

1 BEFORE THE ILLINOIS POLLUTION CONTROL BOARD

2 IN THE MATTER OF:)

)

3 PETITION OF RECYCLE)
TECHNOLOGIES, INC., FOR) AS No. 97-9

4 AN ADJUSTED STANDARD)

UNDER 34 ILL. ADMIN.)

5 CODE 720.131(c))

6

7

8 The following is the transcript of a hearing

9 held in the above-entitled matter, taken

10 stenographically by Caryl L. Hardy, CSR, a notary

11 public within and for the County of Cook and State

12 of Illinois, before Amy L. Jackson, Hearing Officer,

13 at 404 North Wood Dale Road, Second Floor, City

14 Council Chambers, Wood Dale, Illinois, on the 1st

15 day of April 1998, A.D., commencing at the hour of

16 10:10 a.m.

17

18

19

20

21

22

23

24

1 APPEARANCES:

2

HEARING TAKEN BEFORE:

3

ILLINOIS POLLUTION CONTROL BOARD,
4 600 South Second Street
Suite 402
5 Springfield, Illinois 62704
(217) 524-8507
6 BY: MS. AMY L. JACKSON

7

PANCRATZ, RIFFNER, & SCOTT
8 BY: MR. ROBERT G. RIFFNER
1920 North Thoreau Drive
9 Suite 100
Schaumburg, Illinois 60173
10 (847) 303-0107

11

Appeared on behalf of the Petitioner;

12

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
13 BY: MR. DONALD L. GIMBEL
1701 South First Avenue
14 Maywood, Illinois 60153
(708) 338-7900

15

Appeared on behalf of the Agency.

16

17 ALSO PRESENT:

Mr. Scott Hacke

18

19

20

21

22

23

24

1 INDEX

2 WITNESSES:	PAGE
3 EDWARD R. EATON	
4 Direct Examination by Mr. Riffner.	8
Cross Examination by Mr. Gimbel.	38
5 Redirect Examination by Mr. Riffner.	43
6	
RONALD RABINOWITZ	
7	
Direct Examination by Mr. Riffner.	44
8	
9 GARY L. GUNDERSON	
10 Direct Examination by Mr. Riffner.	49
Cross Examination by Mr. Gimbel.	79
11 Examination by the Hearing Officer	80
Recross Examination by Mr. Gimbel.	82
12	
13 EDWARD STAHL	
14 Direct Examination by Mr. Riffner.	86
15	
16	
17 EXHIBITS MARKED FOR IDENTIFICATION	
18 Petitioner's Exhibit No. 1	16
Petitioner's Exhibit No. 2	22
19 Petitioner's Exhibit No. 3	27
Petitioner's Exhibit No. 4	34
20 Petitioner's Exhibit No. 5	37
Petitioner's Exhibit No. 6	37
21 Petitioner's Exhibit No. 7	43
Petitioner's Exhibit No. 8	51
22 Petitioner's Exhibit No. 9	52
Petitioner's Exhibit No. 10.	53
23 Petitioner's Exhibit No. 11.	56
Petitioner's Exhibit No. 12.	64
24 Petitioner's Exhibit No. 13.	64
Petitioner's Exhibit No. 14.	65

1 EXHIBITS MARKED FOR IDENTIFICATION CONT'D. PAGE

2 Petitioner's Exhibit No. 15. 66
Petitioner's Exhibit No. 16. 67
3 Petitioner's Exhibit No. 17. 74
Petitioner's Exhibit No. 18. 75
4 Petitioner's Exhibit No. 19. 76
Petitioner's Exhibit No. 20. 77
5 Petitioner's Exhibit No. 21. 77

6

7

8 EXHIBITS ADMITTED INTO EVIDENCE

9 Petitioner's Exhibit Numbers 1 through 21. . . . 97

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

1 THE HEARING OFFICER: All right. Good morning.

2 My name is Amy Jackson, and I'm the hearing officer

3 for the Illinois Pollution Control Board. For the

4 record, I will note that it is approximately

5 10:10 a.m. on April 1st, 1998. I also note that

6 members of the public are not currently present.

7 The proceeding before us today is Adjusted

8 Standard 97-009, In The Matter Of: Petition of

9 Recycle Technologies, Incorporated, for an adjusted

10 standard from 35 Illinois Administrative Code

11 720.131, Subparagraph C.

12 The petition of Recycle Technologies seeks a

13 solid waste determination for used antifreeze.

14 Currently, Recycle Technologies operates an on-site

15 antifreeze recycling business. The entire recycling

16 process is currently performed at the generator's

17 facility. It involves the used antifreeze being

18 filtered and then mixed with various additives such

19 as scale and corrosion inhibitors, coloring, and

20 defoamers.

21 With the adjusted standard petition, Recycle

22 Technologies proposes taking the filtered antifreeze

23 to a central processing facility where the filtered

24 product would then be further treated and refined

1 prior to being returned to the initial generator.
2 Recycle Technologies seeks a determination in this
3 adjusted standard proceeding that the filtered used
4 antifreeze is not a waste but rather is a raw
5 material to be used in the manufacture of recycled
6 antifreeze.

7 Before we begin, I would like to briefly explain
8 the board's process. First, you should know that it
9 is the board, not me, that will make a decision in
10 this case. My job as a hearing officer requires me
11 to conduct the hearing process in a neutral and
12 orderly manner so we have a clear transcript of
13 these proceedings. It is important that the board
14 be able to follow the record we create here today.
15 It is also my responsibility to assess the
16 credibility of any witnesses testifying today.

17 At times, I may ask for clarification for the
18 record or ask questions which I believe are
19 necessary for the board to fully understand what is
20 taking place.

21 The board's procedural rules and the
22 Environmental Protection Act provide that members of
23 the public shall be allowed to speak or submit
24 written statements at hearing. However, any person

1 offering testimony today shall be subject to cross
2 examination. Additionally, any such statements must
3 be relevant to this case and to the issues currently
4 before the board. I will call for any statements
5 from members of the public if members of the public
6 do appear throughout the course of these
7 proceedings.

8 Finally, I would caution everyone that a board
9 hearing is much the same as being in court, and I
10 expect everyone to act appropriately and with proper
11 decorum.

12 I will ask the parties to make their appearances
13 for the record. We will start with the Petitioner.

14 MR. RIFFNER: For the record, Bob Riffner. I'm
15 the attorney representing Recycle Technologies.

16 THE HEARING OFFICER: And for the agency?

17 MR. GIMBEL: Donald Gimbel.

18 THE HEARING OFFICER: Mr. Riffner and Mr. Gimbel,
19 do either one of you wish to make an opening
20 statement?

21 MR. RIFFNER: I don't believe so.

22 MR. GIMBEL: No.

23 THE HEARING OFFICER: Mr. Riffner, you may call
24 your first witness.

1 MR. RIFFNER: I will call Mr. Edward Eaton.

2 THE HEARING OFFICER: And I will ask the court

3 reporter swear him in.

4 (The witness was duly sworn.)

5 EDWARD R. EATON,

6 called as a witness herein, having been first duly

7 sworn, was examined upon oral interrogatories, and

8 testified as follows:

9 DIRECT EXAMINATION

10 BY MR. RIFFNER:

11 Q Mr. Eaton, state your name for the record

12 spelling your last name, please.

13 A My name is Edward Eaton, E-a-t-o-n.

14 Q And are you currently employed?

15 A Yes, I am.

16 Q And with whom are you employed?

17 A I am employed with the Penray Companies,

18 Incorporated.

19 Q And what is the business of the Penray

20 Companies?

21 A We are specialists in the manufacture of

22 high performance automotive chemicals.

23 Q Does that include antifreeze?

24 A Yes, it does. Well, no. Excuse me. It

1 does not.

2 Q Okay. Does that include antifreeze

3 additives?

4 A Yes, it does.

5 Q Okay. Could you describe your academic

6 background?

7 A I'm a chemical engineer educated at Bucknell

8 University and the University of Utah.

9 Q And when did you receive those degrees?

10 A 1978, University of Utah.

11 Q Do you have a Master's degree?

12 A I do not.

13 Q Okay. And then since you graduated, can you

14 run through your employment background since that

15 time?

16 A I served as the automotive division manager

17 for Intermountain Farmers Association in Salt Lake

18 City for 11 years and then went to a company in

19 Buffalo, New York, known as FPPF Chemical where I

20 became involved with coolant recycling. As it was

21 born, there was a product invented there which is

22 known in the industry as glyclean, g-l-y-c-l-e-a-n.

23 Glyclean is a filtration-based process which gave

24 birth to the recycling industry in the United States

1 and proved to have certain shortcomings.

2 I was recruited and went to work about two years
3 after joining FPPF for an engineering company in
4 Windsor, Connecticut, by the name of Standyne,
5 S-t-a-n-d-y-n-e. Standyne is a well-known fuel
6 injection manufacturing company that was seeking to
7 broaden its business opportunities. While at
8 Standyne, I was asked for opportunities that I may
9 know of, and I suggested that given the resources
10 and engineering capabilities that existed at
11 Standyne that an improved coolant recycling
12 technology might be of interest as a research and
13 development project.

14 Working with engineers, including John Huff at
15 Standyne, we developed a reverse osmosis-based
16 coolant recycling technology after exploring various
17 alternatives and from that experience became
18 involved with the chemists at Nalco Chemical here in
19 Illinois.

20 The people who were running the Penray and other
21 subsidiaries of Nalco Chemical purchased those
22 businesses approximately six years ago and asked me
23 to join them at that time as their director of
24 technical services where I have been until now.

1 Q Have you published in the field of coolant
2 recycling?

3 A I have published extensively in the field of
4 coolant recycling. I write from time to time for a
5 magazine in the radiator industry known as Radiator
6 Profits. I also have published seven technical
7 papers for ASTM and the Society of Automotive
8 Engineers.

9 Q Could you run through briefly the scope of
10 the seven papers that you yourself have filed?

11 A The first paper with which I was involved is
12 a paper authored by John Huff. It is SAE paper
13 921635. This paper is the introduction to the
14 industry of reverse osmosis and is entitled Using
15 Reverse Osmosis to Recycle Engine Coolant.

16 Q And when was that published?

17 A This was published in 1992. It was
18 presented September 14th at the International Off
19 Highway and Power Plant Congress and Exposition in
20 Milwaukee.

21 Q And what was your contribution to this
22 article?

23 A I am the holder -- I mean the inventor of
24 the record on the patent for this system.

1 Q For the reverse osmosis system?

2 A Yes, I am.

3 Q Any other papers?

4 A The next one that I thought to bring with me
5 was published in 1996. After the reverse osmosis
6 technology had been in the field for a few years, we
7 wanted to evaluate the performance of the fluids it
8 was developing, generating, so we did an
9 investigation that we reported in SAE paper 962239
10 entitled Engine Reliability Experience of Mixed
11 Vehicle Fleets Operating on Engine Coolant Recycled
12 with Reverse Osmosis Technology, and this I authored
13 by myself with data -- or from data that was
14 accumulated from customers that were using reverse
15 osmosis technology.

16 Q And again, that was 1996 that that was
17 published?

18 A It was 1996. The first two digits of an SAE
19 paper indicate the year of publication.

20 The next one is a 1997 paper. It is SAE paper
21 971773 and is primarily authored by myself with the
22 assistance of three RO operators. RO is an industry
23 term for reverse osmosis and is entitled Modern
24 Reverse Osmosis Recycling of Used Engine Coolant.

1 It reviews the state of the art in 1997.

2 Q Okay.

3 A Then the next two papers that I have brought
4 with me I believe are both ASTM papers that were
5 presented at a symposium on engine coolants.

6 Q For the record, what does ASTM stand for?

7 A I'm sorry. The American Society --
8 actually, I believe the name of the organization is
9 formally ASTM now, but it was formerly known as the
10 American Society for Testing Materials. It is an
11 international -- which is why they have just gone to
12 ASTM as a name. It's now an international standards
13 setting organization.

