MONSANTO COMPANY v. AETNA
CASUALTY & SURETY COMPANY, et al.

Deposition of R. Emmet Kelly

Monday, March 7, 1994

Volume I

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TRANSCRIPT OF PROCEEDINGS

IN THE SUPERIOR COURT

OF THE STATE OF DELAWARE

IN AND FOR NEW CASTLE COUNTY

MONSANTO COMPANY, Plaintiff,	:	Civil Action Number
v.	:	88C-JA-118-1-CV
AETNA CASUALTY & SURETY COMPANY, et al., Defendants.	:	NON-ARBITRATION CASE

DEPOSITION OF R. EMMET KELLY

PROTECTED MATERIAL: MONSANTO INSURANCE COVERAGE LITIGATION

St. Louis, Missouri

Monday, March 7, 1994

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IN THE SUPERIOR COURT

OF THE STATE OF DELAWARE

IN AND FOR NEW CASTLE COUNTY

MONSANTO COMPANY,

Plaintiff,

vs. NO. 88C-JA-118-1-CV

AETNA CASUALTY & SURETY COMPANY,

et al.,

Defendants.

Videotaped deposition of R. EMMET KELLY, taken on behalf of the Defendants, at the offices of Coburn & Croft, One Mercantile Center, Suite 2900, in the City of St. Louis, State of Missouri, on the 7th day of March 1994, before Kristine A. O'Connor, Registered Professional Reporter and Notary Public.

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P R O C E E D I N G S

VIDEO OPERATOR: This is the deposition of R. Emmet Kelly in the matter of Monsanto Company, Plaintiff, versus Aetna Casualty and Surety Company, et al., Defendants. Civil action number 88C-JA-118-1-CV in the Superior Court of the state of Delaware in and for New Castle County.

We are at the offices of Coburn & Croft in St. Louis, Missouri, One Mercantile Center. The time is now approximately 12:25 p.m. Today's date is March 7, 1994. The court reporter today is Kris O'Connor with the court reporting firm of Gore & Perry Reporting in St. Louis, Missouri, 100 North Broadway, Suite 1175, 63102. I am the video operator, Tim Perry, with Gore & Perry Reporting. And you may now swear the deponent.

R. EMMET KELLY,

of lawful age, having been first duly sworn to testify the truth, the whole truth, and nothing but the truth in the case aforesaid, deposes and says in reply to oral interrogatories propounded as follows, to-wit:

EXAMINATION

BY MR. WAITZKIN:

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Q Dr. Kelly, good afternoon.

A Good afternoon, sir.

Q My name is Michael Waitzkin, and I represent certain underwriters at Lloyd's of London. We appreciate you reappearing for your deposition here today. Dr. Kelly, if at any time there's any question that you don't understand or you want me to repeat anything, just let me know. And also as we discussed off the record before we began, we've set the schedule in an effort to accommodate health considerations, and if you wish a break at any time, please let us know.

A Yes, I will. Thank you.

Q Dr. Kelly, the reason that we have scheduled you for another session of deposition is that although you had been previously deposed, at that time you had been designated only as a fact witness. Subsequent to your last deposition session, which was in February of 1993, Monsanto designated you as an expert witness. And it is the purpose of this deposition today to explore the opinions that have been proffered by you as an expert witness and to explore the bases of that opinion.

A Yes, sir.

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Q Now, it was not my intention or I believe the intention of other counsel to repeat extensively what has been gone through before. To some extent we'll be asking you in rather quick fashion to restate some of the facts that you may have testified to before because they frame the basis of your testimony as an expert. But again, it's not our intention here to be unduly repetitive, and I've structured my examination in an effort to avoid that.

A That will be fine.

Q Dr. Kelly, what is your understanding as to when the decision was made to designate you as an expert witness in this case?

A Frankly, I do not know.

Q Are you aware that you have been designated as an expert witness in this case?

A Yes, I am aware.

Q When did you become aware of that?

A A matter of some weeks ago. I don't know how many weeks. Not too many.

Q Would it have been perhaps within the last month or two?

A I would think so, yes, sir.

Q Would it have been sometime during calendar 1994?

A I believe that's correct.

Q So prior to the early days of 1994, you were not aware that you would be serving as an expert witness in this matter?

A I don't know. I do not know whether I was -- knew I was going to serve as a fact witness or an expert witness. I don't recall that I had received a subpoena that designated one thing or another, or in fact, I don't know if I've ever seen the subpoena at all.

Q Let me show you a statement which maybe will clarify your role here.

If we could mark this, and I think by convention perhaps we had used just straight numbers in the first session and V in the second. Perhaps this is because he's in expert session we'll call them E-1 through whatever. Is that acceptable to people? So if we could mark this as Kelly Deposition Exhibit E-1.

(Kelly Deposition Exhibit Number E-1 marked for identification)

BY MR. WAITZKIN:

Q Dr. Kelly, you've been handed by the court

reporter a document that has been identified as Exhibit E-1, which is a four-page document with the title "Rule 26 statement for R. Emmet Kelly, M.D." Would you take a moment and look over that document, sir?

A I have seen this several times.

Q When was the first time that you saw this document?

A I think it was at the time that I thought I was scheduled for a deposition here and nobody showed up except Ms. Walsh, and I saw this at that time.

Q Can you give us an approximate date when that would have been?

A I thought it was in January; is that correct?

MS. WALSH: It was sometime in January.

BY MR. WAITZKIN:

Q January of 1994?

A That's correct.

Q So that would have been the first time you have seen this statement?

A To the best of my recollection, yes, sir.

Q Do you know what this statement is?

A Yes. It's a Rule 26 statement that gives my CV

practically and explains the concerns, facts and opinions about which I'm expected to testify.

Q Did you have any role in drafting this document?

A No, sir, I did not.

Q Did you ever review it before it was filed with the Court?

A No, I did not.

Q So the words that are set forth here are not your words?

A That's correct.

Q They were drafted by someone on your behalf?

A I don't know what you mean on my behalf. I never knew they were going to draft this.

Q Do you know who drafted this?

A No, I do not.

Q Do you know when it was drafted?

A I do not know except it's got a date on it July the 15th, 1993.

Q But you don't know who drafted it?

A No, I do not.

Q Did anyone review these opinions with you? If we look at the pages, they aren't numbered, but if we begin on

the second page and continue to the fourth page, there are some 20 numbered paragraphs which appear under the title "fact and opinions about which Dr. Kelly is expected to testify." Did anyone ever review those 20 paragraphs with you to see if you agreed with them before this document was filed in court?

A No, sir, I do not believe so.

Q So you indicated that the first time you would have seen this document would have been sometime in January of this year; correct?

A That's the first time I have a firm recollection of it. Conceivably I may have seen it sometime before, but I have no recollection of that.

Q And I think you indicated just before that the date which is in the lower left-hand corner of this document is July 15, 1993; correct?

A Yes.

Q What were the circumstances under which you had an opportunity to review this document?

