois
13 Administrative Code, paragraph 304.122. Due to the
14 ubiquitous nature of the ammonia precursors located
15 throughout the facility, no single pretreatment lends a
16 final feasible solution. The various treatments studied
17 in 1990 are extremely expensive to install and operate,
18 and, in many cases, would result in environmental
19 impacts of far more concern than the facility's current
20 discharge. That concludes my testimony.

21 MR. LATHAM: Thank you. Mr. Hearing Officer, now
22 that he has read his written testimony into record, I
23 would like to move that we admit this as part of the
24 record and our Petitioner's Exhibit Number 6 in the

1 Adjusted Standard proceeding.

2 HEARING OFFICER HALLORAN: Ms. Williams?

3 MS. WILLIAMS: No objection.

4 HEARING OFFICER HALLORAN: That will be admitted as
5 Petitioner's Exhibit Number 6. Anything further,
6 Mr. Latham?

7 MR. LATHAM: I have nothing further.

8 HEARING OFFICER HALLORAN: Ms. Williams?

9 CROSS-EXAMINATION

10 BY MS. WILLIAMS:

11 Q Mr. Giffin, if I understand your testimony,
12 for the period of about 1983 to 1992, you were working
13 for the Geon portion of the Henry plant; is that
14 correct?

15 A Actually, it was about 1978 until 1980. '82
16 or '83, when I became the plant engineer, I was over the
17 entire facility.

18 Q When did you come to Noveon?

19 A I came back to Noveon being the plant
20 engineer of the facility which included both PolyOne and
21 Polymer Chemicals and Noveon. And under that
22 responsibility, I had the wastewater treatment system.

23 Q And it wasn't until 2001 that the actual
24 Noveon Corporation was created; is that correct?

1 A In 1993, that was when Geon became -- was
2 spun off as a separate company and then Noveon was
3 separated when it became Noveon in 2001.

4 Q Was there a parent company to Noveon?

5 A Noveon is the company.

6 Q On page 4 I think there is some discussion
7 about this famous quote from Mr. LaHood who was a
8 staffer at that time. And you talk about how it was
9 given at an awards ceremony. Can you tell us a little
10 bit more about the grant award you mentioned there?

11 A This was the grant award ceremony for PolyOne
12 which was our sister plant, and I was not present.

13 Q Okay. You missed the famous quote?

14 A I borrowed the quote.

15 Q But the grant was to pay for what?

16 A At that time I think the grant was used to
17 pay for training. I'm not certain exactly what the
18 grant was used to pay for.

19 Q So this wasn't related to the boiler that you
20 talked about?

21 A No, it was not.

22 Q So that was separate?

23 A That was separate from the boiler. There was
24 a separate funding from the State of Illinois for the

1 boiler.

2 Q I see. So that was a state grant that paid
3 for the boiler versus a federal grant?

4 A That's correct.

5 Q And that boiler is also used to power the
6 Noveon process; is that correct?

7 A That boiler is used to provide steam for both
8 PolyOne and also for Noveon.

9 Q And so if I understand it correctly, the
10 State helped finance this boiler that PolyOne runs that
11 provides power to both plants, and then Noveon runs the
12 wastewater treatment side of it which also provides
13 treatment to both plants; is that correct?

14 A That's correct.

15 Q Can you tell us about how much PolyOne
16 contributes to the cost of that utility service?

17 MR. LATHAM: Which service?

18 Q The wastewater treatment service that Noveon
19 provides.

20 A It's based on the amount of influent from
21 each company. And their part is somewhere around 55
22 percent.

23 Q So if they -- when it talks
24 about, someplace, I think, in your testimony -- but if

1 we say, for example, that PolyOne is contributing 60
2 percent of the effluent at times they would be paying 60
3 percent of the cost of operating the wastewater
4 treatment facility?

5 A It's a much more complicated equation that's
6 based on the amount of suspended solids in the flow and
7 their organic load, and that is all factored into
8 determining their contribution of each company.

9 Q Do you know if there is going to be any
10 information provided by any of the other witnesses as to
11 what those figures have resulted in?

