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1 RAYMOND HARBISON, called as a witness by and on
2 behalf of the defendant Velsicol Chemical Corporation, having
3 been first duly sworn, was examined and testified as follows:

4
5 THE COURT: Would you have a seat over here in the
6 witness stand.

7 All right, sir.

8 DIRECT EXAMINATION

9
10 BY MR. BEYER:

11 Q Doctor, please state your name.

12 A My name is Raymond Harbison.

13 Q And what is your current employment, sir?

14 A I'm employed at the University of Arkansas for Medical
15 Sciences.

16 Q And what is your position there?

17 A I am director of the Division of Toxicology in the
18 Interdisciplinary Toxicology Program, which is a cooperative
19 program between the University of Arkansas for Medical
20 Sciences and the National Center for Toxicological Research.

21 Q Could you tell us something about your educational
22 background, sir?

23 A I received a Bachelor of Science degree from Drake
24 University in pharmacy in 1965. I received a Master of
25 Science degree in pharmacology in 1967 from the University of

1 Iowa, and I received a doctorate in pharmacology and
2 toxicology from the University of Iowa School of Medicine in
3 1969.

4 Q Could you tell us something, Doctor, about your employment
5 prior to your present employment at the University of Arkansas
6 Medical School?

7 A Yes. I was employed by Tulane Medical School for
8 approximately three years, where I was an assistant professor
9 of pharmacology and investigator in the laboratory of
10 environmental medicine. I subsequently went to Vanderbilt
11 Medical Center for approximately ten years, where I was in
12 the Department of Pharmacology and the Center for Clinical
13 Pharmacology and Toxicology.

14 Q And could you tell us something about the duties that
15 you now perform at the University of Arkansas?

16 A Yes. I teach medical students in the area of toxicology.
17 I also teach emergency medicine residents in the area of
18 toxicology. I conduct research on the effects of
19 environmental toxicants and chemicals on the living organism,
20 and I direct a graduate education program for students who
21 are receiving a degree in toxicology.

22 Q Do you do any consulting work at any hospitals?

23 A Yes, I do.

24 Q Could you tell us about that, please?

25 A I'm a consultant to the emergency room at the University

1 Hospital and to various hospitals within the Arkansas
2 immediate area.

3 Q And have you done any work in the area of birth defects?

4 A Yes, I have.

5 Q Could you tell us about that?

6 A I have conducted evaluations of chemicals for their
7 ability to produce birth defects and I also run a prenatal
8 diagnostic testing laboratory for the evaluation of neurotube
9 defects during the first trimester of pregnancy.

10 Q Have you done any work with or for any federal agencies
11 or federal government bureaus?

12 A Yes, I have.

13 Q Could you tell us about that, please?

14 A I have served as an expert witness for the United States
15 Department of Justice in enforcement litigations concerning
16 the effects of chemicals on human health. I have served as
17 the past chairman of the National Institute of Occupational
18 Safety and Health Study Review Group, which is the group that
19 reviews the research being done on chemical and chemical
20 exposures in the workplace.

21 I have also served as a consultant to the Environmental
22 Protection Agency for approximately the last eight years in
23 the evaluation of human health effects associated with the
24 spills or the presence of chemicals in the environment.

25 Q And have you done work with the National Institutes of

1 Environmental Health and Safety?

2 A Yes, I have.

3 Q Could you tell us about that, please?

4 A For approximately the last twelve years I have received
5 funds from the National Institute of Environmental Health
6 Sciences to evaluate the effects of environmental toxicants
7 on the living system.

8 Q And have you done any research on pesticides?

9 A Yes, I have.

10 Q Would you tell us about that, please?

11 A I have evaluated the effects of chlordane and other
12 chlorinated hydrocarbon insecticides and pesticides as well
13 as the organophosphate insecticides and pesticides.

14 Q Has that been funded by any public agency?

15 A Yes, it has.

16 Q Would you tell us what it was, please?

17 A It's been funded by -- primarily by the National Institute
18 of Environmental Health Sciences as well as the National
19 Foundation, March of Dimes.

20 Q And about what was the grant level that you've received
21 over the past several years for that?

22 A I would estimate that over the last ten years it's
23 probably been around \$3,000,000.00.

24 Q And have you done any work for the State of Florida?

25 A Yes, I have.

1 Q What did you do for them?

2 A For the State of Florida, I evaluated the effects --
3 the human health effects of a variety of chemicals that might
4 be found in the environment, specifically to develop water
5 quality criteria, that is, the criteria that would be used
6 to set the allowable levels of chemicals in the water supply,
7 and I have evaluated the health effects and set the criteria
8 for chlordane in other chlorinated substances.

9 Q Have you had any publications in scientific or scholarly
10 journals as a result of your research?

11 A Yes, I have.

12 Q About how many?

13 A I would estimate that I probably have over a hundred
14 publications.

15 Q And have you published material on the toxicology of
16 chlordane?

17 A Yes, I have.

18 Q Are you board certified?

19 A Yes, I am.

20 Q What field are you board certified in?

21 A I am board certified in the area of toxicology, with a
22 specialty in the area of the evaluation of the health effects
23 associated with the exposure to chemicals.

24 Q And what requirements are there to be board certified
25 in that field?

1 A There are educational requirements, there are experience
2 requirements, and there is a general evaluation requirement.

3 Q And do you belong to any professional associations?

4 A Yes, I do.

5 Q Could you tell us about those, please?

6 A I belong to the Society of Toxicology, the American
7 Association for Pharmacology and Experimental Therapeutics,
8 the Teratology Society and the American Association for the
9 Advancement of Science.

10 Q And what is teratology, sir?

11 A Teratology is the study of birth defects.

12 Q Have you ever been qualified to testify as an expert in
13 the federal court?

14 A Yes, I have.

15 Q About how many times?

16 A I would estimate approximately a half a dozen times.

17 MR. BEYER: Your Honor, at this point we'd like to
18 proffer Dr. Harbison as an expert in the field of toxicology.

19 MR. WOOLF: Well, Your Honor, I would agree that
20 he's a toxicologist. I don't know if he's got any relevance
21 to this case as yet. We haven't shown anything having to do
22 with this case. I understand he does water quality research,
23 but he hasn't been tied into this case or into chlordane.

24 THE COURT: Overruled.

25 Well, I'm going to permit him to testify in the

1 field of toxicology. If you have any specific objection to
2 his testimony coming in, of course, you let me know.