A Well, I was here waiting to give a deposition, and it was a no-show.

Q And what was the reason that you were given this

document?

A Because if I -- I don't know the reason I was given it, but my impression was it was supposed to tell me what I was expected, the matters of which I was expected to testify.

Q Now, the document on its second page indicates the fields in which you would serve as an expert in the top paragraph?

A Yes, sir.

Q And it indicates those fields are internal medicine, occupational medicine and health, industrial medicine, environmental health, toxicology, preventive medicine and industrial health practices in the chemical industry from 1938 to 1974. That's what the document sets forth; correct?

A Yes, sir.

Q Dr. Kelly, do you regard yourself as an expert in all of those fields?

A It depends on what your definition of an expert is. I am not a toxicologist, but I know considerable about toxicology. I've read an awful lot of toxicological reports. I've supervised or directed toxicological

experiments and talked to a number of toxicologists. I've been in meetings where toxicology was discussed, so I would say as far as toxicology is concerned, while not being a toxicologist, I know quite a bit about toxicology.

Preventive medicine, that's a pretty long field. Preventive medicine and I would consider me an expert in environmental health and in occupational medicine. I'm not an expert in preventive malaria or AIDS or something like that or tuberculosis. I think the rest of them I'd consider myself an expert in.

Q Do you regard yourself as an expert in air pollution?

A No, sir. There are many facets to air pollution. You can be an expert in how to prevent air pollution; you can be an expert in what air pollution may do to smokers; you can be an expert in what secondhand smoke does to people. I wouldn't consider myself an expert in that. I would consider myself an expert in the relationship of exposure to industrial chemicals and the people in the environment.

Q Inside an industrial facility?

A And outside.

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Q And outside, all right. Are you an expert at all in the treatment of air pollution or toxics that spread through air pollution?

A You mean the abatement of it? People?

Q The abatement of it?

A No, sir.

Q Are you an expert in the types of equipments that are utilized in the abatement of air pollution?

A Well, I know there are some. There are scrubbers, mist eliminators, there's a brink mist eliminator. There are various forms of counteracting acid rain, SO2 discharges. But I'm certainly not an engineering expert in that.

Q So that the issue of pollution abatement with respect to air pollution is not a field of your expertise?

A The abatement -- no, it is not. Did you say the abatement of --

Q Air pollution?

A Yes.

Q What about water pollution? Are you an expert in the field of water pollution?

A I don't consider myself an expert in water

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pollution.

Q What about the disposal of solid wastes? Is that an area of your expertise?

A There again, you have to define what an expert is. If you're the man that is supposed to tell you how to build a landfill, that's one thing. If you're somebody who is supposed to tell you how to handle your waste disposal as far as the government is concerned, as far as industrial practices in a particular time is concerned, I would consider myself an expert in that.

Q So let's take that apart if we can. In terms of the building of a landfill, that's not an area of your expertise?

A No, sir, it is not.

Q And would that include how to properly utilize the landfill to dispose of wastes?

A Well, there again, you have to really define that question. If you are putting something in a landfill, you'd go to a person who has an approved landfill. Whether it's approved by the state or the government, it depends on the time frame we're talking about. And you contract with him to dispose of it. You don't go out there and watch the

dump truck being unloaded.

Q Are you an expert or have you been at any point in your career an expert in determining what was an adequate and safe landfill dumping site?

A No. I have had in my department people who are in charge of air and water pollution and solid waste disposal. Not in charge, but they monitor it for the management of the company. They reported to me, but I consider them the experts rather than myself.

Q So just you sitting here, Dr. Kelly, as the expert in this case, that was not an area of your expertise; correct?

A That's correct.

Q When you were at Monsanto, you relied upon the expertise of other people; correct?

A That's correct.

Q And I think you testified just a few minutes ago if you were to have utilized a landfill site, the phrase you used, you would rely upon the people who would have constructed that site and whether or not it had been approved by government regulatory authorities to determine whether it was safe and adequate; correct?

A That's correct.

Q It was not within your field of expertise to know from an engineering standpoint whether it was safe and adequate; correct?

A That's correct.

Q And it was not your field of expertise to know from a waste disposal management standpoint whether it was safe and adequate; correct?

A You left out something in that. From my personal --

Q Personal.

A Personally, no, not personally, but I assured myself that it was safe, but I did not investigate it myself.

Q What we're looking at today, Dr. Kelly, since you've been designated as an expert is what your own personal field of expertise is. So that will be the focus of my questions here.

A Yes, sir.

Q Were you an expert or are you now an expert in determining whether that landfill was in compliance with all state, federal and local regulatory requirements?

A My department was but myself was not.

Q That's true today; correct?

A Today as of -- I have no connection with Monsanto today at all.

Q All right. So as you sit here today, that's not an area in which you feel you have an expertise?

A I think that's correct.

Q And back in the 1950s when you were at Monsanto, was that in which you had a field of personal expertise?

A It wasn't '50. I left Monsanto in '74.

Q I know. I'm just taking you back a little bit further. But back in the '50s when you were actively involved in Monsanto, were you an expert in the state, federal and local regulatory requirements with regard to landfill dumping?

A But I wasn't active in 1950. We're confusing the dates. I left in 1974. You're talking about the '50s?

Q All right. Let me restate the question then. During the period when you were employed at Monsanto, was there ever a time when you had an expertise in the state, federal and local regulatory requirements with regard to landfill dumping?

A No, sir, there was not. That was in my department, but I personally did not do it.

Q At any point while you were employed by Monsanto or since that time, have you ever been an expert in what constituted state of the art techniques for disposing of toxic wastes?

A It depends again what you mean by an expert. Did I know what they were? Is that what you mean by an expert? Or did I investigate not what they were but why they were adequate, which is the term you're using?

Q Let's back up for a second. Dr. Kelly, how would you define an expert?

A An expert is an individual who has knowledge about the state of the art about a particular facet of his employment or his profession.

Q And would an expert have to maintain currency in the literature within that field?

A Yes, sir.

Q Would that expert have to engage in an ongoing program of continuing education in that field?

A Yes, sir.

Q Would the expert have to have hands-on experience

in actually doing the kinds of tasks that are involved in that field?

A Not necessarily.

Q Why not?

A Well, there are experts down in Houston in the space program that have never been in a satellite.

Q Okay, fair enough. What kind of actual hands-on experience would someone have to have to in your view be an expert?

A He'd have to know -- I didn't say had to have hands-on. I mean that's your phrase, not mine.

Q Yes.

A I would say the expert had to know what the land -- we're speaking now about a particular time, at any one period in time he'd have to know what was the type of clay in the landfill. He would have to know whether or not a liner was required. He would have to know whether there was in his opinion or whether there was any likelihood of leakage from the landfill. Those are the main things I can think of.

Q Were those things in which you had an expertise when you were employed by Monsanto?

A No, sir.

Q So you would not have regarded yourself as an expert in utilizing landfills or waste disposals?

A No, I would not; correct.