12 A Not to my knowledge. I don't know.

13 Q And, also, you state in your prefile
14 testimony that you read for us that Noveon employs about
15 75 people?

16 A That's correct.

17 Q And in the Petition for Adjusted Standard it
18 had said 85 people. Does that reflect a reduction
19 between the time that the Adjusted Standard was filed
20 and as we sit here today?

21 A Yes, it does.

22 Q And so, I guess, by your figures of six jobs
23 for every one, we are talking that's 60 jobs if those
24 economists are right?

1 A That's correct.

2 Q There are a couple of acronyms I would like
3 to ask you if there is a definition to them. When you
4 talk about OBTS and BBTS, I don't know what the heck
5 that means. Does it mean something that would be useful
6 to us?

7 A Well, I could tell you what OBTS means if you
8 want to really know.

9 Q I don't know if I do or not. Does the Board
10 want to know that?

11 HEARING OFFICER HALLORAN: The Board may want to
12 know.

13 MR. LATHAM: Yes. Why don't you go ahead and tell
14 us what OBTS is.

15 A OBTS is N-oxydiethylene, 2 benzothiazole
16 sulfonamine.

17 Q Thank you. I think I like OBTS better.

18 A We do, too.

19 Q How about the BBTS?

20 A BBTS is N-tert-butyl, 2 benzothiazole
21 sulfonamine.

22 HEARING OFFICER HALLORAN: Just for the record, the
23 witness is reading from his palm pilot.

24 Q What you call the source reduction efforts, I

1 guess, what they are termed in the testimony, you list
2 several things and the number 2, I guess, it is on page
3 7 -- it also corresponds with Exhibit 3 -- appear to be
4 one to me that I didn't hear a conclusion from you as to
5 why it wasn't implemented?

6 A The BBTS process does have a stripping column
7 that we utilize. The stripping column currently used is
8 of much smaller size than what we would need to do the
9 entire stream. But what we did do from the pollution
10 prevention standpoint was to try to maximize that system
11 without replacing the whole unit which would have been
12 very, very expensive. And so that's --

13 Q So does that correlate to some of the
14 activity you talk about later on in 6 and 7?

15 A Yeah. The last one we did in 2003.

16 Q That's very helpful. And with regard to
17 those, the last 6, 7 and 8, I guess, the last three
18 projects you talk about, they both provide --

19 MR. LATHAM: On page 9 and 10?

20 Q Yes. On pages 9 and 10. They all provide
21 figures of a poundage that was recovered from the
22 different -- I think it was 100,000 plus 66,000 plus
23 123,000 plus 185,000. I assume those are all separate
24 additional reductions?

1 A That's correct.

2 Q Are you able, at all, to quantify whether
3 there has been any reduction in ammonia levels based on
4 those?

5 A No. I have not been able to.

6 Q I would like you to take a look at Exhibit 5.
7 Up in the upper left-hand corner of this flow diagram
8 you show flow rates going into the tank in gallons per
9 minute?

10 A Yes.

11 Q The numbers are not adding up for me here.
12 You have 10, 25, 55, 55 and then you have a total of
13 about 90. Can you explain that?

14 A I'm not sure. Oh, in regard to the 90
15 gallons per minute?

16 Q I get something like 145 if you add all those
17 together.

18 A What that represents is when any one of those
19 processes is operating, that's what it's capable of
20 putting out. But not all of the processes are able to
21 run simultaneously. So, typically, they react; the
22 product mix would be approximately 90 gallons per
23 minute.

24 Q Is there a maximum that the system can

1 handle?

2 A It was not --

3 Q This --

4 A It was not perfected to that point.

5 Q I guess I'm just trying to get some more
6 information to understand these flow figures in general.
7 Just based on this limited exhibit, which maybe isn't a
8 good representation of where we get the flow figures in
9 general, but that's something that we will try and
10 develop further in some of the additional testimony.

11 (Pause in proceedings.)

12 Q I see another acronym. How about BHS? BHS
13 filter is what it says.

14 HEARING OFFICER HALLORAN: What page are you on?

15 THE WITNESS: That's on 9.

16 MR. LATHAM: Top of page 9.

17 A I don't know what the -- what that translates
18 to. It's a German filter that we brought over from
19 Germany, the technology was German.