14 Q And they have standards set for the
15 recycling of antifreeze; is that correct?

16 A That is true.

17 Q Okay.

18 A The primary standards that are typically
19 referred to are ASTM standards.

20 Q And it's true that the car companies such as
21 GM and Ford have also got their own standards; is
22 that correct?

23 A Typically, the OEM companies will adopt ASTM
24 standards and then add additional requirements if

1 they have reason to believe that another performance
2 requirement is required for their vehicles.

3 Q Okay.

4 A This is an ASTM paper entitled Recycling
5 Used Engine Coolant Using High Volume Stationary
6 Reverse Osmosis Equipment. It was authored by
7 Marvin Haddock, H-a-d-d-o-c-k, and myself and is of
8 the type of technology that Mr. Gunderson proposes
9 to use. It reviews the high level of purity and the
10 various treatment options that are available in
11 using this state of the art technology and presents
12 the performance data for what we currently have
13 available in the way of machinery in stationary
14 embodiments.

15 In some areas, the development of reverse osmosis
16 technology has taken a mobile equipment tact, and at
17 that same symposium, the state of that art was also
18 presented. I apologize. I have brought a copy of
19 the same paper, but there was a similar paper
20 development -- I'm sorry. This is correct.
21 Development of Mobile On-Site Engine Coolant
22 Recycling Technology Using Reverse Osmosis, and this
23 was published by William Kughn, K-u-g-h-n, and
24 myself.

1 Q And that would be essentially the same
2 process as Mr. Gunderson is proposing except it's
3 mounted on some vehicle?

4 A And much smaller and less efficient.

5 Q Okay.

6 A That is the extent of the papers I have
7 brought with me that I have published. I have also
8 brought some other general industry information.

9 Q Okay. How many types of antifreeze are
10 being used really in the market right now?

11 A I'm going to ask that you bear with me as I
12 refer back to an article I wrote for Radiator
13 Profits that was published in the May-June 1996
14 issue. I wrote an article known -- which is
15 entitled Now in 31 Flavors, and there aren't 31, but
16 there are a remarkable number of antifreezes in the
17 marketplace today.

18 Interestingly, it is not legally required that
19 antifreeze marketed to consumers in Illinois meet
20 ASTM standards, and we have, in fact, identified a
21 number of marketed here that do not.

22 But in general, there are two categories of
23 antifreeze: Those for light-duty applications and
24 those for heavy duty. They are subdivided into

1 types of technology. The two primary divisions in
2 each, light-duty and heavy duty, would be those
3 inhibited by inorganic, also known as conventional
4 technologies, and those inhibited by organic or
5 carboxylic acid technologies, sometimes referred to
6 as long-life or extended service interval. An
7 example of that latter would be the General Motors
8 DEX-COOL, which is dyed orange for identification.

9 MR. RIFFNER: I will mark this as Petitioner's
10 Exhibit 1 for identification.

11 (Petitioner's Exhibit No. 1 marked for
12 identification, 4-1-98.)

13 THE HEARING OFFICER: We will go off the record
14 for a second.

15 (Whereupon, a discussion was held off the
16 record.)

17 THE HEARING OFFICER: Back on the record.

18 BY MR. RIFFNER:

19 Q I will show you what I have marked as
20 Petitioner's Exhibit 1 for identification. It's two
21 separate containers that are clear that have liquid
22 inside of them. Could you describe generally what
23 these two represent in the coolant industry of
24 recycling of antifreeze?

1 A There are two sample bottles. The one on
2 the left has a translucent green fluid in it, the
3 one on the right a translucent orange-dyed fluid.
4 These are samples that have the appearance of a
5 traditional antifreeze, being the green, and a new
6 organic acid inhibited antifreeze on the right,
7 which is typically dyed orange. However, the colors
8 are dyes that are added by manufacturers and do not
9 necessarily indicate the presence or lack of
10 presence of any particular inhibitor technology.

11 Q But as a general rule right now, would it be
12 safe to say that as a general rule the orange one is
13 the organic method that's typically associated with
14 the organic genre of coolants and the green is the
15 typical antifreeze, the inorganic, or as you called
16 it, conventional type of antifreeze?

17 A Unfortunately, we have already seen cases --
18 I understand where you are trying to go, but we have
19 already seen cases where people are -- for
20 profit-earning reasons are playing with the colors.
21 However, I can tell you that if you were to buy a
22 brand new car and it came with orange antifreeze,
23 that would be an organic acid antifreeze because the
24 engine -- the vehicle manufacturers are subscribing

1 to that standard, which is an informal convention at
2 this point. And if you were to purchase a brand new
3 vehicle and it had green antifreeze in it, then this
4 would contain inorganic conventional inhibitors.

5 Q Is the base substance of both of these
6 ethylene glycol?

7 A Yes, it is.

8 Q And so the difference between the green or
9 what we will call for right now the conventional
10 antifreeze as opposed to the organic antifreeze is
11 the type of inhibitors that are put into or mixed
12 with the ethylene glycol? Is that correct?

13 A It is correct.

14 Q And is there a life expectancy, so to speak,
15 with the difference between the green conventional
16 and the orange organic?

17 A This is a matter of debate. The orange type
18 of technology is a European technology and has been
19 brought to the United States to be marketed as an
20 extended service interval coolant. However, a study
21 which was performed by the Ford Motor Corporation
22 and published at an ASTM symposium a number of years
23 ago authored by Norman Adamowicz suggested that
24 there was no performance advantage to the organic

1 acid technology.

2 Q Okay. So when you said that you're finding
3 that people are dying it certain colors, is it
4 now -- is what you are saying that people are dying
5 with it the orange color to get the benefit or the
6 perceived benefit that this is the extended life
7 antifreeze?

8 A The orange antifreeze is much more expensive
9 and there are less than ethical individuals who are
10 producing inorganically inhibited coolants dyed
11 orange and charging the higher price.

12 Q Okay. Are you familiar with the prices --
13 the retail prices of the different types of
14 antifreeze?

15 A Yes, I am.

16 Q And what would those be as a general rule?

17 A The green antifreezes is -- the green dyed
18 antifreezes come in a number of different
19 alternative technologies. They will range from
20 extremely inexpensive antifreezes -- we have a
21 customer who makes antifreeze in Louisiana, for
22 example, who sells the antifreeze for approximately
23 \$3 to 3 and a half dollars per gallon.

24 There are also green antifreezes that are

1 intended for heavy-duty truck applications that will
2 retail for approximately six to \$7 a gallon because
3 they are the fully formulated-type and contain
4 additional inhibitors required for diesel engines.
5 They cannot be told apart from a visual inspection.
6 The orange antifreezes have experienced a certain
7 market experimentation and were originally
8 introduced at \$14, give or take, per gallon.
9 Recently with the introductions of the competitive
10 products to the original Texaco technology that have
11 been introduced by Penray customers and by Prestone,
12 we have seen some degradation of the retail price to
13 perhaps eight or \$9 a gallon at the retail level.

14 Q And there are manufacturers of auto -- let's
15 just say passenger cars for the time being --

16 A Okay.

17 Q -- that use -- there are some that use the
18 green antifreeze and some that use the orange
19 antifreeze at this time; is that correct?

20 A Currently, General Motors is using organic
21 acid antifreeze, and Chrysler has introduced or is
22 experimenting with organic acid antifreeze in the
23 1998 Intrepid and Chrysler Concord.

24 Q And so a car that came to, for instance, a

1 service station or a car dealership that needed some
2 type of repair or work done on the coolant system,
3 it could have either the orange antifreeze in it or
4 the green antifreeze at this point in time; is that
5 correct?

6 A That is correct.

7 Q And is it your understanding that those
8 service stations, to use a generic term for the
9 people who are servicing the antifreeze coolant
10 systems, that they are draining those systems out
11 into, say, for instance, a 55-gallon drum? Is that
12 correct?

13 A Yes.

14 Q And the two, the orange and the green, are
15 mixed together in the drum; is that correct?

16 A They may be.

17 Q Okay. Is that safe to say? I mean, is that
18 a common practice that you find?

19 A If I were involved, I would recommend to
20 such a facility that they keep them separate.

21 Q Okay. But it is -- the facilities are often
22 mixing them together; is that correct?

23 A I am sure that they are.

24

1 (Petitioner's Exhibit No. 2 marked for
2 identification, 4-1-98.)

3 BY MR. RIFFNER:

4 Q And I will show you what -- another exhibit
5 that I will call Petitioner's Exhibit 2 for
6 identification, and it's got three jars or vials in
7 it, and if you are looking at it from the side of --
8 maybe --

9 MR. RIFFNER: Off the record for a second.

10 (Whereupon, a discussion was held off the
11 record.)

12 BY MR. RIFFNER:

13 Q On Exhibit 2, there are three separate
14 vials. You are familiar with the waste antifreeze;
15 is that correct?

16 A Used coolant, yes.

17 Q Used coolant. Thank you.

18 The vial that has got Exhibit A attached out of
19 the Group Exhibit 2, does that look like to you what
20 would commonly be used coolant?

21 A Yes.

22 Q Okay. And what is in there? Can you
23 describe what makes it the color it is?

24 A Without doing a chemical analysis --

1 Q Let's assume for a second that that is what
2 it is, that it's used coolant.

3 A This would appear to be a coolant that has
4 come from a vehicle. It's probably an older
5 vehicle. There is a brownish sediment in this
6 particular sample which would suggest that the
7 inhibitor package has become depleted and there is
8 some corrosion -- some active corrosion that exists
9 in this vehicle's system.

10 There is also suggestion perhaps of a little bit
11 of oil which is typically a contamination in the
12 removal process, not in the engine itself, but in
13 the handling of the used coolant at the shop where
14 the service is being performed. This is the type of
15 coolant that is the most difficult to recycle.

16 Q Okay. And the middle vial that we will call
17 Subsection B of Exhibit Number 2, are you familiar
18 with the process of running it through the filtered
19 system such as this Wynn's Oil Company system or the
20 filtered system that we have in the room here?

21 A Yes. I'm intimately familiar.

22 Q In your experience, does that represent the
23 type of product that is produced from the filtering
24 system that is commonly used?

1 A This is a well processed product for
2 recycling -- for filtered recycle product.

3 Q And when we are talking about that, this is
4 a system that we are talking about where it's run
5 through -- on-site it's run through a filtering
6 system, is that correct, the used coolant?

7 A Yes. Based on the appearance of this, I
8 would hypothesize that it's a multiple-stage
9 technology. A single filter cannot clean this
10 well.

11 THE HEARING OFFICER: Let me ask a question real
12 quick. What is it about the appearance of that
13 middle vial that tells you that it's a well
14 filtering --

15 THE WITNESS: If you hold it to the light, you
16 can see that it has a translucent appearance without
17 any visible suspended particles, and in order to
18 remove the very small particles that are typically
19 suspended in used coolant requires a multiple-stage
20 filtration process ultimately ending in something in
21 the range of a one to two micron filter. You can't
22 just feed the used coolant into a one or two micron
23 filter head-on unless you have a large filter budget
24 they will plug with very little time.

1 THE HEARING OFFICER: Thank you.

2 BY MR. RIFFNER:

3 Q And the vial that is marked as Subsection C

4 here of Exhibit 2, if I was to explain to you that

5 that was -- that had the additive put back into it

6 and the coloring, the green dye is put back into it,

7 is that a representative sample of what you would

8 see of the Exhibit B being turned into what is then

9 being used product or the product that's resold to

10 the clientele?

11 A Exhibit C does have that appearance because

12 you can detect a certain fluorescence in the dye

13 which is the type -- which is typical of new

14 antifreeze dyes. They tend to lose the fluorescent

15 characteristic as the coolant wears and is subjected

16 to heating and cooling over many hundreds of heat

17 cycles as the vehicle is used on a normal basis.