Q Did you keep yourself current on alternative methods of waste disposal besides using landfills?

A Well, I knew in talking to people in my department who did advise about the alternative methods, whether those methods were incineration, whether those methods were flaring, whether those methods were deep well injection. I did know that.

Q But was that an area in which you felt you yourself had a personal expertise?

A Personal what?

Q Expertise?

A No. I didn't know how far deep well had to go. But if my man in charge of water pollution monitoring said we go down 4000 feet, I'd except that as a true fact.

Q Again, Dr. Kelly, for our purposes today what we're looking to is what your personal areas of expertise are, not the people that might have worked for you when you were at Monsanto.

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A Yes, but I've got to define some of those statements of yours. That's a pretty broad statement.

Q I understand.

A So I may not be limiting myself to your definition, but I have to do it for complete truth.

Q Okay. Do you have an expertise in soil conditions?

A In regard to what?

Q Landfill usage?

A No, sir.

Q Do you have any training or expertise in hydrogeology more broadly?

A No, sir.

Q Do you have any training or expertise in geology?

A No, sir.

Q Now, Dr. Kelly, what contact have you had with the waste disposal operations that Monsanto has been -- had ongoing since you left the company in 1974?

A Would you repeat that? I lost my train of thought.

Q Sure. So it's clear for this section of the deposition, what were the years of your employment at

Monsanto?

A I was part-time from 1936 until 1942 and full time from 1946 until 1974.

Q And during that period of time, during the entire period of time, were you familiar with the waste disposal practices of Monsanto's facility at Texas City, Texas?

A Was I familiar?

Q Yes.

A Well, I knew it was there. I did not know the details. I didn't know how much they put in. I didn't know whether there were borings around the site or not, no, sir.

Q At any time were you ever sufficiently involved that you were familiar with those kinds of details about the waste disposal operation in Texas City?

A No, not those details, but I knew that they were approved by the State of Texas.

Q Since 1974 when you left Monsanto, have you maintained any constant contact or have you received any ongoing information about the waste disposal practices in Texas City?

A I received information at these depositions and

prior to the depositions similar to this about what some of the waste disposal situations at Texas City was. I do not know what percentage of theirs go into deep wells or what go into landfills. By the way, was I offered as an expert in pollution and landfills? I don't see that on here.

Q No. That's what I wanted to clarify and that's why I was going to ask you some questions about some of the opinions that have been proffered on your behalf. I first wanted to start out to clarify what you regarded as your own fields of expertise, and then we'll apply those principles to some of the opinions that have been suggested that you might offer. We'll get to that in a later stage of the deposition.

A Okay.

Q What I'm trying to find out at this point, Dr. Kelly, is what kind of information you have received since you left Monsanto 20 years ago about the waste disposal practices in Texas City?

A The only information I received concerning the waste disposal practices at Texas City since my retirement from Monsanto was various amounts of information given in preparation for a deposition such as this. I did not get

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any ongoing information apart from depositions.

Q And when did that process of depositions begin?

A Sometime between five and 10 years ago.

Q So at least from 1974 to 1984 you received no information about what was going on in waste disposal at Texas City?

A I may have but I don't recollect it.

Q And none of the opinions that have been suggested you might express here, obviously, would be based on any information you received between 1974 and 1984?

A If I didn't get any information, I couldn't give an opinion on what that information would be.

Q Fine. Are any of the opinions that have been proffered for you here in this statement based on information you've received during your deposition preparation?

A Any of these 20?

Q Yes.

A I'm going to have to read them.

Q We'll go through them in particular. But is there, in being given this information -- let me back up.

Have you been down to Texas City since 1974?

A I can't be sure. I've been to Beaumont, I've been in Houston, and I do not remember if I went to Texas City.

Q So as you sit here today, you have no recollection of having been in Texas City since you left Monsanto's employment in 1974?

A That's probably correct. I'm not certain, but it certainly does not strike me that I have been there.

Q And again, it may seem like a repetitive question. I take it then, that none of the opinions that you're going to express here would be based on any personal observations you might have made while down in Texas?

A That's correct.

Q Now, were you kept current since 1974 on what kinds of waste materials were being disposed of from the Texas City plant?

A No, sir.

Q Do you have any knowledge of where the disposal was being done?

A Well, it was done at some sites on plant property and some sites off the plant property and some it may have been done in deep wells. I'm not certain.

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Q Do you know, do you have any current knowledge as to -- since 1974 where waste disposal was conducted around Texas City?

A Well, there was a Brio site, B-r-i-o site, that I understood took a great amount of their wastes.

Q How do you know that?

A I think I had a deposition on it.

Q And how did you -- you testified to that fact?

A That what?

Q That there was disposal being done at Brio after 1974?

A Well, I was told at the deposition that there was.

Q During one of your depositions?

A That's correct.

Q So during the course of conduct, somebody asked you to assume for purposes of a question that dumping was done at Brio after 1974?

A I'm not certain of the date. I don't believe that it was because I did not testify to any practices of Monsanto at the Texas City disposal sites after 1974. But I was given to understand that before 1974 they utilized

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the Brio site.

Q Do you have any personal knowledge about dumping at the Brio site before 1974?

A Personally did I follow a truck out to the Brio site or know that Monsanto's discharge was going to the Brio site?

Q Yes.

A Personally I saw?

Q Yes.

A No, I did not see it.

Q Even when you were employed by Monsanto?

A That's correct, I never went to the Brio site.

Q Not at any stage in your career, either during your employment or after, have you ever seen the Brio site?

A No, I have not.

Q Did you ever tour any of the waste disposal sites around the Texas City plant personally?

A I may have seen the one on our property at the South 40 or whatever they called it, but I'm not certain about that.

Q You're certain you've never seen any of the others and you may have seen South 40?

A That's correct.

Q What would your purpose have been in going to South 40?

A Because we had employees who went there, and I was checking to see what the relationship of the employees was to that particular operation.

Q What do you mean by the relationship of the employees?

A Well, what exposure could they -- might they possibly have been getting from this.

Q And what kinds of tests did you conduct to determine what kind of exposure the employees of Monsanto would be getting at South 40?

A I saw the medical reports on the employees themselves. We had a medical monitoring operation for a procedure for our employees, not only in the waste disposal process but for all wage role employees.

Q There were monitoring facilities down at the dump site on Monsanto's property?

A No, they were not. I said this is medical monitoring, which is carried out at our dispensaries.

Q I see. Was there any kind of monitoring, to your

knowledge, that was done at the waste site facility itself on Monsanto's property?

A I do not know of any.

Q Were there any air samples taken?

A There may have been. I do not know of any.

Q But part of your operation in running the medical department was not to take any kind of samples of the environment around the dump site on Monsanto property?

A That's correct.

Q Back to where we were before. How many times, Dr. Kelly, do you think you were at South 40?

A I don't recall.

Q Was it more than once?

A It may have been. I'm not certain.

Q But you're certain that that's the only waste disposal facility you personally went to in Texas City?