3 BY MR. BEYER:

4 Q Doctor, would you please explain to us what toxicology
5 is?

6 A Toxicology is basically the study of the harmful effects
7 of chemicals and other substances on the living system.

8 Q In the study of toxicology, is there a concept of
9 threshold?

10 A Yes, there is.

11 Q Could you tell us about that, please?

12 A Yes. One of the most important concepts in the area of
13 toxicology is to be able to determine the level or the
14 concentration that is required to produce an effect. That
15 level or concentration is called the threshold, and the
16 threshold is essentially the level that is required in the
17 living system to produce an effect.

18 An analogy might be the taking of certain medications,
19 for example. You know that you have to take two pills or
20 four pills, basically, to have an effect.

21 The toxicologist evaluates the levels of chemicals
22 that are required to produce certain effects in the living
23 system.

24 Q And does the notion of threshold apply to all chemicals?

25 A Not to all.

1 Q Does it apply to chlordane and heptachlor?

2 A Yes, it does.

3 MR. WOOLF: Objection, Your Honor. We haven't --
4 still haven't had any qualifications of the witness to give
5 an opinion on chlordane and heptachlor.

6 THE COURT: He said he's made studies, as I --

7 Well, did you say that you made studies of chlordane?

8 THE WITNESS: Yes, sir, I have.

9 MR. WOOLF: Could we find out what, Your Honor? I --

10 THE COURT: Huh?

11 MR. WOOLF: We still have a problem with this
12 witness' qualifications to give an opinion on chlordane and
13 heptachlor. He's certainly qualified as a general toxicologist,
14 and I understand that he's certified as a general toxicologist,
15 but we have not related this man to chlordane thresholds in
16 humans or any other organisms.

17 THE COURT: Well, he hasn't had time to talk about
18 it yet.

19 MR. WOOLF: Well, but he's elicited -- he's trying
20 to elicit the opinion first without getting the qualifications.

21 That's my objection, Your Honor.

22 He may very well be qualified, but I think he's
23 got a cart-and-horse problem. That's my objection.

24 THE COURT: Well, he says he's a toxicologist and
25 I've said that he can certainly testify in that field, and he

1 says that he's done studies in chlordane and you can
2 cross-examine him about it, but I'm certainly going to let
3 him testify about toxicology and chlordane.

4 MR. WOOLF: So I don't have to keep interrupting
5 Mr. Beyer, Your Honor, I just don't know about a general
6 objection --

7 THE COURT: Well, no. Any time he asks a question
8 that you object -- have any reservations about it, you object
9 to it.

10 The jury understands it's your duty to object when
11 you think you should.

12 I just don't want some general objection that you
13 might state now and then, for other purposes later on, contend
14 that it covered a half an hour of testimony.

15 MR. WOOLF: I appreciate that, Your Honor.

16 THE COURT: If you object to a question, you just
17 object to it.

18 MR. WOOLF: All right. I'll just have to keep --

19 THE COURT: We'll forgive you.

20 MR. WOOLF: Thank you, Your Honor.

21 THE COURT: The jury will certainly understand
22 that's your duty to your client.

23 MR. WOOLF: Thank you, Your Honor.

24 BY MR. BEYER:

25 Q Does the idea of a threshold for an effect of chlordane

1 or heptachlor apply to human beings?

2 A Yes, it does.

3 Q If, in a human being, chlordane or heptachlor passed this
4 threshold, what is the mode of action of those chemicals on
5 the human body?

6 MR. WOOLF: Objection.

7 THE COURT: All right. Overruled.

8 A Chlordane has a very specific effect in the body.

9 Chlordane is very specific for the nervous system,
10 and what chlordane does is to alter the ability of the
11 nervous system to transmit various messages and the results
12 of that alteration essentially is a stimulation of the nervous
13 system which can result in a variety of symptoms.

14 So that the basic effect of chlordane is on the
15 nervous system to essentially alter the normal transmission
16 or the normal function of the nervous system.

17 Q (By Mr. Beyer:) When you say chlordane, do you mean to
18 include heptachlor as well?

19 A Yes, I do.

20 Q And in order to have this effect, do I understand you
21 to be saying that chlordane or heptachlor have to pass a
22 certain amount in the human body?

23 A Chlordane and heptachlor have to reach a certain level
24 within the human body before they will have such an effect.

25 Q If chlordane or heptachlor reach a high enough level to

1 pass that threshold and have this effect, what are the
2 external signs or symptoms that you would expect to see in
3 somebody?

4 A If the chlordane or heptachlor reaches a level that is
5 able to affect the nervous system, the results are essentially
6 a stimulation of the nervous system, and the first effects
7 would be an increased excitation, essentially increased
8 movement, agitation, perhaps a general increase in activity;
9 that, if the level got higher, would pass to a tremor or
10 a constant motion of the body and ultimately it might result
11 in a convulsion, which would be the most extreme.

12 Q And would you please describe what a convulsion is?

13 A A convulsion is an extreme contraction of all the muscles
14 of the body, resulting in a rigidity of the body and a shaking
15 of the body, which can in fact injure the body if the
16 convulsion goes on for some period of time.

17 It is essentially an uncontrolled contraction of
18 all the muscles of the body.

19 Q Is that sometimes called a seizure?

20 A Yes, it is.

21 Q Is that something that's really dramatic to witness?

22 A Yes.

23 Q If a person has a convulsion, is that person liable to
24 become injured from falling down or other side effects of
25 the convulsion?

1 MR. WOOLF: Objection.

2 Are we talking about chlordane seizure or other
3 seizures?

4 Can we tie this into something so as to make it
5 relevant to the case? Otherwise, I have to object.

6 THE COURT: Well, he's talking about convulsions
7 in general, as I understand the question.

8 MR. BEYER: Yes, Your Honor.

9 BY MR. BEYER:

10 Q Are the convulsions that come from too high a level of
11 chlordane or heptachlor in the body different from convulsions
12 generally?

13 A No, they are not.

14 Q All right. So is it possible that somebody who has a
15 convulsion will be injured?

16 A That is correct.

17 Q What kinds of injuries might you expect from somebody
18 who convulses?

19 A Well, the initial onset of a convulsion generally
20 results in the loss of consciousness. So as the muscles
21 begin to contract, the individual will lose consciousness and
22 fall down so that injuries can occur as a result of falling
23 and subsequently, because of the muscle contraction, the
24 severity of the muscle contractions, actually bones can be
25 broken and vertebrae can be fractured and other bones of the

1 body can actually be injured as a result of the uncontrolled
2 contraction of the muscles either as a result of banging
3 into something or falling or just from the contraction of the
4 muscles themselves.