18 Also, it's visibly more opaque than the center

19 sample suggesting that indeed an additive containing

20 dye has been mixed with the sample.

21 Q Okay. And Exhibit C on Exhibit 2 -- or Vial

22 C on Exhibit 2, that is typically what is, assuming

23 it is what we have just spoken about and that's

24 the --

1 A That is the assumption, yes.

2 Q Using the filtered used coolant and putting
3 the additives back into it, this is the product that
4 is sold back to the clientele for recycled
5 antifreeze; is that correct?

6 A For light-duty application, this is
7 extremely typical.

8 Q And assuming it has been run through the
9 process correctly, this filtering process that we
10 are talking about, and the correct additives have
11 been placed back into it, that would meet the
12 standards that you spoke about earlier?

13 A It would meet light-duty recycled coolant
14 specifications assuming it was properly recycled and
15 inhibited, yes.

16 Q Are those the type of applications that are
17 used in the typical passenger vehicle?

18 A Yes.

19 Q Okay. Once it has been run through the
20 filter to get to Exhibit B or Vial B in Exhibit 2,
21 can you explain what essentially is in Exhibit B
22 assuming it's been
23 run -- that Vial A has been run in through the
24 filters and you are talking about a two-stage

1 process is I believe what you said? What is the
2 makeup of what is in Exhibit B?

3 A By far, the largest components are ethylene
4 glycol and water. We occasionally see some
5 propylene glycol. Propylene glycol is a less toxic
6 alternative to ethylene glycol. It is much more
7 expensive, and it is available in the consumer
8 marketplace. It is not used by any of the engine
9 manufacturers, but it does enter the used coolant
10 stream on a very small percentage and can be
11 detected in testing.

12 Q But typically, is it safe to assume that the
13 majority of what is in vials such as Exhibit B would
14 be ethylene glycol?

15 A Ethylene glycol and water at approximately
16 equal percentages.

17 Q And assuming it's been run through, for
18 instance, a five micron filter, there may be
19 particles that are smaller than five micron in that
20 mixture; is that correct?

21 A By definition.

22 (Petitioner's Exhibit No. 3 marked for
23 identification, 4-1-98.)

24

1 BY MR. RIFFNER:

2 Q I will mark another exhibit as Petitioner's
3 Exhibit 3 for identification. It's another sample
4 that has got three vials on it, and again, I will
5 put A, B, and C on the individual vials.

6 Mr. Eaton, if we make an assumption for one
7 second that what is in Vial A on Exhibit 3 is
8 similar to what was in Vial B on Exhibit 2, which is
9 the antifreeze that has been -- or the --

10 A The filtered used coolant.

11 Q Filtered used coolant. Thank you very
12 much. Does that, again, look like filtered used
13 coolant to you?

14 A It appears to be the same, yes, as B-2.

15 Q So Exhibit 3-A is, in your opinion --

16 A The same as 2-B.

17 Q From visual inspection?

18 A From a visual inspection.

19 Q Okay. Now, if you were to apply your
20 reverse osmosis system to that, the proposed system,
21 what is Exhibit 3, Vial B, would that be the result?

22 A The system that Mr. Gunderson proposes to
23 use is already in operation in Texas, and I can tell
24 you that this is classically what that type of

1 system produces, yes, a clear, water white ethylene
2 glycol and water fluid.

3 Q What has happened through your reverse
4 osmosis system to change it from 3-A to 3-B?

5 A Reverse osmosis is a sophisticated
6 technology that was developed by the military during
7 World War II to desalinize sea water, and it has the
8 ability to remove, based on particle size, molecular
9 weight, and ionic charge, contaminants from fluids,
10 to separate water and non-water, if you will.

11 The art which this clear fluid demonstrates is a
12 modification of reverse osmosis technology which
13 allows for the separation of water and ethylene
14 glycol from used engine coolant in an extremely pure
15 state so that it can be rebuilt into an engine
16 coolant that cannot be differentiated from brand new
17 coolant.

18 Q And so assuming that Mr. Gunderson has run
19 it through the system, what is in Exhibit 3, Vial B
20 is pure ethylene glycol?

21 A And water. It does not -- the system has
22 been engineered to reclaim as much of the waste
23 stream as possible -- as much of the input engine
24 coolant as possible, and so we reclaim both the

1 water and the glycols, the ethylene glycol and, if
2 it's present, propylene glycol.

3 Q And then in Vial C of Exhibit 3, we now have
4 the green or the clear green liquid again, and if we
5 can make the assumptions that your additives have
6 been added to that to make it the traditional or
7 conventional type of antifreeze, is that a familiar
8 looking product to you?

9 A It's a very familiar looking product. It's
10 certainly the one I would prefer to have in my
11 vehicles. You can see that it is extremely clear.
12 There are no visible insolubles at all. This
13 particular technology is compliant with both
14 light-duty and heavy-duty requirements, and so it
15 would be advantageous to a consumer because in the
16 event that they were a large, let's say,
17 construction company that had excavating equipment,
18 transport heavy-duty vehicles, and light-duty
19 pickups and cars, it would be applicable to all of
20 those.

21 Q Okay. And is Exhibit 3, Vial C essentially
22 the same from a visual standpoint as the green vial
23 that is part of Petitioner's Exhibit 1?

24 A It is indeed.

1 Q And your company, the Penray Companies,
2 provides the additives that can turn what is Exhibit
3 3-B into either the green conventional type of
4 antifreeze or the orange organic type of antifreeze;
5 is that correct?

6 A Yes. We offer various inhibitor
7 technologies to our customers.

8 Q And the ethylene glycol that is either part
9 of -- it's represented by 3-A where it has been run
10 through the filter or 2-B, either one, that has been
11 run through the on-site filter?

12 A Filtered engine coolant.

13 Q The filtered engine coolant. Is there a
14 market for that particular product before it is run
15 through the reverse osmosis system?

16 A In light-duty vehicles, there is a very
17 significant market as is evidenced not only by the
18 large amount of literature, technical papers which
19 have been published, but also even more recently, I
20 have with me a current -- this is the
21 January-February 1998 issue of Cool Profits
22 Magazine, and in this magazine is reported the
23 adoption of legislation in California which is law
24 AB-178 which establishes a standard for this type of

1 coolant in California.

2 Q So there is a market for the filtered used

3 coolant?

4 A It is a huge market.

5 Q Mr. Eaton, are you familiar with the

6 problems of cross contamination or the perceived

7 problems of cross contamination in this industry?

8 A It has been investigated extensively.

9 Q And can you explain for the board what the

10 cross contaminants are and the problems resulting

11 from -- or the perceived problems?

12 A I will be happy to. I would like to offer a

13 little background, if I may.

14 I'm privileged to be a member of the ASTM

15 Committee D-15 on engine coolants, and I also serve

16 as the secretary of the D-15.15 subcommittee on

17 recessed engine coolants. The only members of ASTM,

18 which is comprised of original equipment engine

19 manufacturers, engineers such as from General Motors

20 and Ford Chrysler and all of the people you would

21 suspect, ourselves, our competitors, various

22 recycling product providers and so forth, the only

23 people who have ever broached this issue has been

24 Safety-Kleen, and they brought to an ASTM meeting --

1 and I would have to go back to find the exact date,
2 but it was years ago -- concerns that there would be
3 contaminations with brake fluid, benzine containing
4 product, and other automotive chemicals that are
5 commonly -- or were at that time commonly found in
6 automotive repair facilities, whether they be
7 light-duty or heavy-duty.

8 As a result of the suggestion that that might
9 occur, an extensive exploration was done by
10 Prestone. Prestone applied some of their vast
11 resources to checking used coolants for these type
12 of contaminants for a couple of reasons. At the
13 time, Prestone was heavily involved in producing
14 recycling equipment themselves and recycling
15 additive technologies, and they had a commercial
16 interest in not having a shadow cast if, indeed,
17 there was no problem. And secondly, because they
18 are a large, well-known company, if indeed the
19 problem existed, they wanted to know about that and
20 they wanted to make a business decision as to
21 whether they could continue in the recycling field
22 if, indeed, this was a real problem.

23 They reported to the ASTM committee on coolants
24 that they -- in extreme detail, which detail is

1 recorded in the ASTM minutes for D-15, that this
2 cross contamination could not be found.

3 Q Could you explain for the board what
4 Safety-Kleen's role is in this industry?

5 A Safety-Kleen is a provider of waste
6 services, and in some parts of the country, they do
7 recycle coolant. Typically, however, they collect
8 waste fluids from all sorts of industry, including
9 waste coolant from automotive repair facilities, and
10 they dispose of it, for a fee of course, either by
11 mixing it at five percent in cement kiln burners or
12 something of that sort.

13 Q Does Safety-Kleen have any economic interest
14 in having items like we are talking about today
15 declared as a waste or determined to be a waste?

16 A They have an extremely great economic
17 interest in it because it increases the value of
18 their service.

19 (Petitioner's Exhibit No. 4 marked for
20 identification, 4-1-98.)

21 BY MR. RIFFNER:

22 Q I will mark this as Petitioner's Exhibit 4.
23 It's a service bulletin. Are you familiar with this
24 type of bulletin?

1 A Yes. This is a General Motors service
2 bulletin.

3 Q And do you know what that one applies to?

4 A This is Service Bulletin 73-62-14 and is
5 entitled Approved Engine Coolant Recycling
6 Processes. This was the initial General Motors
7 approval for recycled coolant technologies, those
8 coolant technologies that could be used by GM
9 dealers in vehicles still under warranty.

10 Q Are these consistent with the ASTM
11 standards?

12 A They are consistent with the new coolant
13 standards that existed at that time and have also
14 served -- this particular work has served as the
15 basis for the development of the recently agreed and
16 yet to be published ASTM recycle coolant standard.

17 Q If you flip that over on the back, Mr.
18 Eaton, down at the bottom I believe it lists Wynn's
19 Oil Company?

20 A Yes, it does.

21 Q And what kind of system is that?

22 A Wynn's is a chemical filtration system of
23 the type that Mr. Gunderson is using now.

24 Q That is the on-site filter system; is that

1 correct?

2 A On-site, two-stage filtration system.

3 Q And in that process, is it true that --

4 assuming that that's what Mr. Gunderson uses, that

5 it's run through two separate types of filters and

6 that it is recycled on-site, so to speak, and the

7 additives are placed back into it right on the

8 premises of the client?

9 A That is correct.

10 Q And that is the system that would typically

11 result in the type of product that is Vial C on

12 Exhibit 2; is that correct?

13 A Yes, that is correct.

14 Q And that is an approved standard -- or that

15 is an approved recycling process?

16 A For General Motors light-duty vehicles.

17 Q Okay. And then on the back as well up at

18 the top, they list another type of system. That's

19 the reverse osmosis system; is that correct?

20 A Yes.

21 Q And that is the system that your company is

22 involved with, Penray?

23 A We are involved with all of the technologies

24 in recycling.

1 Q But the process that you have spoken about
2 at length today is the reverse osmosis system that
3 is approved by GM?

4 A That is correct.

5 Q And that is what results in the Vials B and
6 C on Exhibit 3?

7 A Yes. B is the intermediate which is not
8 ready yet to be used as an engine coolant. C is the
9 reinhibited base coolant, if you will, that is ready
10 now to be used.

11 MR. RIFFNER: Okay. And the Wynn's filters of
12 which we have two of them here, there is a primary
13 and a secondary filter it. I will mark them as
14 Petitioner's Exhibits 5 and 6 respectively, 5 being
15 the primary filter and 6 being the secondary
16 filter.

17 (Petitioner's Exhibit Numbers 5 and 6
18 marked for identification, 4-1-98.)