A To the best of my recollection.

Q When you were at Monsanto, were you advised of on an ongoing basis as to where waste disposal was being conducted?

A Again, I don't know what you mean by an ongoing basis. Every time they had a truckload of material did

they tell me this was going to South 40 or this was going to Brio or this was going to someplace else? Is that what you mean by ongoing?

Q Well, either on specific shipments or on a monthly basis or a six-month basis or an annual basis were you apprised of what was being dumped, how frequently and where it was being dumped while you were employed at Monsanto?

A Not I, but people in my department may have been but not I.

Q And that was nothing that you would have been familiar with during your employment?

A Except that I might have read the correspondence from either Garrett or Wheeler who were in charge of those operations, monitoring those operations.

Q But this was not something that you were personally responsible for?

A I was ultimately responsible for it, but I personally did not do it.

Q Dr. Kelly, before this deposition, have you previously served as an expert witness?

A Any time in my life?

Q Yes, sir.

A Yes.

Q How many times?

A I don't recall.

Q Can you give us an estimate?

A 10, 15.

Q And of those 10 to 15 times that you've served as an expert witness, how many of those have been on behalf of Monsanto and how many have been on behalf of other parties?

A I would say that probably 80 percent have been on behalf of Monsanto and 20 percent on behalf of other parties.

Q So if the estimate is somewhere between 10 and 15 times in your life and 80 percent was for Monsanto, we're talking about somewhere between two and three times that you would have served as an expert for some entity other than Monsanto?

A I think it's probably more than two or three, but I'm not certain about it.

Q Can you tell us the last time that you served as an expert witness for someone other than Monsanto?

A Yes. It was a case brought by an individual

against, I'm not sure who the defendant was whether it was Illinois Central. It was in Miami and I was an expert for them.

Q And when was that?

A Probably two years ago.

Q And what was the field of expertise on which you testified?

A Relationship of real or alleged problems due to PCB.

Q And that's one instance, and did you actually testify in court?

A No, it was a deposition.

Q Were you ever approved by the court as an expert witness to your knowledge?

A In any case?

Q In the Miami case.

A I don't know if it ever went to court.

Q Have you ever been approved as an expert by the court in any case?

A I really don't know what you mean by approved by the Court. Did they allow me to testify?

Q Have you ever actually gone into the courtroom

and got on the witness stand, been proffered as an expert and accepted by the Court?

A Yes.

Q And on how many occasions?

A Again, probably two or three.

Q Do you know what courts?

A No, I certainly don't.

Q Prior to the Illinois Central case, when was the time before that that you would have testified for someone other than Monsanto?

A I testified for Metropolitan Life in an asbestos case. That was about three years ago. That was not a court case; that was a deposition. And there have been others, but I just do not recall them. I don't keep a running file of these depositions.

Q When you're in this particular case am I correct in understanding that what the opinions -- and we'll go through them particularly, but they relate to the quality and adequacy of the department that you yourself supervised; is that correct?

A I don't know if that says that. I don't know. May I read this then?

Q If you're not sufficiently familiar with all of the opinions, we'll deal with them one at a time. But as I reviewed the proffer, all of the opinions appear to be about the adequacy of the medical department during the time that you were in charge of it?

A Well, some of them do, but not all of them. For example -- yes, they all, it seems that they do relate to the adequacy of the medical department, yes, sir.

Q So you're, in effect, being proffered here as an expert to testify about the quality of the department that you yourself were in charge of?

A That's correct.

Q And the period on which you're asked to testify is only during the period during which you ran the operation; correct?

A That's correct.

Q And you're not going to be testifying about the quality of or adequacy of the program after you left; correct?

A That's correct.

Q Now, Dr. Kelly, what is the financial arrangement with Monsanto for your serving as an expert witness here?

A I sent them a bill and they paid me.

Q At what rate do you charge them for your services?

A It depends. If it's a deposition, if it's an all day deposition it's $2000. If it's a half-day deposition it's $1000. If it's a trial, no matter whether it's half a day or a day, it's $2000 a day. I do not charge for travel time, but obviously I charge for expenses.

Q And what do you charge for work consulting with counsel and other things?

A $200 an hour also.

Q And over the past year, how much time have -- and do you regard this as a consulting service you're doing with Monsanto?

A Again, I don't know what you mean by consulting. I'm not an employee.

Q Right.

A If they call me up and say I want to discuss this with you, obviously that's consulting.

Q I don't attach any particular significance to it. That was how you yourself had described in a previous deposition that you continued to serve as a consultant for

Monsanto at $200 an hour.

A I'll say the same thing, yes, that's it.

Q Fine. Now, over the past in -- just to get a sense of the scale of your consulting operations, during 1993 how many hours did you consult for Monsanto?

A I can't tell you the hours, but I think the total charges were about $19,000.

Q In 1993?

A Yes.

Q And do you know what the charges have been in 1994 to date?

A About $12,000.

Q So far this year?

A Yes, sir.

Q And do you know what the charges were in 1992?

A It was less than in '93. The best of my recollection without looking, I thought it was around 12 to 14,000.

Q Dr. Kelly, do you know since you left Monsanto in 1974 approximately how much you have been paid as a consultant to assist them in various litigation settings?

A No, sir, I do not know that because I know that

at the time of the Agent Orange problems I was quite active with Monsanto in that time, so that would bias what any amount I said I collected. But until the time of the Agent Orange, I think -- which was in late, I guess early '80s, I think. I'm not sure. It was relatively small. It was probably average around $5000 a year.

Q So from 1974 to the early '80s it would be about 5000 a year?

A 1974 to '80?

Q Yes.

A Something like that.

Q And then in 1980 or approximately then when the Agent Orange litigation picked up, your consulting activities became more active?

A Well, it was active very much for that particular time in that particular case because I was almost full-time with them on that. But following the settlement of the Agent Orange litigation, my fees fell off considerably. You can't hold me to the dollars.

Q We're just asking for an estimate here.

A I haven't looked at my income tax in preparation for this.

Q Right. Can you give us an estimate of how much you were paid by Monsanto for your consulting services in the Agent Orange litigation?

A I think it was around $20,000.

Q You said you were full-time virtually?

A Well, pretty much.

Q And your fees were only $20,000?

A Yes. Inflation -- I wasn't charging them enough at that time.

Q Would it be fair to say that since you became active in the Agent Orange litigation in the early 1980s that you've been paid in excess of $100,000 by Monsanto for your consulting?

A Say all this over.

Q Since you became active with the Agent Orange litigation through today, would you estimate that you've been paid more than $100,000 by Monsanto for your consulting services?

A I don't think I have.

Q What would you estimate to be the total fees you've received?

A I'd be guessing. I mean if you want me to guess

I'll say 70,000. I'm pulling this out of the air. I'm not certain.

Q Do you have records that would reflect that?

A I have records, if I were to go over my income tax returns for those years, it would show it.