5 Q Is the agitation, tremors and convulsion a progression
6 that constitutes a single syndrome?

7 A Yes, it is.

8 Q Would you explain to the jury what a syndrome is?

9 A A syndrome is a collection of symptoms or a group of
10 symptoms that occurs as a result of some initiation of some
11 process within the body. So that the syndrome here would be
12 initial agitation, which could pass on to tremors or shaking
13 of the body and then ultimately into a convulsion, which
14 would be the loss of consciousness and severe muscle
15 contractions.

16 Q Is that progression in any way diagnostic of chlordane
17 poisoning?

18 A Yes, it is.

19 Q Now, in order to get this characteristic result of
20 chlordane poisoning, what kinds of levels are in fact
21 necessary in the body?

22 MR. WOOLF: Objection.

23 THE COURT: Overruled.

24 A The levels that would be necessary in the blood would be
25 levels of from approximately two parts per million to somewhere

1 around three to three and a half parts per million.

2 Q (By Mr. Beyer:) Well, I want to make sure that we
3 understand this.

4 You're talking about parts per million with an
5 "m"; is that right?

6 A Yes, sir, that's correct.

7 Q So if people had two or three parts per billion, with
8 a "b," in their blood of various metabolites of chlordane,
9 that would be a thousand times less?

10 A Yes, sir.

11 Q Okay. If somebody is in fact poisoned by chlordane and
12 is exhibiting this syndrome, how is that person treated?

13 MR. WOOLF: I'm going to have to keep objecting,
14 Your Honor.

15 THE COURT: Overruled.

16 A The general treatment for those symptoms are essentially
17 symptomatic; that is, the convulsions, if they occur, are
18 simply treated by drugs which are known to control convulsions.

19 So, essentially, it's fairly easy to treat those --
20 those symptoms which occur.

21 Q (By Mr. Beyer:) Is there a specific antidote to chlordane?

22 A No, there is no antidote to chlordane.

23 Q Is that good or bad?

24 THE COURT: We're going far afield now. Let's see
25 if we can't --

1 Q (By Mr. Beyer:) Of the persons who have been poisoned
2 and who show this characteristic syndrome that you've experienced,
3 if they recover, do they show any long-term effects?

4 MR. WOOLF: Objection.

5 THE COURT: Overruled.

6 A No, they do not show long-term effects.

7 The effects of chlordane are temporary. While the
8 chlordane is in the blood at the threshold level or above,
9 it can cause these effects or these symptoms, but when the
10 chlordane disappears, essentially those effects are no longer
11 produced.

12 So it is a temporary effect which is produced only
13 while the chlordane is present at those levels to produce that
14 effect.

15 Q (By Mr. Beyer:) Now, we've been talking about blood
16 levels. I'd like to ask you if there is any correlation of
17 any of these effects with levels of chlordane or heptachlor
18 or their components or metabolites in the body fat?

19 MR. WOOLF: Objection.

20 THE COURT: Overruled.

21 A No, there is essentially no correlation with the levels
22 of chlordane or its metabolites in the body fat, and the
23 reason that there isn't a correlation is because essentially
24 those materials that are in the body fat are stored and they
25 are not available to the brain to have some action. So those

1 substances which are in the fat essentially are unavailable
2 for an effect within the human body.

3 Q (By Mr. Beyer:) Can the symptoms of nausea or vomiting
4 be related to chlordane or heptachlor exposure?

5 A If the material has been drunk or if it's ingested
6 through the mouth, yes, it could result in those effects.

7 Q Can nausea or vomiting be associated with overexposure
8 to chlordane or heptachlor if the products have been inhaled?

9 A No.

10 Q Could you tell us how chlordane and heptachlor are
11 eliminated from the body?

12 A Well, chlordane and heptachlor, like many other substances,
13 are eliminated from the body essentially by a process in
14 which the body converts these substances to other substances,
15 and those substances are known as metabolites.

16 So the body is able to take chlordane and heptachlor
17 and rather efficiently convert those to other substances which
18 are subsequently eliminated or excreted from the body. So
19 that what you take in within some period of time is eliminated
20 as a result of this transformation which occurs within the
21 body.

22 Q Is that what you were talking about as the reason for
23 the transients, the temporariness, of the effects of chlordane?

24 A Yes, sir, that's correct.

25 Q Could we have an understanding that whenever I use the

1 word "chlordanane" or you use the word "chlordanane," we're
2 talking about both chlordanane and heptachlor?

3 A Yes, that's agreeable.

4 Q Okay. Now, what happens if somebody is exposed to
5 chlordanane -- chlordanane vapor in the air over a long period of
6 time?

7 Does that have any effects on anybody?

8 MR. WOOLF: Objection.

9 THE COURT: Overruled.

10 A Chlordanane vapors in the air -- since chlordanane is not
11 very volatile, there won't be a very high level of chlordanane
12 vapors in the air, but even if there were chlordanane vapors
13 in the air, essentially the low levels or the low-level
14 exposure for a long period of time would not result in any
15 harm because essentially the chlordanane that is taken in is
16 efficiently transformed by the body into these other
17 substances which are known as metabolites and rather
18 efficiently excreted.

19 So what is taken in is essentially eliminated from
20 the body.

21 Q (By Mr. Beyer) So if somebody lived in a house where
22 there were trace levels of these compounds in the air, would
23 you expect it to have any effect on them at all?

24 A No, I would not.

25 Q Could you explain why you wouldn't expect such an effect?

1 A Well, because --

2 MR. WOOLF: Objection.

3 THE COURT: Overruled.

4 A Well, because the substances, when they're taken --
5 in this -- this case, chlordane, when it's taken into the
6 body, is essentially transformed and eliminated from the body
7 so that it can never reach a level -- the threshold which is
8 required for the production of the effects of chlordane.

9 So essentially what's taken in is transformed and
10 eliminated and, at these low levels, can never achieve a
11 threshold or concentration which would produce some effect
12 or result in the symptoms that I talked about earlier.

13 Q (By Mr. Beyer:) What kind of exposure would you need,
14 say, by drinking, or whatever, in order to produce this
15 known syndrome of chlordane poisoning?

16 MR. WOOLF: Objection.

17 THE COURT: Overruled.

18 A It would require a large dose of chlordane to produce
19 those effects. You would essentially have to drink chlordane
20 to be able to get a level -- a threshold level which would
21 produce the results that we talked about before.