19 BY MR. RIFFNER:

20 Q Are you familiar with these filters,
21 Mr. Eaton?

22 A Yes, I am.

23 Q And can you explain what is the standard to
24 which these filters clean the coolant?

1 A There is no national standard. I am told by
2 my friend who is in charge of coolant recycling for
3 Wynn's that these are -- the primary filters are 20
4 micron, and the secondary filter, I believe, is a
5 five micron filter.

6 Q And that five micron filter is what is
7 acceptable to GM and that's also acceptable by ASTM
8 standards; is that correct?

9 A When the fluid is subsequently properly
10 inhibited to meet the standards.

11 Q Yes, but running it through the five micron
12 filter before you add the inhibitors is what results
13 in either Vial B on Exhibit 2 or Vial A on Exhibit
14 A?

15 A That is correct.

16 MR. RIFFNER: I have no further questions for
17 Mr. Eaton.

18 THE HEARING OFFICER: Mr. Gimbel.

19 CROSS EXAMINATION

20 BY MR. GIMBEL:

21 Q I have some brief questions which relate to
22 the items in Exhibit 2 A, 2-B, and 3-A, which is the
23 coolant which has been run through the filters but
24 before inhibitors have been added.

1 A Okay.

2 Q And they relate to the market for that
3 particular product, and so I have two questions, and
4 I will ask you both questions so you know what I am
5 leading to, but you can answer them separately.

6 What is -- well, three. How big is this market,
7 what is the typical cost per gallon of what is in
8 Exhibit 2-B, and how does this compare with raw
9 ethylene glycol?

10 So going first, you say there was a large
11 market. Could you describe it a little bit more?

12 A There is a large market. Most of the
13 coolant that is sold in the United States
14 aftermarket, which would be that which is
15 post-production of the vehicle, is actually not
16 being sold as a change fluid. It's being sold as a
17 makeup fluid. The vast majority of coolant,
18 therefore, isn't deliberately being removed from a
19 vehicle because it has completed its service life.
20 The vast majority of coolant which is being replaced
21 has simply leaked onto the road either due to a
22 component failure such as a hose or something of
23 that sort. Therefore, there are -- there is a
24 continuous demand for an inexpensive ready-to-fill

1 fluid.

2 Personally, I have had the experience of being in
3 a store just looking through automotive chemicals,
4 as you can appreciate my general curiosity in the
5 field, and having had -- and having been approached
6 by an elderly lady seeking to get some advice from,
7 I guess, just a male figure on coolant to buy, and I
8 suggested a coolant that -- an antifreeze that I
9 personally prefer, and then I thought to say to her
10 now, you know you have to mix that with water before
11 you put it in your car, and she said no, I have just
12 always poured it in.

13 This type of product is more consumer friendly
14 because we do encounter so many people who don't
15 realize even that the antifreeze that you buy at the
16 mass merchandiser does need to be mixed with water,
17 and to fail to do that can create severe damage to
18 your car. So the market for ready-to-use coolants
19 such as this is great, and it is actually usable in
20 this format in many cases as the published work by
21 Norman Adamowicz suggested.

22 Q How does it compare with raw ethylene
23 glycol?

24 A Well, it differs from raw ethylene glycol,

1 and if I could be specific, there are so many grades
2 of ethylene glycol, the one used for antifreeze is
3 known as an ASTM E-1 177. It's a certain purity of
4 ethylene glycol. And this would differ in that it
5 would be approximately 50 percent water, and so it's
6 freeze point would be minus 34 degrees Fahrenheit
7 whereas as pure ethylene glycol has a freeze point
8 of nine degrees above zero Fahrenheit. So if you
9 were to use pure ethylene glycol in your car, you
10 would have very little freeze protection, and you
11 would also have a serious heat transfer problem.
12 The other ingredient or chemicals we would find
13 in this would be the residual inhibitors. The
14 majority of inhibitors used in automotive coolants,
15 whether they be of the inorganic or the organic
16 variety, do not deplete and continue to be available
17 and functional in a used coolant for a period
18 reported by Adamowicz at 100,000 miles and five
19 years, whichever comes first.
20 Typically, these types of coolants are not aged to
21 that point and so are reusable, to a degree at
22 least, in that form. The addition of supplemental
23 inhibitors such as has been introduced in Exhibit
24 2-C is done as a precaution more than as a necessity

1 in many cases to ensure that the consumer has a
2 functional coolant in his vehicle.

3 Q Would there be a typical price per gallon
4 that you can assign to what would be in Exhibit 2-B?

5 A 2-B without the supplemental inhibitor is
6 probably valued somewhere in the area of 1.50 to
7 2.50 a gallon, and that value would fluctuate with
8 the glycol market, which is extremely unstable.

9 THE HEARING OFFICER: What is the value with the
10 supplemental inhibitor?

11 THE WITNESS: Supplemental inhibitor would --
12 it's contribution would be somewhere in the area of
13 50 cents a gallon to the used coolant.

14 MR. GIMBEL: Thank you. That's all the questions
15 we have.

16 THE HEARING OFFICER: Any redirect?

17 MR. RIFFNER: No redirect.

18 THE HEARING OFFICER: Is this witness excused?

19 MR. RIFFNER: Yes. This witness is excused.

20 THE HEARING OFFICER: Thank you very much,
21 Mr. Eaton.

22 MR. RIFFNER: Can we go off the record for one
23 second?

24 THE HEARING OFFICER: Sure.

1 (Whereupon, a discussion was held off the
2 record.)

3 MR. RIFFNER: Back on the record.

4 (Petitioner's Exhibit No. 7 marked for
5 identification, 4-1-98.)

6 REDIRECT EXAMINATION

7 BY MR. RIFFNER:

8 Q Mr. Eaton, you had testified today regarding
9 numerous articles that you had either written or
10 coauthored or had an interest in, and they are
11 compiled in a binder that I have marked as
12 Petitioner's Exhibit 7; is that correct?

13 A Yes, that's correct.

14 Q And this Exhibit 7 is a group exhibit
15 containing all of the articles that you testified
16 regarding earlier in your testimony today; is that
17 correct?

18 A Yes.

19 MR. RIFFNER: I have no further questions.

20 MR. GIMBEL: No questions.

21 THE HEARING OFFICER: Thank you.

22 (Whereupon, a discussion was held off the
23 record.)

24 THE HEARING OFFICER: We are back on the record.

1 Mr. Riffner, your next witness.

2 MR. RIFFNER: I call Mr. Ronald Rabinowitz.

3 (The witness was duly sworn.)

4 RONALD RABINOWITZ,

5 called as a witness herein, having been first duly

6 sworn, was examined upon oral interrogatories, and

7 testified as follows:

8 DIRECT EXAMINATION

9 BY MR. RIFFNER:

10 Q Would you state your name and spell your

11 last name for the record, please?

12 A Ronald Rabinowitz. Last name is spelled,

13 R-a-b-i-n-o-w-i-t-z.

14 Q Do you mind if I call you Ron?

15 A Yes, that's fine.

16 Q Ron, are you presently employed?

17 A Yes. I'm the owner of Itasca Auto Repair.

18 Q And how long have you owned Itasca Auto

19 Repair?

20 A Three years.

21 Q And previous to owning Itasca Auto Repair,

22 what is your employment background?

23 A I have been a professional auto mechanic

24 since 1978.

1 Q Do you have actual professional training as
2 a mechanic?

3 A Yes.

4 Q And where did you get that training?

5 A Automotive Technical Institute in Chicago.

6 Q And so you have been a mechanic or owned an
7 auto repair shop for 20 years; is that correct?

8 A Yes.

9 Q And you have occasion to deal with cooling
10 systems on cars; is that correct?

11 A Every day.

12 Q And do you see cars on a regular basis that
13 are either low on coolant or completely out of
14 coolant?

15 A Every day.

16 Q Can you describe in some detail the manners
17 in which these cars become either low on coolant
18 or --

19 A In driving, the overheating problems and/or
20 blowing radiator hoses or heater hoses and such and
21 coming into my shop just low.

22 Q And how much antifreeze or coolant does a
23 typical system hold?

24 A Two to four gallons depending on the size of

1 the vehicle.

2 Q And what does the average vehicle have in
3 terms of coolant or antifreeze left in it when it
4 comes to your shop if it has experienced one of
5 these problems?

6 A A lot of times, nothing is left in the
7 system.

8 Q Okay. And the vehicles that do have some
9 coolant left or you are just changing the coolant in
10 a vehicle, that also occurs; is that correct?

11 A Every day.

12 Q What do you do typically with the used
13 antifreeze or coolant?

14 A It's put in a separate drum and recycled
15 when it gets full.

16 Q Have you always recycled the antifreeze?

17 A Yes.

18 Q And are you presently recycling the
19 antifreeze with Recycle Technologies?

20 A Yes, since the day we started.

21 Q Since 1995; is that correct?

22 A Correct.

23 Q And is it the current process that
24 Mr. Gunderson or someone else from Recycle

1 Technologies comes out to your shop and recycles the
2 antifreeze through the filters?

3 A Yes. He does it on-site.

4 Q Okay. What is the cost of a gallon of new
5 antifreeze if you were to use that in a vehicle
6 after you have repaired the damage to a hose or to a
7 pump or whatever caused the leakage?

8 A The cost on it is \$4.50 a gallon.

9 Q Is that your cost?

10 A My cost right now.

11 Q And what do you sell it to the consumer at?

12 A \$8 a gallon.

13 Q And what is the cost to you of the recycled
14 antifreeze that you get from Recycle Technologies?

15 A About half.

16 Q Do you use all of the recycled antifreeze
17 that you get from Recycle Technologies?

18 A Yes.

19 Q And if Mr. Gunderson were able to provide
20 you or -- sorry.

21 If Recycle Technologies was able to provide you
22 with additional recycled antifreeze, would you find
23 that attractive?

24 A Most definitely. That could also lower my

1 cost as to what I could sell it for to the customer.

2 Q And just as a matter of cosmetics, if you
3 were to receive -- which would you rather receive,
4 the liquid that is in Exhibit 2, Vial C or what is
5 in Exhibit 3, Vial C?

6 A Exhibit 3, Vial C.

7 Q And that's the more transparent green
8 antifreeze; is that correct?

9 A Correct. It just looks cleaner. It's more
10 presentable to the customer.

11 Q And you are obviously familiar with
12 antifreeze; is that correct?

13 A Yes.

14 Q And what is on Exhibit 1 for identification,
15 would you -- assuming that that is antifreeze in
16 those two vials, what is the difference between the
17 two of those as far as you are aware?

18 A Just recognizable color. The green is
19 recognized more as antifreeze rather than any of the
20 other colors that are out.

21 Q But you get vehicles in now that have the --

22 A The amber colored and also the red.

23 Q Okay. And those are all mixed together when
24 you drain them, is that correct, into one 55-gallon

1 drum?

2 A Correct.

3 MR. RIFFNER: I have no more questions of

4 Mr. Rabinowitz.

5 THE HEARING OFFICER: Mr. Gimbel, any cross

6 examination?

7 MR. GIMBEL: None.

8 MR. RIFFNER: Okay. Ron, thanks very much.

9 THE HEARING OFFICER: You are free to go. Thank
10 you, sir.

11 (Whereupon, a discussion was held off the
12 record.)

13 THE HEARING OFFICER: We will go back on the
14 record. Mr. Gary Gunderson is going to begin
15 testifying now, and we will let the court reporter
16 swear him in.

17 (The witness was duly sworn.)

18 GARY GUNDERSON,
19 called as a witness herein, having been first duly
20 sworn, was examined upon oral interrogatories, and
21 testified as follows:

22 DIRECT EXAMINATION

23 BY MR. RIFFNER:

24 Q Gary, state your name for the record

1 spelling your last name, please.