Q Now, the fees that you're receiving now, the $200 hourly fees and the $2000 a day that you quoted, do you maintain an office or a secretary or do you have any kind of overhead that you have to pay against those fees?

A I have library editions, I have some -- I don't maintain a full-time secretary. I have a secretarial service. I do not use -- I operate out of my apartment because I don't see patients, I don't see lawyers, except occasionally.

Q Do you have apart from the consulting fees that you receive, do you have any other financial arrangement or relationship with Monsanto?

A Well, I own somewhat less than probably 900 shares of Monsanto and I've got dividends on that.

Q 900 shares of stock?

A Yes.

Q And do you receive a pension from Monsanto?

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A Yes, I do.

Q What's the level of that pension?

A I think it's $34,000 a year.

Q Dr. Kelly, what I'd like to do is to shift -- first let me ask, we've been going just about an hour, a little under an hour. Would you like to take a short break or keep going?

A Let's keep going. It's all right with me.

Q We're at your pleasure here. What I'd like to do is I want to go through the opinions that are proffered for you here, but I'd like to first explore some of the underlying facts which would form the bases for these opinions. And given what you've testified to so far about the fact that your information comes from 1974 and earlier, I'm going to assume for the purposes of these questions unless you tell me otherwise that the period that you're talking about is 1974 and back. If for any reason your answer reflects more current information, let me know that, if you will.

A Yes, sir.

Q But I'm assuming for our purposes that you have no information which is more current than 1974; correct?

A Let's see as we go along.

Q All right. Let's go back to the operations of Texas City when you were with Monsanto. What was your title when you were with Monsanto, your last title?

A Director of the central medical department.

Q And where were you physically stationed in that position?

A At the headquarters in St. Louis.

Q How many different facilities did Monsanto operate that you had any responsibility or involvement for at that time in '74?

A Around 50.

Q Were they all in the Continental United States?

A No. There were two -- three in the United Kingdom, one in Germany, one in -- one or two in France, two in Spain -- one in Spain, rather.

Q And all of those facilities fell within your jurisdiction?

A That's correct.

Q Was the Texas City facility within your jurisdiction?

A Yes.

Q Did you have any greater or lesser responsibility for Texas City than you did for the other 50 facilities?

A No, I don't think so.

Q How often did you personally visit Texas City?

A There again, at the time of the Texas City explosion I saw them about 10 times at that time.

Q What year was that?

A Late '40s, I think.

Q Following that explosion in the late '40s through your departure in 1974, how often would you be in Texas City? On an annual basis?

A I'd say twice every three years. Oh, no certainly more -- certainly every year and sometimes twice a year. So it would be three times every two years approximately.

Q And when you went to Texas City, how long would you stay there?

A Three days, two days.

Q So on average you would be spending approximately two days a year on an ongoing basis in Texas City between the '40s and your retirement in 1974?

A That's correct.

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Q When you went to Texas City, what was your purpose in going there?

A To see if the medical department was functioning correctly, if there were any clustering of illnesses of our employees in any particular department, to see if the empathy between the plant management and the doctors, the medical personnel was good.

Q Did you undertake to review any of the waste disposal operations when you would be there on an annual basis?

A No, sir.

Q I think you testified you had never been at any of the waste disposal facilities off of Monsanto's property; correct?

A To the best of my recollection.

Q And you thought you might have had one and maybe two visits to South 40?

A Yes, sir.

Q Do you know where the waste was being disposed of from the Texas City plant? Do you know the names of the locations or how many there were?

A The only one I knew was the Brio site.

Q Do you know the names or locations of any of the other sites?

A I don't know them now. I may have then. I don't know.

Q But you have no present recollection of what the sites were?

A No, I do not.

Q Do you know how many of them there were?

A No, sir.

Q Do you know when Monsanto began, and this is an approximate year, do you know when Monsanto began to dump its toxic wastes at locations outside of its own property?

A No. I'd have to disagree with your statement about dumping them.

Q All right.

A I know when they disposed of them through -- into an approved landfill, but I don't consider that dumping.

Q Okay.

A But I don't know the year.

Q Let's go back. We won't quibble over the words. We'll use ones that are acceptable to you. Do you know what year Monsanto began to dispose of their toxic wastes

at facilities outside their own property in Texas City?

A No, sir, I do not.

Q Do you know how many different facilities outside the Monsanto property were utilized to dispose of toxic wastes?

A No, sir, I do not know.

Q Do you know how many facilities on Monsanto's property were utilized to dispose of toxic wastes?

A I know one and I thought there were two. I'm not certain.

Q Do you know when Monsanto began -- all these questions are Texas City, so I want to assume that purpose. Do you know when Monsanto began to dispose of toxic wastes on its own property?

A No, sir, I do not.

Q Do you know when Monsanto stopped disposing of toxic wastes on its own property?

A No, sir.

Q Do you know why -- do you know whether they'd stopped disposing of toxic wastes on their own property?

A I don't know that either.

Q So I assume that you would not know why they

stopped disposing of toxic wastes on their own property?

A No, sir, I wouldn't.

Q Do you know anything about the relationship between Monsanto and the people that owned or ran the facilities, the off-site facilities at which Monsanto disposed of its toxic wastes?

A I do not know at the present time. I might very well have seen correspondence from the two people in my department who monitored the waste disposal situation for the management. I may have seen that during the time of my engagement with Monsanto.

Q But you have no recollection now of what those relationships were?

A No, I do not.

Q And therefore, obviously those couldn't form the basis of your opinions?

A That's correct.

Q Do you know what the quantities of wastes that were being dumped -- excuse me. Strike that question. I'll restate it.

Do you know what the quantities of wastes were that were being disposed of off site from the Texas City

facility at any year or during any period up through 1974?

A No, sir. I knew there were considerable tonnage, but I do not know the amount.

Q Do we know -- are we talking about hundreds of tons per year or thousands of tons per year?

A Let's stick with pounds. I thought we were -- I thought there were in the certainly hundreds of thousands of pounds and conceivably maybe the millions of pounds. I do not know.

Q On an annual basis?

A I'd be guessing. I don't know.

Q So as far as you're aware, somewhere between several hundred thousand pounds and perhaps in the millions of pounds of wastes were being disposed of off site in Texas City?

A That's correct.

Q But you're not sure --

A What the time frame of that is, no, I don't know.

Q Do you know whether the amount increased or decreased on an annual basis?

A No, sir.

Q Do you know whether more was being dumped --

disposed of off site in 1974 than was being disposed of, say, in 1964?

A I wouldn't know, but I would image it would be more.

Q Do you know -- again, you may not be aware of this. Do you know whether there was any effort to move the waste that had been deposited or disposed of on Monsanto's own property to any sites off Monsanto's property?

A I don't know that.

Q Now, what was the -- of the wastes that were being disposed of, what was the physical state of those wastes? Was this solid, was it liquid? What was it that was being disposed of?

A Which, off site?

Q Off site?

A I think it was a tarry type of compoundable type of compound, more solid than liquid.