22 Q (By Mr. Beyer:) Thank you, sir.

23 MR. WOOLF: Your Honor, I hate to interrupt Mr. Beyer
24 again, but he seems to have lapsed into his habit of thanking
25 the witness, and I just would ask that the Court --

1 THE COURT: Yes.

2 Members of the jury, I've called to your attention
3 before that indicated approval of a witness' answer by saying
4 "thank you" is highly improper, and I would ask counsel --

5 MR. BEYER: I'll stop, Your Honor.

6 THE COURT: -- to stop.

7 It's up to you to determine whether you think that
8 the answer is accurate or has any probative weight for you.
9 It's not up to counsel.

10 BY MR. BEYER:

11 Q Doctor, if someone is exposed to chlordane or heptachlor
12 in an amount sufficient to cause the known effects of that
13 exposure, how soon after that exposure do the symptoms appear?

14 A The symptoms would appear immediately, within a short
15 period of time, or certainly within thirty minutes to an hour.

16 Q Would the symptoms appear a year or a year and a half
17 or two years after the exposure?

18 MR. WOOLF: Objection.

19 A No, they would not.

20 THE COURT: Overruled.

21 Q (By Mr. Beyer:) Doctor, based on your own research,
22 your knowledge and your experience in the field, both in
23 general toxicology and in the toxicology of chlordane and
24 heptachlor, do you have an opinion to a reasonable degree of
25 scientific certainty as to whether exposure to chlordane can

1 cause cognitive deficits?

2 MR. WOOLF: Objection, Your Honor. He's already --

3 THE COURT: Overruled.

4 MR. WOOLF: -- established the witness is not a
5 medical doctor.

6 If he asks him about medical functions as opposed
7 to toxicology, he's certainly moving out of the area.

8 THE COURT: Overruled.

9 THE WITNESS: I'm sorry.

10 Yes, I have an opinion.

11 BY MR. BEYER:

12 Q And with regard to cognitive deficits, what is that
13 opinion, sir?

14 A My opinion is that chlordane cannot result in cognitive
15 deficits.

16 Q And on the same basis and to the same degree of scientific
17 certainty, can exposure to chlordane cause someone to have
18 difficulty in new-problem solving?

19 MR. WOOLF: Same objection.

20 THE COURT: Overruled.

21 A No, chlordane cannot do that.

22 Q (By Mr. Beyer:) And on the same basis and to the same
23 degree of scientific certainty, do you have an opinion as to
24 whether exposure to chlordane can cause memory loss?

25 MR. WOOLF: Same objection.

1 THE COURT: Overruled.

2 A Yes, I have an opinion, and chlordane does not produce a
3 memory loss.

4 Q (By Mr. Beyer:) Okay. Could you explain to us all why
5 you hold that opinion?

6 A The reason I hold that opinion is because we know a lot
7 about chlordane. Chlordane has been around for a long time
8 and it's been studied extensively, and essentially we know
9 the mechanism by which chlordane affects the body; and the
10 mechanism, as I have previously explained, is a temporary
11 effect on the nervous system, resulting in stimulation of the
12 nervous system, resulting in a progression from agitation to
13 tremors and to ultimately convulsions if the level is above
14 the threshold or at the threshold, and it does not produce
15 changes in memory or other changes within the brain.

16 Q Does any symptom of chlordane exposure occur outside the
17 context of an oncoming convulsion?

18 MR. WOOLF: Objection.

19 THE COURT: Overruled.

20 A No, it does not.

21 Q (By Mr. Beyer:) Based on your knowledge, your research
22 and your experience, do you have an opinion to a reasonable
23 degree of scientific certainty as to whether chlordane --
24 exposure to chlordane or heptachlor can cause fevers?

25 MR. WOOLF: Objection.

1 THE COURT: Overruled.

2 A Yes, I have an opinion. Chlordane does not cause fevers.

3 Q (By Mr. Beyer:) And could you tell us why you hold that
4 opinion, sir?

5 A Because, again, the effects are very specific of chlordane
6 in the brain, and it does not result in a change of the
7 temperature of the body. It results in a stimulation of the
8 brain, which results in agitation or can result in agitation,
9 tremors and ultimately convulsions. It does not affect the
10 temperature of the body.

11 Q Do you have an opinion, on the same basis and to the same
12 degree of certainty, as to whether exposure to chlordane or
13 heptachlor has any known effect on the bladder or the urinary
14 tract?

15 MR. WOOLF: Objection.

16 THE COURT: Overruled.

17 Why don't we do this: Why don't we just read off
18 all this table that you want to and just let him make one
19 answer as to all, if the same answer affects all, or
20 distinguish, if there's some left out?

21 MR. BEYER: All right.

22 THE COURT: Then we won't have to repeat the --

23 MR. BEYER: Could I -- I do it --

24 THE COURT: -- the litany that goes with the answer
25 or with the question.

1 MR. BEYER: Could I take each plaintiff
2 individually, Your Honor?

3 THE COURT: All right.

4 BY MR. BEYER:

5 Q Doctor, have you been consulted by medical doctors in
6 cases of alleged poisonings by chlordane or heptachlor?

7 A Yes, I have.

8 THE COURT: Has he what? I'm sorry.

9 MR. BEYER: I'm sorry. Been consulted by medical
10 doctors.

11 BY MR. BEYER:

12 Q Do you provide that consultation as part of your regular
13 work?

14 A Yes. As part of my normal practice and duty within the
15 medical center, I provide consultation to the emergency room
16 at our university hospital, as well as other emergency rooms,
17 the information being provided or the technical advice being
18 that certain levels produce certain things, and I provide
19 knowledge and information about the levels -- the threshold
20 levels which are required to produce those effects and what
21 the effects are likely to be.

22 Q Suppose a doctor told you that he had a patient who
23 was complaining to him of nausea, diarrhea, a feeling that
24 she can't catch her breath, dizziness, headaches, weakness,
25 tingling, memory problems, lowered attention span, nervousness,

1 ringing in the ears, a rash which was treated and cured, an
2 inability to sleep, burning in her chest, wart-like things
3 growing on her skin, and an inability to urinate, and
4 suppose you were also told that this person had blood levels
5 of heptachlorepoide of 3.2 parts per billion and of
6 trans-nonachlor of .5 parts per billion.

7 Based on your research, your training and your
8 experience, do you have an opinion to a reasonable degree of
9 scientific certainty as to whether these symptoms are the
10 result of poisoning by or exposure to chlordane or heptachlor?