2 A Gary Lee Gunderson, G-u-n-d-e-r-s-o-n.

3 Q And is Recycle Technologies an Illinois
4 corporation?

5 A Yes, it is.

6 Q And are you the owner of Recycle
7 Technologies?

8 A Sole owner.

9 Q And how long have you owned Recycle
10 Technologies?

11 A Started in October of '94. We were
12 incorporated in like March of '95.

13 Q And what is the business of Recycle
14 Technologies?

15 A Primarily, right now we are an on-site
16 antifreeze recycling service.

17 Q And describe the process that you go through
18 right now as an on-site recycling center.

19 A Typically, we set up clients, have them sign
20 an agreement so both parties understand what is to
21 be performed between our companies. You know,
22 things have to be stored in a safe manner and
23 according to the laws of the EPA. And then we wait
24 for them to --

1 Q Hold on for one second, Gary.

2 (Petitioner's Exhibit No. 8 marked for

3 identification, 4-1-98.)

4 BY MR. RIFFNER:

5 Q I will show you what I have marked as

6 Exhibit 8 for identification. Do you recognize that

7 document?

8 A That's our client registration. It is not a

9 legal document. We don't require contracts, but

10 we -- just so the clients have an understanding of

11 what is going to happen and that everyone, you know,

12 follows the guidelines that are set out.

13 Q Okay. And that one has been completed for

14 one of your customers; is that correct?

15 A Correct.

16 Q And that is the standard type of agreement

17 that you have?

18 A Right. It's a three-part piece of paper

19 where the customer keeps one, and then we have two.

20 One we keep in a file for the client, another one in

21 another area in case we ever need to to back to it.

22 Q Okay. In general terms, who are Recycle

23 Technologies' clients?

24 A Exclusively in the automotive industry, new

1 car dealers and repair shops, facilities.

2 (Petitioner's Exhibit No. 9 marked for

3 identification, 4-1-98.)

4 BY MR. RIFFNER:

5 Q And I will show you what I will mark as

6 Petitioner's Exhibit for identification. I will ask

7 you if you recognize that document.

8 A I just -- just to show some of the clients,

9 I did a printout of January of 1998 to March 27th.

10 It's a listing of all the people that we have

11 recycled and basically the dollar amounts that they

12 have spent recycling with us.

13 Q And as to those dollar amounts, what do

14 those generally reflect, Gary?

15 A The dollar amounts reflect the payment for

16 the services of recycling. We have two prices.

17 109.25 is for one drum at a time, and a \$98.50 is

18 for multiple drums, two drums at a time, and any

19 figure that would be not one of those denominations

20 would be partial drums because clients don't always

21 have enough waste to recycle.

22 Q And when you are saying a drum, are you --

23 A Fifty-five-gallon drum. I'm sorry.

24 Q Fifty-five-gallon drum?

1 A Yes.

2 Q You also sell them or provide them with the
3 drums; is that correct?

4 A Yes. If -- they can use their own drums as
5 long as they are, you know, safe, clean drums. Or
6 we provide drums for \$20. \$15 was our old price.
7 Now it's \$20 for a clean, plastic drum.

8 Q So the \$15 figure that we saw in some of the
9 pleadings of this case was referring to an empty
10 drum; is that correct?

11 A Right. It's a one-time charge for the empty
12 drum, and from then on it's just the service cost.

13 (Petitioner's Exhibit No. 10 marked for
14 identification, 4-1-98.)

15 BY MR. RIFFNER:

16 Q I also show you what I have marked as
17 Petitioner's Exhibit 10 for identification. Do you
18 recognize this document?

19 A Yeah. That's a list I had put together, one
20 of our original petitions where I had just run from
21 a car dealer's standpoint -- this happens to be a
22 selection of various car dealers. There is -- the
23 list is expanded, and possibly one or two of these
24 have changed, either car dealers have changed

1 ownership or whatever, but predominantly 99 percent
2 of this is active clients of Recycle Technologies.

3 Q And so there may be some cross-reference
4 between Exhibits 9 and 10; is that correct?

5 A Correct.

6 Q But only if the car dealers on Exhibit 10
7 had been -- you had serviced them and recycled the
8 antifreeze within the three-month period for which
9 you printed out the summary of all of your customers
10 from this year?

11 A Correct. Some clients recycle every six
12 months, some every month. It all depends on their
13 size and volume and cooling work.

14 Q Approximately how many clients are on the
15 list that you recycled for just from January 1st of
16 this year through March 27th, do you know?

17 A I know -- I just did a -- in my computer, I
18 have currently 514 active clients.

19 Q And those are almost exclusively car
20 dealerships or auto repair places such as Ron's
21 Itasca Auto Repair who just testified; is that
22 correct?

23 A Yes.

24 Q At present, let's assume that for the sake

1 of this testimony that you're actually the person
2 doing the on-site recycling. What process do you go
3 through at the site itself?

4 A Typically, a customer will call us either
5 when their waste is full, or a lot of times they
6 need new antifreeze and they may not have -- you
7 know, they may have a drum and a half of waste, but
8 they need antifreeze. So we come out and recycle
9 what they have.

10 We drive out with our equipment in a truck and
11 bring the equipment in. We filter it down using a
12 filtration process and --

13 Q Is there a generic term for the generic
14 process that you use? I mean, is it similar to this
15 Wynn's system that --

16 A Yeah. The Wynn's machine filters down to
17 five micron. We go down to at least five micron,
18 most of the time down to one micron. We filter
19 actually down to a finer level than the Wynn's.

20 Q What does that mean: Five micron or one
21 micron?

22 A Well, a micron is a rating of -- anything
23 larger than five micron won't go through a five
24 micron filter. To give you some indication of size,

1 supposedly the human eye can only see down to about
2 40 micron.

3 MR. RIFFNER: This is rather difficult to mark,
4 but I will call this Petitioner's Exhibit Number
5 11.

6 (Petitioner's Exhibit No. 11 marked for
7 identification, 4-1-98.)

8 BY MR. RIFFNER:

9 Q Can you explain what this is?

10 A It's similar to the Wynn's filter. Theirs
11 happens to be more of a cartridge. This is just
12 contained with a metal casing. This is a one micron
13 filter, so it actually filters down to a smaller --
14 it filters out smaller particles than the Wynn's
15 machine. It's just a larger cartridge filter so you
16 can run more fluid through it as opposed to a
17 smaller Wynn's machine.

18 Q It is essentially what Mr. Eaton testified
19 about as the Wynn's system that is acceptable to GM
20 and acceptable by the other standards that we
21 discussed earlier?

22 A Correct.

23 Q Okay. Except that the filter that you have
24 in your hand is in -- it's held in a pressurized

1 container; is that correct?

2 A Yes. For ease of use, you screw it -- you
3 screw off the bottom of the container. You put the
4 cartridge in the container, rescrew it in. It's got
5 an O-ring, and the filter -- the fluid passes
6 through it. It's just that it's a -- the cartridge
7 is not disposable. It's cheaper to do this than
8 actually dispose of the metal cartridge every time.

9 THE HEARING OFFICER: Just for clarification,
10 when you say do this, you are referring to
11 Petitioner's Exhibit 11, the filter that you were
12 holding in your hands?

13 THE WITNESS: I'm sorry. Yes.

14 BY MR. RIFFNER:

15 Q And describe as best as you can for the
16 record the process that's actually occurring when
17 you recycle on -- or when you run it through the
18 filtering system on-site.

19 A Okay. Basically, we stick a hose into the
20 waste drum, which is a suction hose. We use a pump
21 that sucks out the waste, pumps it through the
22 filters into the new drum. At that point, you have
23 got the Exhibit 2-B or 3-A, which is the filtered
24 glycol. At that point, we add the dyes and the

1 supplemental additives to restore it back to the
2 appropriate specs.

3 Q And under your current system, as you use
4 it, is the result of doing the on-site recycling, is
5 that similar to the product that's in Exhibit 2,
6 Vial C?

7 A Yes.

8 Q Just for the record, go through and identify
9 -- you prepared these exhibits; is that correct?

10 A Yes, I did.

11 Q Exhibits 1, 2, and 3?

12 A Uh-huh.

13 Q What is in Exhibit 1? What is the green --

14 A Exhibit 1 is a permeate run-through and RO
15 process where I have added the two Penray additive
16 packages, one being the traditional inorganic green
17 and the other being what is known from the trademark
18 name DEX-COOL or organic or extended life for a
19 generic name, and the only difference being it's the
20 glycol and water and the different additives and
21 dyes to each one.

22 Q And that is what makes it the different
23 color; is that correct?

24 A Correct. It's just a dye coloring.

1 Q And what is in Exhibit 2, Vial A?

2 A Two, Vial A, the -- okay. Two, Vial A is
3 just a sample of waste coolant that you typically
4 would see in a client's -- it will have oil. It
5 will have sediment in the bottom from rusted -- the
6 rust -- the corrosion that's been caused in it. 2-B
7 is after it's run through the filtering system, you
8 notice no presence of oil, sediment, and it looks a
9 little cleaner because you have gotten the
10 contaminants out.

11 Q And this is actually a product that has been
12 run through the two-filter process that you just
13 described; is that correct?

14 A Yes. And then --

15 Q 2-C, the --

16 A The 2-C is basically 2-A where we have just
17 added --

18 MR. GIMBEL: 2-B.

19 THE WITNESS: Excuse me. 2-B where we have added
20 the dye and the additive to the filtered product.

21 BY MR. RIFFNER:

22 Q That is what you are presently doing in the
23 on-site process; is that correct?

24 A Right.

1 Q And so what is in the vial that is in part
2 of 2-C, that is the finished product under your
3 present system; is that correct?

4 A Yes.

5 Q Okay. And can you explain what it is that
6 you are proposing actually be done with the recycled
7 coolant or with the used coolant under the new
8 process?

9 A Well, the new process it will be identical
10 in that we would take the waste, which is 2-A, and
11 we would run it on-site as we are now through the
12 same filters to come to 2-B.

13 Q And then what is your understanding, Gary,
14 of what is in 2-B? What is the makeup of that?

15 A It's essentially water, glycol, and some of
16 the dyes and some other trace, you know, things, but
17 it's mainly water, glycol, and then the various dyes
18 that may be made up of the other two types of
19 coolants.

20 Q Okay. And your proposal is that you take
21 essentially what is in 2-B or 3-A and run it through
22 a separate system; is that correct?

23 A Yes.

24 Q You would actually transport the product in

1 the form of 2-B or 3-A to a centralized facility; is
2 that correct?

3 A Yes.

4 Q And then what would happen at that point?

5 A We would then run it through what is known
6 as the reverse osmosis process, which would
7 completely remove all the dyes, and strip it back to
8 its natural color of clear glycol. Glycol and water
9 is naturally clear.

10 Q And does Exhibit 3-B represent the product
11 that you get after you run it through the reverse
12 osmosis system?

13 A Yes. When the product is run through the
14 reverse osmosis process, it becomes what they call a
15 permeate, and that is actual automotive coolant run
16 through an RO machine and the permeate that comes
17 out.

18 Q Okay. And then what would you do with the
19 permeate that comes out?

20 A Simply mix in the inhibitor and dye package
21 that's appropriate for, you know, what the clients
22 want. There are various packages that you can use.

23 When you do strip it back to the clear liquid, it
24 allows you to not only do the traditional green, but

1 you can go to the other colors because you have got
2 a clear product that you have started out with.

3 Q And the additives that you place into the
4 clear liquid, that is the product that Mr. Eaton's
5 company sells, the Penray Companies; is that
6 correct?

7 A Penray develops and markets additives, among
8 other things, but for the antifreeze -- for new
9 antifreeze manufacturers and for people in the
10 recycled industry.

11 Q Okay. The individual client of yours who
12 is, for instance, an auto repair shop, if he was to
13 not use the recycling process with the used
14 antifreeze or the used coolant, what is the process
15 that that individual would have to go through?

16 A Well, typically -- if I'm understanding your
17 question, it's if they don't recycle it, how do they
18 dispose of it?