20 Q So it stands for something in German; is that
21 what you are telling us?

22 A It stands for something that was carried with
23 equipment in, without interpretation.

24 Q In Number 8 you talk about the fact that you

1 were able to reduce the TBA recovery by 5 percent which
2 equated to 185,000 pounds per year, correct?

3 A That is correct.

4 Q So would it be correct to -- if the total
5 then would be the remaining 95 percent, we equate to a
6 total of how much TBA is in the system?

7 A I would expect that.

8 Q Rick has done some quick figures here.

9 So, I mean, obviously, I don't know if you
10 have a calculator, but I can see if this sounds about
11 right to you. Rick's calculations showed you were able
12 to reduce by about 506 pounds per day; and if that was 5
13 percent of the total output, that would equate to a
14 total of about 10,000 pounds per day of TBA. Does that
15 seem in the ballpark?

16 A I would have to review that further to
17 remember.

18 Q With your knowledge of the plant process,
19 does 10,000 pounds per day seem roughly in the ballpark
20 of what you would be using a day?

21 A 10,000 pounds per day of tertiary butyl
22 amine?

23 Q Yes.

24 A I really can't comment on it.

1 Q But this is the stuff that's going through
2 the system to the wastewater? The remaining 95 percent
3 what's going through the system to the wastewater?

4 A The TBA recovery would be the total amount of
5 TBA that was fed to it and that it improved the
6 efficiency of that TBA recovery by 5 percent. And as
7 far as the -- what was actually going to the waste
8 treatment, I would have to have some other data before
9 me before I could calculate that.

10 Q What kind of data would help one calculate
11 that?

12 A I would have to know what the input of that
13 is.

14 Q So in front of you today you don't have that?

15 A No, I don't.

16 Q You talk about in 1997 -- on page 11, the
17 testing of the pretreatment on the PC waste stream?

18 A Yes, ma'am.

19 Q Can you tell us whether there was adequate
20 alkalinity and oxygen supplied during that test to
21 achieve nitrification?

22 A Again, I think I'll probably let Houston
23 testify to that. But in one of the other cases -- and I
24 think it was in the 1999 one -- we actually shipped in

1 nitrifiers at the end of the experiment to determine
2 whether we could kick off nitrification in our system.
3 At that point in time we did have adequate oxygen and
4 whatever alkalinity that was in the system that would
5 support the some nitrification.

6 Q Do you know what it is about the waste stream
7 that causes problems with the efficiency of oxygen?

8 A With the efficiency of oxygen?

9 Q With the efficiency of oxygen transfer.

10 A Not -- I don't personally know. It's just
11 the nature of the -- our waste. Again, I think Houston
12 will testify concerning the alpha level of the oxygen
13 transfer.

14 Q But you don't know what this alpha --

15 A Why it's different, no, I don't know.

16 Q When you state in that same paragraph that in
17 spite of the treatment the system did not show evidence
18 of nitrification. What did you look to to determine
19 that?

20 A At that point in time they would sample the
21 effluent to determine that, if there was any reduction
22 in ammonia and any presence of nitrates or nitrites.

23 Q They would sample the final effluent?

24 A Yes.

1 Q Just a couple more things. On page 5 you
2 talk about the addition in 1997 of an additional -- it
3 looks like one million gallons of aeration?

4 A That's correct.

5 Q And you state that this was in order to
6 provide more complete treatment of the wastewater.
7 Isn't it true that this was installed because of a new
8 process in addition that was being added to the PC waste
9 stream?

10 A Actually, it was installed as a result of
11 increased productivity in some of our processes. And we
12 were trying to make sure that we had sufficient aeration
13 volume to handle any waste load that was created from
14 that incremental increase.

15 Q So you were producing more product at that
16 time; is that correct?

17 A That's correct.

18 Q And this was added to keep you at the status
19 quo as opposed to really --

20 A That was to ensure that we complied with our
21 BOD(5) and our suspended solids.

22 Q At the very end of your testimony you state
23 that the plant has determined there is no silver bullet
24 to allow it to comply with 3 milligrams per liter and 6

1 milligrams per liter. Do you have an opinion on what
2 limits the plant's capability?