11 MR. WOOLF: Objection.

12 THE COURT: Overruled.

13 A Yes, I do.

14 Q (By Mr. Beyer:) And what is that opinion, sir?

15 A My opinion is that chlordane cannot cause those effects.

16 Q And what is it about the blood levels that contributes
17 to that opinion?

18 A The blood levels are low.

19 In the normal population, the levels would range
20 from one to 24 parts per billion.

21 So these blood levels would actually be exceedingly
22 low for the normal population.

23 Q And what is it about the symptoms that leads you to
24 conclude that this is not a case of overexposure to chlordane?

25 A The symptoms are not compatible with the known effects of

1 chlordane. Chlordane does not produce those symptoms.

2 Q And suppose a doctor told you he had a patient who
3 complained of diarrhea after eating, soreness of the back,
4 legs and hips, being short-tempered, having headaches and
5 fever and exhaustion, and a rash in the armpit, and memory loss
6 and had blood levels of 3 parts per billion of heptachlorepoide
7 and one part per billion of trans-nonachlor.

8 On the same basis and to the same degree of scientific
9 certainty, do you have an opinion as to whether that would
10 have been caused by exposure to or poisoning by chlordane or
11 heptachlor?

12 MR. WOOLF: Objection.

13 THE COURT: Overruled.

14 A Yes, I do.

15 Q (By Mr. Beyer:) And what is that opinion, sir?

16 A My opinion is that chlordane could not cause those
17 effects.

18 Q All right. And what is it about the blood levels that
19 leads you to that conclusion?

20 A Again, those blood levels are very low.

21 The normal population will range between one and
22 24 parts per billion.

23 So the one part per billion, for example, is at
24 the lower end of the normal for the basic U. S. population.

25 Q And what is it about the symptoms that leads you to that

1 conclusion, sir?

2 A The symptoms are not compatible with the known effects
3 of chlordane. Chlordane does not produce those symptoms.

4 Q Suppose a doctor said to you, sir, that he had a patient
5 who was complaining of headaches and difficulty concentrating
6 on his schoolwork, one episode of talking jibberish on the
7 telephone, and a transient loss of vision on one side of his
8 right eye.

9 Do you have an opinion to a reasonable degree of
10 medical certainty as to whether that would have been caused
11 by chlordane or heptachlor?

12 MR. WOOLF: Objection.

13 THE COURT: Overruled.

14 A Yes, I do.

15 Q (By Mr. Beyer:) And what's that opinion, sir?

16 A My opinion is that it would not be caused by chlordane.
17 Chlordane does not produce those effects.

18 Q And if you were consulted by a doctor who said he had
19 a patient who complained of headaches and a vision problem
20 which was fixed by getting glasses, and having a persistent
21 cough and the feeling of burning in the nose and who had
22 2.6 parts per billion of heptachlorepoxyde in her blood and
23 no detectable trans-nonachlor, would you have an opinion as
24 to whether those symptoms were caused by exposure to chlordane
25 or heptachlor?

1 A Yes, I would.

2 Q And what would that be, sir?

3 A My opinion would be that chlordane could not cause those
4 symptoms.

5 Q And if you were consulted by a doctor who said that he
6 had a patient who complained of headaches and occasional
7 nocturnal leg cramps and a rash, and who had 2.9 parts per
8 billion of heptachlorepoide in his blood and one part per
9 billion of trans-nonachlor in his blood, based on the same
10 knowledge, research and experience, and to the same degree of
11 scientific certainty, would you have an opinion as to whether
12 those symptoms were caused by exposure to chlordane or
13 heptachlor?

14 MR. WOOLF: Objection.

15 THE COURT: Overruled.

16 A Yes, I would.

17 Q (By Mr. Beyer:) And what would that opinion be?

18 A My opinion would be that chlordane could not cause those
19 effects of those symptoms.

20 Q And what is it, sir, about the levels in the blood that
21 leads you to that conclusion?

22 A Again, those levels are low, the normal being from one
23 to 24 parts per billion.

24 MR. BEYER: All right. Thank you, sir.

25 No further questions.

1 THE COURT: All right, cross-examine.

2 You folks need a recess? Can we hold out for a while?

3 Okay.

4 CROSS-EXAMINATION

5
6 BY MR. WOOLF:

7 Q Dr. Harbison, you don't get -- it's not possible to get
8 a rash from skin contact with chlordane?

9 A No, sir.

10 Q It doesn't produce irritation of the skin or the eyes?

11 A It produces irritation of the eyes if you spill the
12 liquid into the eyes, and with prolonged contact of the
13 liquid, it can produce irritation of the skin.

14 Q What's the difference between irritation of the skin and
15 a skin rash?

16 A Irritation is a reddening of the skin; a rash is the
17 development of bumps and the actual change in the morphology
18 or the character of the skin.

19 Q Doctor, I was looking over your curriculum vitae and I
20 see a lot of publications about psychedelic drugs.

21 That's an area you published a lot in, right?

22 A I have published some papers in that area; yes, sir.

23 Q How many?

24 Most of your publications have been on psychedelic
25 drugs; isn't that true?

1 A I don't believe that's true.

2 Q Well, it's fair to say a lot of them have been; isn't
3 that correct?

4 A Some of them have been.

5 Q And some of them have been on addiction; isn't that true?

6 A That is correct.

7 Q That's another major category of your publications?

8 A I believe I only really have one publication on
9 addiction.

10 Q What's the difference between a publication and an
11 abstract?

12 A An abstract is a presentation that is given before a
13 group of scientists at a professional meeting.

14 Q That's not a publication that's been accepted by a peer
15 review journal, then?

16 A Yes. All of those are essentially published in the
17 professional journal of the society at which they have been
18 presented. For example, the presentations at the Society of
19 Toxicology are published in the Journal of Toxicology and
20 Applied Pharmacology.

21 Q And that one preceding thirteen years ago, is that the
22 only publication you've had that is on chlordane?

23 A No, sir.

24 Q How many others have you had on chlordane?

25 A I would estimate that there are a few others. I can't

1 recall the exact number.