19 Q Correct.

20 A If they are going to do it according to the
21 law, they need to get it hauled away by a waste --
22 licensed waste hauler that disposes of it properly.
23 Typically, that ranges from 50 cents to \$1 a gallon
24 for a waste hauler to come pick up the waste and

1 dispose of it properly.

2 Q Just so the record is clear, a waste hauler

3 such as Waste Management or Safety-Kleen?

4 A Probably more realistically a Safety-Kleen

5 or the other -- I don't believe Waste Management

6 does haul.

7 Q Okay. Safety-Kleen or some other type of

8 waste hauler would pick up the product that is

9 exhibited in our Exhibit 2-A; is that correct?

10 A Yes.

11 Q And the client, your client, would have to

12 pay somewhere between 50 cents and \$1 per gallon to

13 get rid of it?

14 A Yes. In general, yes.

15 Q And you heard Mr. Rabinowitz testify

16 previously about his cost of antifreeze. Is that a

17 cost that's familiar to you as well of the new

18 antifreeze?

19 A Sure. Antifreeze, like a lot of products,

20 does vary, but traditionally -- in fact, I just went

21 out and bought one of the discounted brands of

22 antifreeze, and I believe it was about 4.50 a gallon

23 for the traditional.

24

1 (Petitioner's Exhibit No. 12 marked for
2 identification, 4-1-98.)

3 BY MR. RIFFNER:

4 Q I will mark this as Exhibit 12 for
5 identification. Can you describe for the board what
6 that is?

7 A I went to -- tried to be as representative
8 as possible. I went to a discount auto supply place
9 called Super Trak in Schaumburg and bought their
10 house brand, which was the cheapest they had
11 available, of traditional antifreeze, and that is
12 the first item, and it was purchased for \$4.49 a
13 gallon.

14 Q That corresponds with which item here, Gary?

15 A The yellow antifreeze container.

16 Q Okay.

17 A And I also then purchased the newer
18 antifreeze, which is Exhibit 1, the orange
19 antifreeze, which the trademark name is DEX-COOL.
20 That's the Texaco trademark name for that, marketing
21 name, and the purchase price for that was \$7.99 for
22 one gallon.

23 (Petitioner's Exhibit No. 13 marked for
24 identification, 4-1-98.)

1 BY MR. RIFFNER:

2 Q Okay. And I will mark those containers of
3 antifreeze in the order that you described them.
4 Exhibit 13 will be the yellow traditional coolant
5 that's green; is that correct?

6 A Yes.

7 (Petitioner's Exhibit No. 14 marked for
8 identification, 4-1-98.)

9 BY MR. RIFFNER:

10 Q And then Exhibit 14 will be the DEX-COOL,
11 which is the organic orange sort of antifreeze; is
12 that correct?

13 A Correct.

14 Q And at the present time, Gary, are you
15 seeing antifreeze at your customers' site that is a
16 combination of both the green and the orange
17 antifreeze?

18 A Yes. If they are going to be servicing the
19 newer cars -- for instance, all of the GM cars, I
20 believe, that I have spoken to for the last two
21 years are now using the DEX-COOL extended life.

22 Q I will hand you a couple of vials of --
23 that's just got half filled with water, correct? Do
24 you want to mix these together and show -- make a

1 sample of what they look like?

2 A Sure. Basically, what we want to do is we
3 have taken the same size vials that are represented
4 in the other samples, Exhibit 1, 2, and 3, and
5 because our antifreeze is a ready to use premix,
6 which means it's 50 percent water, 50 percent
7 antifreeze, we filled two bottles approximately half
8 full with water, and I'm going to, for the first
9 time, open up the new. It's got a seal on it. I'm
10 going to break the foil.

11 THE HEARING OFFICER: Just for the record, you
12 are pouring from Exhibit 14?

13 THE WITNESS: I'm sorry. Yes, Exhibit 14, the
14 bottle of DEX-COOL or traditional orange. I will
15 open up that, and I filled the remaining half the
16 bottle -- the first half did have strictly water in
17 there just to show you the clarity and similarity.
18 There will be a slight difference in dye color.
19 Every manufacturer uses a different dye alcohol.

20 MR. RIFFNER: And we will mark that as
21 Petitioner's Exhibit 15.

22 (Petitioner's Exhibit No. 15 marked for
23 identification, 4-1-98.)

24

1 BY MR. RIFFNER:

2 Q That is the DEX-COOL?

3 A Brand of extended life.

4 Q Brand of extended life organic, if you want

5 to, coolant that's mixed with half water. And we

6 will mark as Exhibit 14, after Gary gets to pour it

7 in there, the traditional antifreeze that's in

8 Exhibit Number --

9 A Thirteen.

10 Q Thirteen.

11 A Now we are going to open for the first time

12 Exhibit 13, which is the green traditional

13 antifreeze, and again, remove the foil and then take

14 the sample bottle that's approximately half full of

15 water and then --

16 (Petitioner's Exhibit No. 16 marked for

17 identification, 4-1-98.)

18 BY MR. RIFFNER:

19 Q And I will mark that as Petitioner's Exhibit

20 16 for identification purposes, which represents the

21 traditional inorganic antifreeze that's found in

22 most vehicles as testified to by Mr. Eaton earlier.

23 And from your perspective, Gary, from the aspect

24 of being able to resell the recycled antifreeze, do

1 you have an opinion as to which type of antifreeze
2 or which is easier for you or more marketable for
3 you?

4 A Well, I think it's fairly clear for most
5 people to see with the new ones comparing to the
6 products that I can turn out, the traditional, you
7 can't even tell the difference by visually looking
8 at it. The additive for the extended life, there is
9 a slight difference in color. One is more orange.
10 One is a little bit more red. But as far as
11 clarity, again, the customers -- my customers
12 wouldn't be able to tell the difference as opposed
13 to my existing process. While chemically the
14 product is - meets all standards from an automotive
15 use, it's not cosmetically as pleasing.

16 Q And for the record, let's clarify that you
17 are now referring to Exhibit 2-C?

18 A 2-C.

19 Q Which is the finished product of the
20 on-site?

21 A Right.

22 Q And, Gary, are you aware of any chemical
23 difference between 2-C and what we have marked now
24 as Exhibits 15 and 16?

1 A Is this 15 and 16?

2 Q Yes.

3 A From a chemical standpoint, really not --
4 it's 99.9 percent cosmetic difference.

5 Q And that's because of the reverse osmosis
6 system?

7 A Right. You are basically using the same
8 inhibitor package. You are going to have similar
9 qualities of protection, but from a cosmetics, it's
10 a lot better product.

11 Q And you are dealing with these customers
12 yourself on a daily basis; is that correct?

13 A Yes.

14 Q You are physically driving a vehicle around
15 and doing the on-site recycling yourself?

16 A Yes.

17 Q You also have other drivers; is that
18 correct?

19 A Yes.

20 Q How many other drivers do you have at the
21 present time?

22 A Currently, there is three people involved,
23 including myself.

24 Q And you cover what area right now?

1 A The Chicagoland area.

2 Q How far north do you go?

3 A Waukegan.

4 Q And how far south do you go?

5 A Holland.

6 Q And what about west?

7 A St. Charles.

8 Q And what is your proposal or what is it that

9 you are looking to be able to do?

10 A My proposal is quite simple: Continue doing

11 everything that I do now except for after filtering

12 it on-site to bring it back to a central facility

13 where I can remove the dyes so I can have a clear

14 product where I can then offer my clients the

15 different varieties of antifreezes as opposed to

16 just the traditional antifreeze seeing that the

17 industry now is moving more towards the extended

18 life, which is orange.

19 Q Okay. And what is the cost difference

20 between doing the two different processes that we

21 have talked about, either the on-site or the

22 off-site?

23 A There is added cost. It's hard to put an

24 exact cost because it's an economy of scales. The

1 more that you do -- the RO machine actually costs
2 more, but we are -- by doing it the central way, it
3 will shorten our time being on-site in that we are
4 just going to filter onto the truck, and then the
5 mixing of the additives will be done centrally after
6 it goes through the RO machine, so our costs will
7 drop there. We don't see that great of an added
8 cost because there will be some balancing for time.

9 Q So from a time standpoint, your drivers, be
10 that you or the other drivers, would spend less time
11 on-site; is that correct?

12 A Right. Because they are not going to be
13 mixing chemicals and testing them to make sure that
14 the proper levels are there, it will all be done in
15 large batches which will assure our clients of
16 higher standards. Instead of mixing each drum at a
17 time, we will do larger batches at a time. And they
18 won't be there as long, so they will make more stops
19 in a day.

20 Q And when you are on that site, you would
21 simply pump in a clean barrel the recycled
22 antifreeze that looks like either Exhibit 15 or 16;
23 is that correct?

24 A Correct.

1 Q And you would still run the same used
2 antifreeze -- the old antifreeze, you would still
3 run that through the two-filter process; is that
4 correct?

5 A Correct.

6 Q We are not going to mark this as an exhibit
7 because I don't expect anyone to take this back to
8 Springfield with them, but can you describe for the
9 record what I have just placed on the table in front
10 of you?

11 A Sure. Basically very similar to the Wynn's
12 machine, you have a larger filter, typically a 20,
13 25 micron filter, to catch the larger pieces and
14 then a finer grade filter to catch the smaller
15 pieces that are floating in the fluid, and that's
16 just a representative sample. Although the filter
17 looks a little different than the Wynn's machine,
18 they are identical.

19 Q And what we are looking at right now,
20 Exhibit 11, is a clean filter; is that correct?

21 A Right. That is a clean one micron filter.

22 Q What we are looking at here on the table,
23 can you describe it for the record, if you would?
24 What is on the table right now in this bucket?

1 A In the bucket are two filters that are used
2 just to show, you know, what is pulled out of the
3 antifreeze. The filters are basically -- the new
4 filters are a bright, clean white, and the used ones
5 are just a dirty looking color. It's combination of
6 oil and particles of metal and things of that
7 nature.

8 Q How do you dispose of these?

9 A They are disposed of as a special waste. We
10 put them in drums, and we place them -- let them --
11 all the fluid drain out, and then we stack them into
12 the drums and get them hauled away as special waste.

13 Q And you have to do that at the present time
14 anyway; is that correct?

15 A Correct.

16 Q And are there any competitors with you that
17 you know of in this industry right now?

18 A Currently, there is approximately six -- at
19 least six competitors that I know of that are
20 recycling antifreeze in the Chicagoland area.

21 Q And do you know what process -- are you
22 familiar with the process that they are using right
23 now?

24 A Every one of them is using the filtration

1 process.

2 Q Your on-site filtration process is the one
3 that we have talked about as either the Wynn's
4 system or the dual filter system that's Exhibit --

5 A Correct.

6 Q -- 11?

7 A Correct.

8 Just for what it's worth, the Wynn's system that
9 we keep referring to is a system that is sold to the
10 shops so they can recycle their own antifreeze by
11 themselves, and it is marketed and sold to the
12 shops.

13 Q Okay. Before you moved into the space that
14 you are in in Wood Dale, you attempted to get a read
15 on what Wood Dale wanted from your recycling
16 business; is that correct?

17 A Yes.

18 (Petitioner's Exhibit No. 17 marked for
19 identification, 4-1-98.)

20 BY MR. RIFFNER:

21 Q I will show you Exhibit Number 17. Do you
22 recognize that exhibit?

23 A Yes. Actually, this is written to my
24 father, Ed Gunderson. He's retired and helps me out

1 doing a lot of legwork so I can run the business.
2 And he met a year ago March 19th -- well, actually
3 this letter is written March 19th, '97 -- with the
4 city of Wood Dale where we want to put our facility
5 and met with them, with the fire and the building
6 codes people and everybody and explained what we are
7 going to propose to do and explained our process to
8 them much to that that we are explaining it to you,
9 and they wrote us a letter saying that they had no
10 problem with us doing our bulk recycling in the city
11 of Wood Dale in the building that we are proposing
12 to.