Q That was the state it was in when it was disposed of?

A Physical state, yes.

Q Is that the state that it would remain in in perpetuity?

A I can't answer that.

Q All right. Do you know whether the material once it was disposed of in these off-site facilities remained as a tar or took on some other state?

A I don't know and I think that information probably varied with the time. I think people knew more about what happened to the wastes in 1974 than they did in '54, but I myself do not.

Q So from your personal knowledge and expertise, you don't know what became of this material after it left the site and once it was in the landfills. You don't know whether it remained a tar or transformed into another state?

A No, sir.

Q You don't know whether it solidified?

A No, sir, I don't know.

Q You don't know whether it separated?

A I don't know now. I may have known then. I don't know.

Q Do you know how much of it would have evaporated?

A I thought very little. That was the impression I gathered.

Q But you don't know that as a matter of your own expertise?

A No, I did not go out and take a measurement of it.

Q Were you aware of anyone who did go out and take a measure of how much was evaporating and what was evaporating?

A I don't recall any figures, but my impression was there was some measurements.

Q But you don't know what they were?

A No, sir.

Q Do you know what the effect of varying levels of heat was on this tarry substance that was disposed of in these off-site facilities?

A Well, it got hotter obviously.

Q Do you know what the temperature range was in Texas City over the course of the year?

A Well, I've been down there when it was 100. I've been down there when it was 60.

Q So you know from your personal experience it went from at least 60 to 100?

A That's correct.

Q Do you know if the temperatures in Texas City ever exceeded 100 degrees?

A I don't know.

Q Do you know what effect temperatures in excess of 100 degrees would have had on this tarry substance in open pits?

A No. They might have had nothing, they may have had -- I just do not know.

Q You don't know. Do you know if anybody at Monsanto did know?

A I'm sure they did, yes. But the impression was that some of this was covered in a landfill. It wasn't sitting out there in an open pot.

Q But you didn't know?

A No, I didn't go out.

Q Now, let's explore that for just a moment. You've used the word landfill throughout your testimony today and in other depositions. What by your definition, what is a landfill?

A A landfill is a site for disposal of waste chemicals, usually a pit in the ground that in order to be approved, has to be in a site where the clay is of such

character that it is impervious to leakage.

Q To be approved by whom?

A Depends. First it was approved by the state, and then, I believe the EPA has been doing it. If we're talking 1974 it was approved by the state.

Q And you just testified a moment ago that it was your understanding that these materials were covered over?

A Some landfills are. I do not know if the Brio site was covered over. I don't know.

Q In concluding as you do, and we'll get to the specific paragraphs a little bit later, but in concluding as you do that the method of disposal on the off-site facilities at Texas City was safe and adequate, what assumption did you make about whether the landfills would be covered over or not?

A I don't believe I made an assumption as far as that is concerned at all. I made the assumption because they were approved by the state it would be safe.

Q But beyond the fact that you were relying upon the state, you have no personal knowledge or expertise to determine whether they were or weren't safe?

A That's correct.

Q The basis of your conclusion, the sole basis of your conclusion that they were safe is because they'd been approved by the state?

A No, not exactly. I was also given to understand by two people, Garrett or Wheeler that they were safe.

Q All right. So you were relying upon Garrett and Wheeler and the state regulatory authorities?

A That's correct.

Q But you were not in a position to make an assessment from your own expertise whether they were safe or not?

A That's correct.

Q Now, these pits or landfills that were utilized, do you know -- strike that. Let me back up.

You had testified at your earlier deposition that you believe there were thousands of these pits throughout the Texas area?

A Did I say thousands?

Q I believe you did.

A There certainly were hundreds. Not of Monsanto but of our industries there.

Q How did you know how many different locations

toxic wastes were being disposed of in Texas?

A I don't believe I said toxic. I said there were landfills, and I didn't say that the landfills were all toxic. Their toxicity has a great variation. That's because Garrett, who was very familiar with the Texas operations both in Monsanto and other companies in Texas had told me.

Q To your knowledge as of 1974 when you left, how many different pits were being utilized in the Texas City area to dispose of toxic wastes in 1974?

A I don't know.

Q You don't know whether there were any others besides those that Monsanto was utilizing?

A I don't know personally whether there were or not.

Q All right. So as far as you know, the only sites for toxic waste disposal in open landfills in the Texas City area were the ones being utilized by Monsanto?

A That's the only ones I know now. Whether I knew then in 1974 or not is a different question, and I might very well have had the knowledge at that time. But I don't remember it 20 years later.

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Q So as you sit here today, to offer the opinions, you don't know one way or another how many other facilities were being utilized for similar purposes back in 1974?

A I do not know the number, yes.

Q You indicated that you were relying upon the state regulatory authorities for their approval of the landfill sites; correct?

A Yes, sir.

Q Do you know how many technical staff members -- first, what board was it in Texas that approved these sites, do you know?

A I don't know.

Q Whatever regulatory authority it was that was in charge of these, do you know how many staff members they had to supervise all the landfills in Texas in 1974?

A No, sir, I do not.

Q Do you know whether the state authority actually visited each of these landfills before they were approved?

A I do not know.

Q Do you know whether the state authority conducted any tests of the composition of the soil at each of these landfills?

A I do not know.

Q Do you have any idea on what basis the Texas authorities might have been able to conclude that they were made of clay impervious to leakage?

A I do not know the basis for their opinion, no, sir.

Q Were you ever present at any of these landfills before anything was dumped in them?

A No, sir.

Q Do you have any idea whether there was any leakage of water in or out of these pits before wastes were disposed in them?

A I do not know.

Q Do you know how deep these pits were?

A No, sir, I do not.

Q Do you know whether they were above or below the water table in their depth?

A No, sir, I do not personally know whether they were above or below the water table.

Q To your knowledge and within your field of expertise, would it make any difference whether the pits were dug below the water table level?

A I do not ever remember saying that I was an expert in the design of landfill pits, so I have no comment on that statement.

Q So you don't know one way or another whether it makes it more or less safe to utilize a landfill pit that is dug below the water table?

A I think there were more qualifications that would have to be put in there for me to answer yes or no to that statement.

Q Do you know whether the water table was uniform throughout the entire Texas City area or whether it varied from location to location?

A I don't know.

Q Have you ever seen any charts, graphs or representations of what the substrata of the earth was below the Texas City area?

A I may have. I recall some graphs, but they're very hazy in my mind, so I have no definite recollection, no recollection of the details.

Q I think you testified at your last deposition that you had seen one which was a chart that was given to you at your deposition?

A I have --

Q Does that refresh your memory?

A Well, yes, I said I had this vague recollection, but I did not see those in 1974 to the best of my recollection.

Q So to the best of your knowledge the only soil charts or any kind of representation of the substrata that you ever saw was in the course of your depositions in this litigation?

A That may be true and it may not be true. I just do not recall whether it was.

Q There was testimony in your earlier deposition about the so-called Beaumont clay?