2 Q When were they?

3 A The exact year?

4 Q Approximately.

5 A Oh, I believe it probably would've been 1972, '73, '75.

6 Q Are they publications or are they abstracts?

7 A No, sir. That would be a publication.

8 Q Are they listed on your curriculum vitae?

9 A I believe so.

10 Q Do you have a copy with you?

11 A No, sir.

12 Q You've got one on "Comparative Toxicology."

13 I assume that talks, at least in part, on chlordane.

14 Is that what you're referring to?

15 A Yes, sir.

16 Q Any others?

17 A I believe that there are others. I can't recall them.

18 Q You're not a medical doctor; is that correct?

19 A No, sir.

20 Q No, it's not correct; or, yes, it's correct, you're not
21 a medical doctor?

22 A I am a board certified toxicologist. I am not a
23 physician.

24 Q You're not licensed to diagnose and treat patients, are
25 you?

1 A No, I'm not.

2 Q When you did the research that you alluded to about
3 chlordanes and heptachlor, that was on rodents?

4 A Yes, sir.

5 Q And from that, you can generalize to the human health
6 effects of chlordanes?

7 A The study is what it was. It was a study of rodents.
8 It's part of the scientific literature. It's not the --
9 it's not the pivotal publication upon which I base my opinion.

10 Q The question is whether you can generalize or extrapolate
11 from the effects of chlordanes and heptachlor on rodents to
12 the effects of chlordanes and heptachlor on humans.

13 MR. BEYER: Objection, Your Honor. There's no
14 testimony that that's what he's doing. As a matter of fact,
15 he denied it.

16 MR. WOOLF: I'm asking him --

17 THE COURT: Well, he's answered the question. He
18 said that's a part of the study on which he bases his
19 conclusion.

20 MR. WOOLF: I understand that, Your Honor. What
21 I'm trying to point out is that it's not responsive to the
22 question. He says part of it. I'm just asking him if he
23 can extrapolate.

24 That is a simple yes or no question.

25 THE COURT: Well, you can say yes or no and answer

1 it more fully.

2 I don't know exactly what he means by extrapolate
3 from one thing to another, but perhaps you do.

4 THE WITNESS: I don't believe I can answer it yes
5 or no. I think it depends on the substance that we're talking
6 about. Generally, it is very difficult to extrapolate from
7 animals to man.

8 BY MR. WOOLF:

9 Q Well, I did limit my question to chlordane and heptachlor,
10 Doctor.

11 A For chlordane and heptachlor?

12 Q Yes.

13 A Basically the reason that animals are used is to
14 determine the mechanism by which the substances produce
15 effects in the biological system. The ultimate evaluation
16 of the effects of these substances on humans is basically and
17 best derived from human experience.

18 Q Let's try it again.

19 Can you extrapolate from the effects of chlordane
20 and heptachlor on rodents to the effects on humans?

21 MR. BEYER: Your Honor, that's been --

22 THE COURT: All right. Let's move -- let's move
23 on. You've asked that question.

24 MR. WOOLF: I respectfully suggest, Your Honor, that --

25 THE COURT: All right.

1 BY MR. WOOLF:

2 Q Heptachlorepoide is a metabolite of heptachlor; isn't
3 that right?

4 A It can be.

5 Q It's one of the metabolites of heptachlor; isn't that
6 correct?

7 A Yes, sir, it can be.

8 Q And it's more toxic than heptachlor itself, isn't it?

9 A No, it's not.

10 Q You know that chlordane and heptachlor bioaccumulate
11 in the fatty tissue?

12 A Heptachlor and chlordane do not bioaccumulate in the
13 fatty tissue.

14 Q They're not lipophilic?

15 A Yes, they are.

16 Q That doesn't mean that they accumulate in the fatty
17 tissue?

18 A It means that at some time they're present in the fatty
19 tissue, but essentially they are transformed by the body and
20 eliminated from the fatty tissue.

21 Q Well, are their metabolites -- do their metabolites
22 bioaccumulate?

23 A No, they do not.

24 Q And if we brought another toxicologist in here to say
25 that they bioaccumulated, he would be wrong, in your opinion;

1 is that correct?

2 A Yes, sir.

3 THE COURT: Well, you know, the doctor said what
4 his belief is and the jury would have to make a determination
5 whether he was right or wrong, if another one was brought in.

6 BY MR. WOOLF:

7 Q Let me read you a list of symptoms of chlordane intoxication
8 and ask if you agree with whether or not those are symptoms
9 of chlordane intoxication.

10 Let me just try and short-circuit this by saying
11 you've already said hyperexcitability is one; isn't that
12 correct?

13 A That is correct.

14 Q And tremors are another, right?

15 A Yes, sir.

16 Q And convulsions?

17 A That is correct.

18 Q How about eventual paralysis?

19 A Is this from inhalation or from the drinking of chlordane?

20 Q Does it matter?

21 A Yes, it does.

22 Q All right. How about the drinking of chlordane?

23 A Paralysis can result from the convulsive episode if
24 one convulses to such an extent that it results in an oxygen
25 deficiency for some prolonged period of time.

1 Q All right. So you get paralysis -- so ultimately you
2 can get paralysis from ingestion -- oral ingestion of
3 chlordanes; is that correct?

4 A No. The paralysis would actually occur as a result of
5 the convulsions.

6 Q All right. You can have chronic intoxication of
7 chlordanes, can't you?

8 A I don't know --

9 THE COURT: What kind of intoxication?

10 MR. WOOLF: Chronic, Your Honor.

11 THE COURT: Chronic intoxication?

12 THE WITNESS: I'm sorry, I don't know what chronic
13 intoxication means.

14 BY MR. WOOLF:

15 Q Well, let me ask you if the following symptoms are
16 symptoms of intoxication from chlordanes: Loss of appetite?

17 A From the drinking or from the inhalation?

18 Q A symptom of intoxication by whatever route.

19 A No, sir.

20 Q Loss of weight?

21 A No.

22 Q Headaches?

23 A No.

24 Q Nausea, I think you already said, is a symptom; isn't
25 that correct?

1 A No, I did not.

2 Q Is it a symptom?

3 A No, it's not.

4 Q And vomiting?

5 A No.

6 Q But you did say that chlordane is an irritant to the
7 skin and eyes; isn't that correct?

8 A It can be.

9 Q And what about the throat and lungs?

10 A It can be.

11 Q Are you aware that all the symptoms that I read to you
12 appear on a Velsicol document as being symptoms of
13 intoxication of chlordane?

14 MR. BEYER: Objection, Your Honor. The document
15 is not identified. He's asking the witness if he's aware of
16 some document that he hasn't shown the witness. Whether it's
17 in evidence or not, we don't know.