13 (Petitioner's Exhibit No. 18 marked for
14 identification, 4-1-98.)

15 BY MR. RIFFNER:

16 Q Okay. I will mark these as Group Exhibit
17 18. Do you recognize these documents, Gary?

18 A Uh-huh. These have all been exhibits,
19 again, that we have submitted prior with some of the
20 other --

21 Q Pleadings?

22 A -- pleadings, and basically, we as a
23 company, trying to have a quality product, do
24 periodic testing of our products.

1 Q And who is the testing done by?

2 A There is a lot of different labs that we
3 do. We don't rely on one lab in case they have
4 errors, but

5 this -- most of these, I believe, were the Analyst,
6 Incorporated, out of Hoffman Estates.

7 Q And what is the time frame over which those
8 tests were done?

9 A Well, they all are dated. The first one was
10 July 6th of '95. One was in February of '96, all
11 various dates where we periodically send out samples
12 to make sure that what we are doing maintains the
13 specs that are required.

14 Q And what are the results on those tests?

15 A We have never -- I would say we have done 30
16 to 40 tests and have never had a test come back
17 where our product was not acceptable.

18 Q And which product are they testing?

19 A Our current process.

20 (Petitioner's Exhibit No. 19 marked for
21 identification, 4-1-98.)

22 BY MR. RIFFNER:

23 Q Okay. I show you what I will mark as

24 Petitioner's Exhibit 19 for identification. Can you

1 explain what this document is?

2 A This is an attempt just to show that the
3 Reverse Osmosis Recyclers Association -- this was --
4 again, this has been submitted prior. This was in
5 July of '97. This is an organization of people that
6 are recycling the way that we want to recycle with
7 the reverse osmosis technology, the newest.

8 Incidentally, I would say every one of these
9 people started out in the filtration avenue and then
10 realized that they wanted to become larger and have
11 the best product. They all migrated towards the
12 reverse osmosis process.

13 Q And that list of people in that association
14 includes the Penray Companies; is that correct?

15 A Penray actually is a member of that
16 association, yes. Also Dow Chemical is a member of
17 that, if you will notice at the bottom Dow
18 Chemical.

19 (Petitioner's Exhibit Numbers 20 and 21
20 marked for identification, 4-1-98.)

21 BY MR. RIFFNER:

22 Q I will show you two exhibits that I will
23 mark as Exhibits 20 and 21 respectively. Can you
24 describe what those documents are?

1 A The first one, Exhibit 20, Ed had talked
2 about the ASTM --

3 Q That's Ed Eaton?

4 A Ed Eaton with Penray discussed the
5 association ASTM. They have specs for antifreeze or
6 coolant, and GM also has specs. As you look, these
7 are comparing the ASTM specs with the ASTM specs,
8 and they are virtually identical, some minor
9 changes, and these are the specs that we are being
10 tested to consistently.

11 Q Those are the specifications to which the
12 testing that you just referred to --

13 A Right, and similar to the Wynn's machine,
14 they meet the GM specs.

15 The second one is just simply -- Exhibit 21 is
16 right out of a service bulletin 95166, so it's --
17 '95 delineates the year that it was by Ford Motor
18 Company. At the bottom, I starred and kind of put a
19 little box around. It just mentions that the Ford
20 Motor Company authorizes the use of recycled
21 coolant, again, to show that, you know, the
22 manufacturers are approving recycled coolant.

23 MR. RIFFNER: I have nothing further at this
24 time.

1 THE HEARING OFFICER: Mr. Gimbel.

2 CROSS EXAMINATION

3 BY MR. GIMBEL:

4 Q Just a brief question.

5 In the proposed process, you would pick up a
6 certain amount of gallons from two, three, five, or
7 15 customers and then bring it back?

8 A Uh-huh.

9 Q Then would each customer get the same
10 gallonage that was taken from their location?

11 A The -- in the processed system, we would
12 pick up what they would have and give them back, you
13 know, what they --

14 Q The same --

15 A The same amount.

16 Q The same quantity that had been removed from
17 their facility?

18 A Right. Now we have no way -- most people
19 would want more, but we have no way to get more.

20 Q I see.

21 A A typical client, and again, this is a
22 generality, will have enough antifreeze to --
23 recyclable antifreeze waste to replace about 50
24 percent of their new purchases. In other words,

1 they will have to buy about 50 percent antifreeze

2 and then --

3 Q The remainder comes from recycling?

4 A Right, because of the simple fact that cars,

5 they have got top off, they don't get a waste back a

6 hose breaks and they have to tow it in, they put the

7 new stuff in, there is no waste to get back. When

8 they are changing, they spill a little bit on the

9 shop floor, whatever, there is a loss in the

10 process, so that's why we only can replace about

11 half their coolant.

12 Q So if you take 106 gallons from customer one

13 and 53 gallons from customer two and mix them all

14 together, customer one will get back 106 gallons and

15 customer two will get back 53 gallons?

16 A Right.

17 MR. GIMBEL: Okay. I have no further questions.

18 THE HEARING OFFICER: Any redirect?

19 MR. RIFFNER: No redirect.

20 THE HEARING OFFICER: I have one question.

21 You talk about the reverse osmosis process. You

22 indicated that it was a machine that you would have

23 at this central facility. Can you elaborate a

24 little bit on what the machine does? Is it a filter

1 system or what exactly happens?

2 THE WITNESS: The reverse osmosis works under
3 pressure, about 400 pounds of pressure, and there is
4 a membrane which technically is not a filter, but
5 it's similar, and what it does is because of the
6 pressure and also the ionic charge of certain
7 molecules, certain things will permeate through it,
8 and that's why Exhibit 3, Vial B, the clear liquid,
9 is clear because the things that permeate through
10 what we call a permeate, the only thing it allows to
11 go through the membrane because of the pressure and
12 the ionic charge is the glycol and water. The dyes
13 are rejected because -- I'm not a chemist. This is
14 super laymen terms: The dyes are rejected because
15 of their charge and molecular size.

16 THE HEARING OFFICER: So then you have a waste
17 that's generated as a result of that?

18 THE WITNESS: Right. An RO system will have
19 about one percent waste. Basically, we will be left
20 with ethylene glycol and water, which is similar to
21 Exhibit 2-B, which is the filtered product. It will
22 just be very darkly dyed green because you have got
23 now the concentration of -- for an example, you take
24 100 gallons of Exhibit 2-B and you concentrate that

1 dye into about a gallon of glycol and water, and so
2 it will be a dark green.

3 THE HEARING OFFICER: And then how do you dispose
4 of waste that's generated?

5 THE WITNESS: That is hauled away by licensed
6 waste haulers much the same way that a shop would
7 have their antifreeze hauled away.

8 THE HEARING OFFICER: Okay.

9 RECROSS EXAMINATION

10 BY MR. GIMBEL:

11 Q I have a further question. Describe the
12 tanks in your setup in your processing facility.

13 A The facility will have stainless steel
14 tanks, 1500 gallons. We will -- we have a holding
15 tank where you initially put the product, and then
16 it goes into a processing tank.

17 In the processing tank, the fluid is constantly
18 pushed through this RO machine. It's a slow process
19 of bringing it out. It's called a concentrate tank,
20 and the fluid keeps circulating through it, and a
21 small percentage of the permeate comes out in the
22 permeate tank, and you keep recirculating that until
23 you wind up with a small amount of antifreeze.
24 That's the concentrate of dye, and that is put into

1 drums to be hauled away by a hauler. We will be
2 completely contained by secondary containment, you
3 know, in case of a spillage following all the
4 regulations, you know, percentage of tanks and
5 volumes to how high the wall must be.

6 Q How many tanks do you have in this
7 centralized process?

8 A Eventually, we will have six. We don't have
9 them all in.

10 Q And how are the -- you have three for each
11 line, so to speak?

12 A Right. We will have -- eventually down the
13 line, we would like to get two RO machines, but
14 originally, we just have one line with the other
15 line being empty, you know, in case there is ever an
16 issue whenever we can pump the fluid into the other
17 tanks.

18 Q So explain what happens in each of the
19 tanks.

20 A The one tank is just simply a receiving tank
21 where the trucks put all their antifreeze in, and
22 then we pump it from that tank into what is known as
23 the concentrate tank where the machine just keeps
24 circulating that through, and the final tank is what

1 comes out of the machine, the permeate, the clear
2 liquid where, you know, once we have processed
3 everything, we fill -- that tank will be filled up.
4 We then add the dyes and the additives, and you have
5 a more thorough mixing where it's a professional
6 fan, if you will, or blade that's inside of that
7 where it mixes it up for about 15 minutes so
8 everything is completely evenly distributed through
9 the process -- through all the product, and then
10 it's a finished product.

11 Q What is the time frame between a pickup from
12 a customer and of X amount of gallons being returned
13 to him of that same X amount of gallons?

14 A Well, what we propose to do would be -- we
15 would actually have the new stuff already on the
16 truck, so we wouldn't -- the customer wouldn't
17 necessarily be getting back his exact antifreeze.
18 What we would pick up on Monday, the waste will be
19 processed overnight, and the truck would leave with
20 the new antifreeze. We pump the waste, filter it
21 onto the truck, and then pump off pre-recycled
22 antifreeze into his drums.

23 Q In the same quantity?

24 A Yes. And then the truck at the end of the

1 night would then pull in, off-load his waste, refill
2 up so he's ready to go in the morning, and then
3 reprocess that at night.

4 Q So the entire processing for one day's
5 collections of the filtered antifreeze would pull in
6 in the afternoon of one day, and then in the morning
7 of the next day, it would have been processed
8 through the reverse osmosis process, additives and
9 dyes would have been blended, and it would then go
10 for delivery to the next day's customers?

11 A Yes.

12 Q That is correct?

13 A Uh-huh.

14 MR. GIMBEL: That's all the questions I have.

15 MR. RIFFNER: I have no more redirect

16 THE HEARING OFFICER: Okay. Thank you,
17 Mr. Gunderson.

18 Do we need to go off the record here for a
19 second?

20 MR. RIFFNER: If you want to. I have one more
21 person who will take ten minutes.

22 THE HEARING OFFICER: Okay.

23 (Whereupon, a discussion was held off the
24 record.)

1 THE HEARING OFFICER: Your next witness?

2 MR. RIFFNER: We will call Mr. Ed Stahl.

3 THE HEARING OFFICER: And have the court reporter

4 swear him in.

5 (The witness was duly sworn.)

6 EDWARD STAHL,

7 called as a witness herein, having been first duly

8 sworn, was examined upon oral interrogatories, and

9 testified as follows:

10 DIRECT EXAMINATION

11 BY MR. RIFFNER:

12 Q Mr. Stahl, can you state your name and spell

13 your last name for the record?

14 A Ed Stahl, S-t-a-h-l.

15 Q And are you currently employed?

16 A I'm self-employed.

17 Q And in what business?

18 A I am in the automotive tire and service

19 business.

20 Q And you own two Goodyear dealerships; is

21 that correct?

22 A Presently, that's correct.

23 Q And they do both, as you just said, repair

24 and installation?

1 A Mechanical repair, installation and tire
2 replacement.

3 Q Where are the two locations that you own?

4 A One is in Carol Stream, Illinois, and the
5 other one is in Algonquin, Illinois.

6 Q And how long have you been the owner of
7 these two facilities?

8 A Thirteen years in Carol Stream and six in
9 Algonquin.

10 Q And even prior to the 13 years in Carol
11 Stream, had you been in the automotive business
12 before that as well?

13 A Yes. I owned a couple of auto parts stores
14 in the city of Chicago.

15 Q Okay. You are familiar with Gary Gunderson;
16 is that correct?

17 A Yes, I am.

18 Q And his company Recycle Technologies?

19 A Right.

20 Q And currently, Recycle Technologies comes
21 on-site and recycles used antifreeze; is that
22 correct?

23 A Yes, at both my locations.

24 Q And how long has that process -- how long

1 has Mr. Gunderson been associated with?