A That's correct.

Q Do you know what that is?

A That is a statement given to a particular type of clay that was used for landfills in the neighborhood adjacent to the Texas City plant.

Q When was the first time you ever heard the expression "Beaumont clay"?

A I don't recall.

Q Was it during this litigation?

A I can't answer that. I certainly heard it during the litigation, but I'm sure that Jack Garrett has probably -- who has talked to me quite a lot. If you've deposed him, you'd know that he talks quite a bit, and I'm sure he may have brought that phrase to me during my course at Monsanto, but I have no definite recollection of it.

Q So as you sit here today, you have no specific recollection of having had any discussions about the Beaumont clay and what significance it had for the integrity of the disposal sites around the Texas City plant while you were employed at Monsanto?

A I have no recollection, but that certainly does not mean that I may not have had it.

Q All right. But as you sit here today, you have no memory of that?

A I have no definite recollection of it.

Q Now, do you know whether -- what the weather conditions were surrounding these pits in the area of Texas City?

A Sometimes the sun shown and sometimes it rained.

Q Fair enough. It was a badly put question. Do you know whether this was an area that was prone to

flooding?

A I don't know whether it was or not. I thought I'd heard something about it, but I don't know.

Q Do you recall testifying that you had been to Texas City shortly after a hurricane and the entire area around the plant was flooded?

A Yes. Did I say -- I know the plant was flooded. I don't know if I said the entire area around the plant.

Q Is Texas City a fairly flat low-lying area?

A Yes, it is.

Q Do you have any reason to believe that if the plant was flooded that the waste disposal sites were also flooded?

A Well, I've never been to the waste disposal sites so I can't tell.

Q Do you know whether the waste disposal sites ever flooded during hurricanes?

A I don't know.

Q Do you know whether around the pits where the waste disposal was done off site from Monsanto, whether any kind of impoundment dikes or anything to prevent flooding?

A No, sir, I do not know that.

Q What would happen if this tarry substance were covered with water and then the water receded? What would happen, do you know?

A It all depends on a lot of factors that you haven't put into your question. It depends on the force of the water, it depends on how much water came in, what the current was, what the wind was. So I would just have to assume, and I'm not going to speculate, and I can't speculate on it.

Q Do you know or do you know whether anybody at Monsanto knew what would happen if these waste disposal sites were flooded?

A I don't know. I cannot answer that. Do I know personally? But I would imagine the people in Monsanto who were in charge at the plant who were in charge of waste disposal would know what would happen, yes.

Q But you don't know?

A I don't know.

Q Do you remember an incident back in 1967 where all of the areas around the Texas City plant were flooded and the ditches all around the MOTCO facilities and the others were covered with black tar?

A Ditches where?

Q All around the waste disposal sites that it had flooded and the black tar had spread all over the disposal area, were you familiar with that incident?

A No, sir, I'm not.

Q That's nothing you ever explored as medical director at Monsanto?

A To the best of my recollection, no.

Q Do you know what the wind conditions around that area are?

A No, I don't. You mean sometimes the wind blows stronger than other times, but I don't know.

Q Do you know in what direction it blows?

A I don't know whether it's offshore or on shore, I don't know.

Q Do you know whether it blows across the waste facilities towards inhabited areas or schools?

A Are we talking about '74?

Q Yes.

A I don't believe there were schools around the waste disposal areas at that particular time.

Q Do you know whether there were any facilities or

any kinds of housing or work areas proximate to the waste disposal sites?

A In '74?

Q Yes.

A I do not know. But I did not know that there was a development in '74 as there was in later dates, but I don't know.

Q But you don't know what effect the wind blowing across these pits would have in distributing any evaporation there might be from the pits or any fumes that were coming up from the pits?

A No. In the first place I do not know if there were fumes coming off the pit at the tars. If they were in the surface, they do not evaporate to any significant degree.

Q But no tests were ever conducted to determine how much did evaporate or what fumes were given off?

A No.

Q Do you know whether it's a very dusty area around Texas City in certain seasons?

A I can't comment on that.

Q Is it a fact that -- do you know whether dust

that's moving across facilities like this has a capacity to pick up toxic substances and distribute it off site?

A In the first place, you'll have to tell me what are the toxic substances.

Q The toxic substances that were being produced by the Texas City plant and dumped -- and disposed of in these waste disposal sites?

A And in sort of a semisolid or tarry state.

Q Maybe, maybe not. You weren't certain.

A Well, if they were tarry state or in a semitarry state, I do not believe the dust would pick them up. I do not know what the affinity of the dust would be to any liquid that might be on the top of the water, but it doesn't seem like a significant amount to me. Although I never observed a dust site over the landfills because I really never saw the landfills at any time much less when there was a dust storm.

Q Is this anything you ever studied or evaluated or had reviewed to determine the safety of the waste disposal sites around the Texas City plant?

A Did I?

Q Yes.

A No, not I.

Q Do you know if anyone else did?

A They may have. I do not know.

Q Now, the location of these pits. First, do you know how many separate pits were utilized to dispose of these wastes?

A No, sir. I answered that where, I just do not know.

Q I was asking you a slightly different question. I was initially asking you how many different general sites or locations there were. What I'm interested more in now is how many separate pits there were. Whether there was one pit for a location or whether there were hundreds of different pits that were utilized to dispose of the Monsanto wastes?

A I do not know.

Q So in determining whether the pits that were utilized to dispose of Monsanto's wastes are safe or not, you don't know whether we're talking about five pits or 200 pits?

A No, but I feel quite sure it was closer to five than it was to 200.

Q Do you know how many there were?

A No, I don't.

Q Do you know how large each of these pits were?

A Some were quite large. I don't know the exact acreage, but they were good sized pits, I've been told.

Q When you say acreage, were some of these pits multiple acres in surface area?

A No, that's 43,000 square feet in an acre roughly. That would be 400 by 100 feet -- no, I don't know how big. But I thought -- they weren't small pits. If by small you mean 50 or 100 square feet, but I thought they were several thousand square feet. Whether they were as large as an acre, I don't know.

Q In total, do you know what the total acreage of the surface areas of the disposal pits were that were being utilized by Monsanto to dispose of their wastes in Texas City?

A No, sir.

Q Do you know what the depth of the pits was on average?

A My impression was they were 6 to 8 feet. But I've not personally measured them. I don't know.

Q Do you know how far the pits were from the bay?

A From the where?

Q From the bay?

A From the what?

Q From the water?

A Oh, the gulf?

Q Yes, the gulf.

A No, sir.

Q Would it make any difference in terms of the safety of the pits how close the pits were to the gulf?

A That again would depend on the character of the pit. Whether there was a seawall or anything else, I don't know. But I cannot comment on the safety of it.

Q Was the drainage around the disposal site something that you ever considered in determining whether they were a safe place to dispose of toxic waste?

A No, sir.

Q Dr. Kelly, once this material was placed in the pits, what was your understanding about what was to be done with it?