18 I object, Your Honor.

19 MR. WOOLF: I'd be pleased --

20 THE COURT: Well, we have some of them in evidence,
21 as I understand it.

22 MR. BEYER: Your Honor, that document is not in
23 evidence.

24 THE COURT: The label?

25 MR. BEYER: That's not the label, Your Honor.

1 THE COURT: Oh, I thought --

2 MR. BEYER: That's a document that is no in
3 evidence.

4 THE COURT: Well, he asked him about -- about the
5 label.

6 If the label's in evidence, show him the label.

7 MR. WOOLF: But, Your Honor, he's correct, it's
8 not the label; it's the document Mr. --

9 THE COURT: Well, you asked him about "label."

10 MR. WOOLF: Excuse me, Your Honor.

11 BY MR. WOOLF:

12 Q You consult for chemical companies, don't you?

13 A I consult for chemical companies as well as others --
14 other agencies.

15 Q All right. You consult for Occidental Oil, right?

16 A That is correct.

17 Q Shell Development Corporation?

18 A That is correct.

19 Q Petrolite Corporation?

20 A That is correct?

21 Q Monsanto Corporation?

22 A Yes, sir.

23 Q Sanitary Corporation of America?

24 A Yes, sir.

25 Q Ethyl Corporation?

1 A Yes, sir.

2 Q Texaco?

3 A Yes.

4 Q Hooker Chemical?

5 A Yes.

6 Q In fact, you're consulting about Hooker Chemical was
7 the health effects of Love Canal; isn't that correct?

8 A That is correct.

9 Q Chemical Manufacturers Association?

10 A That is correct.

11 Q American Petroleum Insitute?

12 A That is correct.

13 Q IBM?

14 A That is correct.

15 Q Exxon?

16 A That is correct.

17 Q Dow Chemical?

18 A Yes.

19 Q And, of course, you consult for Velsicol, right?

20 A That is correct.

21 Q Your publication on the "Comparative Effects of
22 Pesticides" that included chlordane, was that on humans or
23 animals?

24 A That was rodents.

25 MR. WOOLF: Your Honor, I'm going to move to strike

1 the witness' testimony on the grounds that he has been
2 unwilling to state that he can generalize from animal effects
3 of chlordane and heptachlor on animals and that his research
4 has been on animals and he has not identified any research
5 on humans.

6 THE COURT: Motion denied.

7 All right. Any further examination of this --

8 MR. GORRY: What was the --

9 Motion denied?

10 THE COURT: Yes, sir. Any further --

11 MR. BREEDEN: No, sir.

12 THE COURT: May this witness be excused and free
13 to leave the courthouse?

14 MR. BEYER: Yes, Your Honor.

15 THE COURT: All right. Doctor, we've separated
16 the witnesses so one witness won't be influenced by what
17 another one may have seen, heard or said in the courtroom.
18 So don't discuss the case with any potential witness until
19 the case is over.

20 THE WITNESS: Yes, sir.

21 THE COURT: Thank you very much, sir. You're free
22 to leave the courthouse.

23 THE WITNESS: Thank you.

24 (Witness excused.)
25

1 THE COURT: All right. Members of the jury, let's
2 take a five-minute recess.

3 (Thereupon, the jury retired to the jury room at
4 3:35 p.m.)
5

6 PROCEEDINGS OUT OF THE PRESENCE OF THE JURY
7

8 THE COURT: How many witnesses is the defendant
9 Velsicol going to have?

10 MR. BEYER: Well, Your Honor, we find ourselves
11 in kind of an embarrassing position.

12 THE COURT: Not again today, boy. If you are not
13 ready to go forward, your case is over.

14 MR. BEYER: Well, Your Honor, we could be concluded
15 by --

16 Your Honor, we expected a lengthier
17 cross-examination.

18 THE COURT: I can't help that. I've told you all,
19 at the beginning of this case, we're not going to have any
20 delays between witnesses.

21 If you have no evidence to present, you close your
22 case.

23 MR. GORRY: Your Honor, we have two -- specifically,
24 we have two other out-of-town, out-of-state witnesses, and
25 this --

1 THE COURT: If they're not here, your case is over,
2 Mr. Gorry.

3 I've told you all time and again that we're not
4 waiting for witnesses, have your witnesses here.

5 Last night I gave you a break. I'm not going to
6 give you another one.

7 All right. Is that the end of your evidence?

8 MR. GORRY: Well, I'll have to talk with my
9 co-counsel.

10 THE COURT: All right. We'll take a five-minute
11 recess.

12 (The Court recessed at 3:37 p.m. and the Court
13 reconvened at 3:50 p.m., and the following proceedings
14 occurred out of the presence of the jury:)
15

16 MR. GORRY: Your Honor, we do not have any witnesses
17 that we can go forward with at this time.

18 I do want to make for the record, though, this
19 indication of what I believe to be the facts.

20 I respectfully would disagree with the Court that
21 we were given a break yesterday.

22 THE COURT: You certainly were.

23 MR. GORRY: Well, --

24 THE COURT: I quit -- I quit early because you said
25 you didn't have any witnesses.

1 MR. GORRY: Your Honor, on Wednesday, in chambers --
2 and because it probably wasn't taken down -- it was
3 understood -- at least we believed it to have been
4 understood that, in projecting the case, the defendant would
5 start its defense on Friday, and so late yesterday afternoon,
6 as per the prior understanding, we were not ready to start
7 the case; but, as I say, that had -- I think it was
8 Wednesday -- it was either Tuesday -- it was Wednesday --
9 in a chambers conference that that had been discussed.

10 I would just like the record to be clear that the
11 plaintiff has had six days in which to put on its case.

12 By my very quick count, there was some eighteen
13 witnesses.

14 Today is Friday. We did start the case today at
15 nine o'clock a.m. We did put on four out-of-town expert
16 witnesses, three of whom were not only out-of-town but
17 out-of-state.

18 We do have additional expert witnesses from out of
19 state, and we just were not able to have them here today on
20 Friday in what we considered to be prudent scheduling, and
21 that's the situation.

22 THE COURT: Well, you don't set the schedule of
23 the Court, Mr. Gorry. The Court sets the schedule, and I've
24 let you all know that I wasn't going to let this case go as
25 long as you expected it to go, that I had a crowded docket.

1 I've got a lot of other things to do and I just can't waste
2 a day, I've got too much to do, and I thought I let everybody
3 know that this case was going to go just as rapidly as I
4 could push it, and I'm confident I let you all know that and
5 you had absolutely no right to set the schedule of this
6 case or to schedule your witnesses in accordance with your
7 views. You're supposed to schedule it in accordance with
8 my views.

9 MR. GORRY: Well, Your Honor, we just do the best
10 we can and these people do cost money and their schedules are
11 busy as well.