3 A No, I don't.

4 MS. WILLIAMS: That's all I have.

5 HEARING OFFICER HALLORAN: Thank you, Ms. Williams.
6 Mr. Latham, any redirect?

7 MR. LATHAM: Just one quick question.

8 REDIRECT EXAMINATION

9 BY MR. LATHAM:

10 Q You were asked about the source reduction
11 efforts on pages 9 and 10, and whether you could
12 quantify any ammonia reduction as a result of those
13 source reduction efforts. Can you tell us why you did
14 not or could not quantify what the ammonia reductions
15 were with any results of those source reduction efforts?

16 A The products themselves are amine-bearing.
17 So that if you do lose a pound of the product to the
18 wastewater system -- the question is whether it remains
19 as a product or whether it gets broken down back into
20 precursors that could contribute to ammonia. So we
21 don't really have any way of measuring that. If it
22 stays as a product, then when it goes to the primary
23 waste treatment system, it's removed as a solid. And
24 it's removed as a solid with amine content. So,

1 therefore, that solid is removed along with the amine.

2 If it gets broken down, then there may be a
3 solids contribution, but there may be a free amine in
4 the water that would go into the waste treatment system
5 and the biotreater system and then at that point in time
6 it would contribute to the ammonia-nitrogen in the
7 effluent. There is no way of knowing what that ratio
8 is.

9 MR. LATHAM: Thank you, Mr. Giffin.

10 HEARING OFFICER HALLORAN: Ms. Williams, any
11 recross?

12 RE CROSS-EXAMINATION

13 BY MS. WILLIAMS:

14 Q Just along the same line, I think you just
15 explained that all you had to look at really is the
16 final effluents?

17 A That's correct.

18 Q Do you do that after it's combined with the
19 pond water or before?

20 A I'm not sure exactly where the samples were
21 taken for those specific experiments.

22 MS. WILLIAMS: Thank you. That's all I have.

23 HEARING OFFICER HALLORAN: Thank you, Ms. Williams.

24 Any re- redirect, Mr. Latham?

1 MR. LATHAM: No, sir.

2 HEARING OFFICER HALLORAN: I'm terribly remiss in
3 my introduction to this Adjusted Standard Petition. I
4 neglected to mention that our esteemed technical advisor
5 Alisa Liu is in the audience. And I don't know if at
6 this point, Ms. Liu, do you have any questions of
7 Mr. Giffin?

8 MS. LIU: Mr. Hearing Officer, I would just simply
9 request that we have the opportunity to retain this
10 witness to be recalled later. Several of the things he
11 referred to will be followed up by Mr. Houston Flippin's
12 testimony. And we would like to ask him some questions
13 related to that afterwards.

14 HEARING OFFICER HALLORAN: Mr. Latham, any problem
15 with recalling Mr. Giffin tomorrow?

16 MR. LATHAM: Not on our end.

17 HEARING OFFICER HALLORAN: You know, it is getting
18 late in the day and I have given Ms. Williams some extra
19 homework to do to take a look at those documents I think
20 Mr. Kissel tendered. I think what we will do, we will
21 call it a day. Mr. Giffin, you can step down. We'll
22 call it a day and I would ask that the participant
23 parties would remove their cans and bottles out of the
24 courtroom. I think there is a trash can outside. The

1 real judge will be here tomorrow. But in any event,
2 have a safe drive and this hearing is adjourned until
3 tomorrow at 9:00 a.m. Thank you very much.

4

5 (Whereupon, the proceedings adjourned
6 at 5:20 p.m., to be reconvened at
7 9:00 a.m., February 18, 2004.)

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1 STATE OF ILLINOIS)
) SS
2 COUNTY OF PEORIA)

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CERTIFICATE OF REPORTER

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I, GALE G. EVERHART, CSR-RPR, Notary Public

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in and for the County of Peoria, State of Illinois, do

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hereby certify that the foregoing transcript, consisting

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of pages 1 through 57, both inclusive, constitutes a

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true and accurate transcript of the original

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stenographic notes recorded by me of the foregoing

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proceedings had before Hearing Officer Bradley P.

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Halloran, in Peoria, Illinois, on the 17th of February,

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A.D. 2004.

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Dated this 25th day of February, A.D. 2004.

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GALE G. EVERHART, CSR-RPR
Illinois License No. 084-004217

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