2 A Oh, geez. I really didn't pay attention to
3 that, but I would say at least a couple years
4 approximately, two, three years.

5 Q Have you been satisfied with the service
6 that you get?

7 A Very satisfied. He's very professional.
8 He's very courteous. He's a nice young man. They
9 do a good job. The product is very good quality.
10 He never makes a mess, and it's nice dealing with
11 people like him.

12 Q Okay. You are in the process or you are in
13 the practice of repairing automobiles on a daily
14 basis; is that correct?

15 A Yes.

16 Q And often times, when these vehicles arrive
17 at your location, they are either out of or low on
18 antifreeze or coolant; is that correct?

19 A Yes, that's correct.

20 Q And can you explain briefly to the board how
21 it is that they become low on antifreeze or coolant?

22 A Well, cooling system problems are a major
23 part of the repair business. People drive cars or
24 trucks. They need antifreeze to keep their engines

1 cool, so they either use the coolant up. The
2 coolant has to be changed like a maintenance-type
3 item on a periodic basis after the vehicle is driven
4 a certain numbers of miles, and it's an important
5 part of the business.

6 Q And when people come to your location, they
7 are actually either out of antifreeze completely
8 sometimes or low on antifreeze; is that correct?

9 A Well, if they were out of antifreeze
10 completely, usually the car is towed in, so the
11 great percentage of the times they come in, they are
12 either low on antifreeze or their antifreeze is in
13 need of replacement.

14 Q Okay. And then what do you do at that point
15 in time with the antifreeze that's left in the
16 customer's tank?

17 A We put the waste antifreeze in a 100-gallon
18 plastic reservoir tank.

19 Q And those are on-site at your facility?

20 A Those are on-site, right, and they are
21 either hauled away by places that are in that type
22 of business like Safety-Kleen or the product -- the
23 old product is recycled.

24 Q And prior to dealing with Recycle

1 Technology, did you have that hauled away?

2 A Yes. It had to be hauled away on a regular
3 business.

4 Q There is a cost to that; is that correct?

5 A Absolutely.

6 Q And do you recall what the cost was?

7 A I really can't, but it's relatively
8 expensive.

9 Q And it is more economically efficient to
10 you, is it not, to have the antifreeze recycled; is
11 that correct?

12 A Yes, it most definitely is.

13 Q Okay. In your experience, what is the cost
14 of antifreeze to you generally?

15 MR. GUNDERSON: For new?

16 BY MR. RIFFNER:

17 Q For new antifreeze.

18 A It varies up and down. They will tell you
19 that ethylene glycol, which is the main product of
20 antifreeze, is in short supply at different periods
21 of time. They usually happen to do that around the
22 colder weather so they can get more money for their
23 product. I don't know. We pay as little as 2.89
24 for new antifreeze all the way up to like 4.59, 4.79

1 a gallon.

2 Q And what does that correspond to the price
3 to the ultimate consumer?

4 A We usually get about \$8 a gallon.

5 Q And what is --

6 A But that's an installed price, you know.

7 Q Sure. What is the cost associated with the
8 recycled antifreeze?

9 A Considerably less. I think it's less than
10 \$2, if I'm not mistaken.

11 Q And does that correspond often times with a
12 reduced cost to the consumer actually?

13 A Not really.

14 Q Okay.

15 A The quality is good.

16 Q What is sitting in front of you, there are a
17 number of vials, but directing your attention to
18 what is Exhibit 2, it's got three vials in it. Do
19 you see that?

20 A Yes.

21 Q And assuming that on the left that is the
22 waste antifreeze, the antifreeze that's pumped out
23 into the reservoir that you just talked about, does
24 that look familiar to you? I mean, is that the --

1 A Ours is usually dirtier than that.

2 Q And the product that's in Vial C that's in
3 the exhibit that you are holding, which is 2, the
4 one on the right, do you recognize that as the
5 product that goes back into your --

6 A Well, hopefully it would be that clean or
7 cleaner.

8 Q Okay. And you are familiar with brand new
9 antifreeze; is that correct?

10 A Familiar in what respect?

11 Q I mean, you see it on a daily basis.

12 A Yeah. I see it, yeah.

13 Q And what is in, say, for example, Exhibit
14 1? There are two vials, a green and an amber or
15 orange colored.

16 A Right.

17 Q Are you familiar with those?

18 A The majority of time, our new antifreeze is
19 green in color unless it's the new antifreeze which
20 is a must for the newer cars, and that's Dextral, so
21 that's a different color.

22 Q That's more of the orangish-amber color?

23 A Right.

24 Q And at the present time, when cars come in

1 that have that Dextral or whatever the new
2 antifreeze, that gets pumped down into the same
3 reservoir, does it not, as the green antifreeze?

4 A Yes.

5 Q And then that's processed to turn into what
6 is in your hand in Exhibit 2-C which is what goes
7 back into the car as you understand; is that
8 correct?

9 A Uh-huh.

10 Q Yes?

11 A Yes.

12 Q Assuming that Mr. Gunderson was able to
13 adopt the process that he is proposing to the board
14 here and present to you a product that's closer to
15 what is in Vial C on Exhibit 3 -- do you see that?

16 A Yes.

17 Q Does that look like a more attractive
18 product to you?

19 A Well, it certainly looks cleaner, but, you
20 know, we would have to ascertain as to whether or
21 not it would have the proper integrity to it and
22 would be able to protect a car for the colder
23 temperature ranges that we receive in this area of
24 the country periodically, not so much this year,

1 but, you know...

2 Q Assume it's got the same additives and

3 protective qualities as --

4 A Well, yes. I think that would be a nicer

5 looking product. I would rather have that in my car

6 than this, but customers don't really -- you know,

7 as long as they know their cars are protected, they

8 are happy.

9 Q Okay. But if you were to receive a product

10 that was more in line with what we see as Exhibits

11 15 and 16, that would be more attractive to you?

12 A Yes.

13 MR. RIFFNER: I have no further questions.

14 MR. GIMBEL: I have no questions.

15 MR. RIFFNER: Maybe I could ask one more I

16 forgot to ask you.

17 BY MR. RIFFNER:

18 Q If this product was -- the recycled product

19 was available to you in a greater quantity, would

20 you purchase it, do you know what I mean, as opposed

21 to right now where you are recycling -- say you

22 recycle 100 gallons and you get back 100 gallons.

23 A Right.

24 Q Do you have a demand for more?

1 A Yes. I still buy new antifreeze because we

2 always have demand for more than what he recycles.

3 Q Can you give an estimate even as to what

4 amount you buy for the shops that are new as opposed

5 to what is recycled?

6 A It's really hard to say because it depends

7 on the time of year, but we probably go through 100

8 to 150 gallons a month.

9 Q Of new?

10 A New and recycled.

11 Q Okay.

12 A It depends on the time of year. I mean, in

13 October, you can double that.

14 Q Okay. But out of the 100 to 150, could you

15 give the board just a rough estimate of how much of

16 that is new and how much of that is recycled?

17 A Well, probably about -- right now, I would

18 say a minimum of 50 is recycled. Probably even more

19 than that.

20 Q So 50 percent of it is new or more?

21 A Fifty or less is new. I would say it's

22 about 50/50. If you asked me for an exact, I would

23 say I'm safe in telling you it's 50/50.

24 Q But you as a consumer of the recycled

1 antifreeze would be interested in an additional
2 amount of recycled antifreeze?

3 A Certainly. It's going to be saving me
4 money.

5 MR. RIFFNER: Okay. I have no further
6 questions.

7 THE HEARING OFFICER: Mr. Gimbel?

8 MR. GIMBEL: No questions.

9 MR. RIFFNER: Thank you.

10 THE HEARING OFFICER: Mr. Riffner, do you have
11 any further witnesses?

12 MR. RIFFNER: We have no more witnesses. We
13 would rest at this time.

14 THE HEARING OFFICER: And, Mr. Gimbel, will the
15 agency call any witnesses today?

16 MR. GIMBEL: No.

17 THE HEARING OFFICER: Okay.

18 MR. RIFFNER: I move that we admit Exhibits 1
19 through 21.

20 THE HEARING OFFICER: I was just going to ask you
21 that. Any objection?

22 MR. GIMBEL: No.

23 THE HEARING OFFICER: Okay. Petitioner's
24 Exhibits 1 through 21 are admitted.

1 (Petitioner's Exhibit Numbers 1 through 21

2 admitted into evidence, 4-1-8.)

3 THE HEARING OFFICER: Do we have any other

4 business that needs to be taken care of at this

5 time?

6 MR. GIMBEL: I suppose the only question would be

7 if the Petitioner is going to file any briefs.

8 THE HEARING OFFICER: Right, and we will get to

9 that in just a second.

10 MR. RIFFNER: Well, do you think that there is

11 any need to do something -- package up these used

12 filters to show what that process amounts to?

13 THE HEARING OFFICER: Well, I will note I think

14 we talked about this before we began the hearing,

15 and I will note on the record that the used filters

16 were made available and used as demonstrative

17 exhibits today. They were not marked as exhibits

18 and have not been entered into the record as

19 exhibits. However, if the board is interested in

20 viewing these filters, would the agency have any

21 objection further on down the road?

22 MR. GIMBEL: No.

23 THE HEARING OFFICER: Okay. If the board is

24 interested, then we will contact you, Mr. Riffner,

1 and ask for those.

2 MR. RIFFNER: Okay.

3 THE HEARING OFFICER: Okay. I will note also
4 that no members of the public appeared throughout
5 the course of the proceedings this morning, so there
6 are no public comments that will be admitted into
7 the record today.

8 Pursuant to board regulations, I am required to
9 make a statement as to the credibility of witnesses,
10 and these statements are based on my legal judgment
11 and experience. Based on that judgment and
12 experience, I will state that I found all the
13 witnesses credible today, and therefore, credibility
14 should not be an issue in the board's decision on
15 this adjusted standard petition.

16 We will go off the record here for a minute, and
17 we will talk about a posthearing comment schedule.
18 When we come back on the record, we will place that
19 schedule into the record, and then we will adjourn
20 for the day.

21 (Whereupon, a discussion was held off the
22 record.)

23 THE HEARING OFFICER: We will go back on the
24 record.

1 Off the record, we just discussed the filing of
2 posthearing comments. Based on our discussions, I'm
3 prepared to order the following schedule: The
4 transcript of these proceedings should be completed
5 within ten days. Fourteen days thereafter, the
6 Petitioner will submit their posthearing comments.
7 Fourteen days after that, the agency's comments will
8 be due, and then within seven days thereafter, the
9 petitioner will file, if necessary, a reply to the
10 agency's comments.

11 As I stated earlier, it's important for the
12 parties to remember that any comments made in the
13 form of a posthearing comment must be based on
14 evidence and testimony presented today and that is
15 in the record and in the transcript. No new
16 evidence may be presented in the posthearing
17 comments.

18 And unless we have any other unfinished business,
19 I will conclude these proceedings. On the record,
20 it is 12:15, Wednesday, April 1st. We stand
21 adjourned. Thank you all very much.

22 MR. RIFFNER: Thank you.

23 (Which were all the proceeding concluded
24 in the above-entitled matter at 12:15 p.m.)

1 STATE OF ILLINOIS)
) SS.
2 COUNTY OF COOK)

3

4 I, CARYL L. HARDY, a Certified Shorthand
5 Reporter doing business in the County of Cook and
6 State of Illinois, do hereby certify that I reported
7 in machine shorthand the proceedings at the hearing
8 of the above-entitled cause.

9 I further certify that the foregoing is a
10 true and correct transcript of said proceedings as
11 appears from the stenographic notes so taken and
12 transcribed by me.

13

14

15

16

17 CSR No. 084-003896

18

19

20

21

22

23

24