12 THE COURT: Well, I know; but, you know, you all
13 have taken the position that you're willing to proceed with
14 this case at any cost, and that's the cost that you've decided
15 you're going to undertake.

16 All right, Mr. Breeden, will you have any
17 testimony?

18 MR. BREEDEN: I'm in the same position he's in in
19 that regard. I have none here today. I had a couple coming
20 on Monday, but they're also coming from out of town.

21 I've got a motion, if indeed the Court is going
22 to compel them to rest; but other than that, I don't have any
23 other testimony at this time.

24 THE COURT: I'm just outraged about the conduct of counsel
25 sel in this case, when I told you all from the very outset that

1 this case had to move along and that you all have chosen to
2 schedule witnesses in such a way that I'm wasting a good
3 hour and a half of time that could be used that could have
4 gotten rid of another witness.

5 MR. GORRY: Your Honor, we, last evening --

6 THE COURT: I've got stuff waiting for me in there
7 that's up to the ceiling.

8 MR. GORRY: Judge, I understand, but last evening,
9 when the Court set this case at nine o'clock, we did try
10 to call one of our expert witnesses in Athens, Georgia. He
11 couldn't get here today. We had told him Monday before, and
12 that's --

13 THE COURT: You don't have any right to tell any
14 witness to be in this court on any day except the first day
15 of trial. That's when they're supposed to be here. And we
16 get to them just as fast as we can.

17 Mr. Gorry, you practiced in this court long enough
18 to know that we don't sit around and wait for the pleasure of
19 witnesses. We try the cases and we try them as fast as we
20 can because we've got such a backlog of work here.

21 MR. GORRY: Judge, again, with all respect, I just
22 don't feel that I could have had expert witnesses sitting
23 here seven, eight, ten days.

24 THE COURT: Well, you're going to the next time,
25 I'll tell you, because I'm just not going to brook this sort

1 of thing.

2 I'm just as sorry as I can be, but, you know, --

3 MR. GORRY: Well, --

4 THE COURT: -- you've decided, if you're going to
5 defend the case, you defend the case, and you defend it just
6 as fast as the Court can properly move you along with --
7 we've given you a full opportunity to be heard, but I just --
8 we just can't afford to sit around here and waste time; there
9 are too many other people waiting to get the ear of the
10 court.

11 MR. BREEDEN: If Your Honor please, depending on
12 what the Court does with this -- it may be entirely a moot
13 question -- but we do have some medical records, of which we
14 have certified copies, that we wanted to put in evidence here.

15 If the Court is going to preclude any further
16 evidence, the certified copies that we wish to have produced
17 in the record and which we have here are not going to be
18 material because we won't have the witnesses here to discuss
19 those records, but we would like to tender medical records,
20 which we have subpoenaed from the University of Virginia,
21 from Waynesboro Hospital, from the Veterans Hospital,
22 and from MCV.

23 There again, we have custodians we have on subpoena
24 to be here in case the Court will not admit the certified
25 copies that we have, but that is a matter that needs to be

1 addressed.

2 THE COURT: Well, the rule is that medical records
3 don't go to the jury room. They're only here for doctors --

4 MR. BREEDEN: Only for --

5 THE COURT: -- and for the professional people to
6 testify from.

7 MR. BREEDEN: That's right. Well, that's what
8 they're here for. I have them and I would like for
9 Mr. DiMuro to look at them.

10 MR. DiMURO: Maybe I -- I don't want to get in
11 the middle of the Court's discussion with Mr. Gorry, but I
12 understood that the Norfolk neurologist, according to the
13 witness list we got yesterday, was the fifth witness for
14 today.

15 And is he not coming?

16 MR. GORRY: He's not coming.

17 THE COURT: Where is he? Is he out of town?

18 MR. GORRY: No, sir, he's not out of town.

19 THE COURT: Why don't you call him up?

20 MR. GORRY: Because we made a decision that we are
21 not going to offer him as a witness, Your Honor.

22 THE COURT: How many witnesses do you have left?

23 MR. GORRY: We would offer the one foundation
24 witness for that 1980 MMPI that was discussed; we would offer
25 a psychologist, and we would offer a residue testing expert.

1 So there's two experts, plus the foundation witness
2 for that report that was referred to earlier that Mr. Breeden
3 was talking about.

4 MR. BEYER: May we confer for just a moment,
5 Your Honor?

6 THE COURT: All right. Well, in any event, bring
7 the jury in, Marshal. No sense in having them sit back there
8 when we're not going to get to them one way or the other.

9 (Thereupon, the jury returned to the jury box at
10 3:58 p.m.)

11
12 THE COURT: Members of the jury, I regret to tell
13 you that we're not going to be able to get any further today
14 on this case. I hate to lose the remaining hour or hour and
15 a half that would be available today, but we're just not
16 able to get any further today with the case, and so I can
17 excuse you until Monday morning.

18 I am hopeful that we will conclude the evidence no
19 later than Monday, possibly Tuesday, and we hope to get the
20 case in your hands no later than Wednesday.

21 I tell you this as a projection because I know
22 that you have your own plans, but if something goes haywire
23 and I'm not right, don't string me up. Just say that "The
24 old guy did the best he could." That's all I can say to you.

25 And I hope you all have a real pleasant weekend.

1 And remember all my admonitions I gave you before.

2 Yes, sir. Did you have something you want to ask?

3 A JUROR: What time, Your Honor?

4 THE COURT: Well, you know, I'd like to start at
5 nine, if you all can. I think the earlier --

6 Having started you at nine today and then find
7 out that we're not in a position to finish up the day makes
8 it a little difficult for me to impose upon you again.

9 If you're willing to be here at nine, that will
10 be fine, if you are.

11 Okay; all right. We'll see you at nine o'clock,
12 then, Monday, and you all have a nice weekend.

13 (Thereupon, the jury retired from the courtroom
14 at 4:00 p.m.)

15
16 THE COURT: Well, if I hold this record open for
17 you until Monday, will you be able to finish your evidence
18 Monday?

19 MR. GORRY: Yes, sir.

20 THE COURT: All right. Now, Mr. Breeden, that
21 means that you start with your evidence Monday and you have
22 your witnesses here Monday and, if possible, I'm going to
23 try and conclude all of the evidence Monday.

24 MR. BREEDEN: Yes, sir.

25 THE COURT: All right. We'll see you all Monday

1 morning.

2 (The Court adjourned at 4:01 p.m.)

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