A Well, when the pit got filled, it was supposed to be covered over with dirt and then stayed there.

Q Was it your understanding in order to be safe once it was filled it should be covered with dirt?

A It was my impression that once the pit was not being used any more, it would have been covered. I have no definite recollection of whether these pits were to be covered or not, so I could be in error in that. But I thought my impression with the landfill was that after a certain amount of waste was put in, dirt was put over it.

Q And would that make it safe if dirt was put over it?

A In the first place, I'm not sure whether it was unsafe if it weren't covered over. It would certainly make it more beautiful to the neighborhood certainly.

Q And you don't know one way or another whether they were covered?

A I don't know.

Q Do you know once the material was placed in these pits whether it was -- how long it was intended to stay there?

A No, sir, I do not know how long it was intended to stay there. I don't know if they thought they were going to remove it after X number of years or if they

thought -- I don't know the answer to that.

Q So from your -- as far as you knew once it was dumped in those pits, it was to stay there forever?

A Well, I don't know if I could say that or not. I don't know what somebody might have had a different idea for that particular area. I don't know what they would do with the material once they started taking it out. But I don't know if it was written in stone that once it went in there it stayed in there for eternity.

Q But as far as you knew in evaluating whether this was an effective and safe way to dispose of the materials, you were assuming that it was not going to be moved to another location at any particular point; is that correct?

A No, sir, I can't say that I did assume that or didn't assume it. But if it appeared it was going to be moved, then I think we would have to look at the whole situation as far as to what particular problems might result in taking the stuff up and moving it and what the other location would have to offer.

Q Did you ever consider when you were at Monsanto what problems would be incurred in attempting to remove this material from those pits and shipping it to another

location?

A I do not recall this question of removing the material from the pits was ever brought to my attention.

Q What was your understanding about what the workers at the pit sites were doing with this material? There was some testimony earlier on, just to focus you on my point, that you believe that some of this material was going to be recycled and others of it was just to be disposed of. What did you mean when you said you thought some of it was going to be recycled?

A By that I meant it would be recycled before it got off -- before it got to the disposal site. In other words, it would be recycled at the plant.

Q At the Monsanto plant?

A Oh, no. Some of the material would be recycled before it was gone into the waste stream. Some of the material was sold to be recycled or given away to be recycled. I don't know what the details were, but I do not know. I don't think I ever testified that I believe that people dug some of the stuff out to recycle it.

Q But just to clarify. Your understanding, let me see if I've got it straight, is that after it left the

Monsanto facility that some of it was going to be placed in pits to stay there for an indefinite period of time and some of it was being sent to some facility not owned by Monsanto to be recycled in some fashion?

A Yes.

Q Was that your understanding?

A It's my understanding that it was going to the recycling place rather than to the pit.

Q But a recycling place not owned by Monsanto?

A That's correct.

Q From an industrial hygiene standpoint and an occupational medicine standpoint, were different risks posed to the workers at the receiving end if the material was going to a recycling plant as opposed to in a pit?

A I'd have to know what the details of a recycling plant were and I do not know. That's a question that I can't answer because I do not know how they were transporting to the recycling plant. Whether to closed systems or what they were doing to it. I just can't answer that.

Q Were the risks to the workers at the recycling facilities anything that Monsanto considered in determining

how to dispose of its wastes?

A Well, we told the recyclist, if that's the term, what we believe the -- what we knew the acute toxicity of the material was, and we did not know -- the medical department did not know the method, as I said of what his workers were doing. So we didn't advise him about what precautions he had to use. We told him what we knew about the material and that was it.

Q One last question and then we'll take a break, I think. You indicated, Dr. Kelly, on the assumption that this material was going to stay in these pits for an indefinite period of time, whether covered or not, could that land ever be used for another purpose?

A I haven't the slightest idea.

Q As far as you know, once all that material was disposed of in those pits, that land had no other useful purpose?

A No, I don't know whether it does or not. I just said I'm completely ignorant of whether it could or could not be used for another purpose.

MR. WAITZKIN: Why don't we take a few minutes.

(Recess)

BY MR. WAITZKIN:

Q We're resuming after a break. Dr. Kelly, again, if you need a break at any time, let us know.

A Yes, thank you.

Q We'll try and go slightly shorter in the next session than we did in the last. Dr. Kelly, just a couple more questions, if I might, about your knowledge of the way these pits are constructed. Do you have any familiarity with the process of lining these pits?

A No, sir.

Q Do you know what the purpose of lining pits is?

A Yes. If there is a pit that is permeable to the material inside it, they put a lining in, which is impervious to the leakage.

Q Do you know whether any of the pits in the area of Texas City were constructed in that manner, that is to say that after they were dug a lining was added?

A I do not know. It was my impression that the Beaumont clay did not need a lining, that that was a state of the art when they talked to me about it.

Q Are you familiar with the Monsanto disposal site at Chocolate Bayou?

A No, sir.

Q Do you know whether that was a site that was owned by Monsanto or owned by a third party?

A I don't know anything about it.

Q So you would not know whether the pits that were constructed there were built with liners or not?

A No, sir, I do not know.

Q Dr. Kelly, what I'd like to do is I'd like to shift, if I might, from the disposal sites to the components of the waste streams from the Monsanto Texas City facility. First, what was your understanding of what was being manufactured at the Texas City facility while you were employed at Monsanto?

A They were manufacturing styrene, they manufactured HCN, they manufactured ethylbenzene. I do not know if they sold it or used it in manufacturing styrene. They had an oxygen plant that manufactured -- I don't recall now what else they manufactured.

Q You had testified extensively about the various waste products that were created in the course in the manufacture at the facility. I don't want to go back through that testimony. I would just like to go through,

if I might, a list of what I understand to have been contained within the waste stream from the Texas City plant. And if you could confirm what your understanding was about whether those materials were in the waste stream, we can move through it very quickly. To your knowledge was there hydrogen cyanide contained within the waste stream?

A There was a certain amount. I do not know the concentration. I thought it was in a low percentage, fraction of a percentage.

Q Over what fraction of a percentage of the total amount of waste?

A Oh, yes.

Q Do you know what fraction of a percentage it was of the entire waste stream?

A No, but I thought it was quite small.

Q What is hydrogen cyanide?

A Hydrogen cyanide is a poisonous gas consisting of a hydrogen and a cyanide molecule.

Q And hydrogen cyanide is a component in concentrated form, which is used in gas chambers for execution purposes?

A Yes.

Q Over what period of time was hydrogen cyanide contained in the waste stream? Was it during the entire period that you were associated with Monsanto?

A I'm not certain. I do not know that.

Q Was there hydrogen cyanide in the waste stream in 1974 when you left Monsanto?

A I can't answer that. I don't know. We burned some of the hydrogen cyanide. We flared it and burned it. Whether it went into the waste stream or not, I don't know.

Q So you don't know whether there was or there wasn't in 1974?

A I don't know.

Q What about in the '60s?

A I do not know at the present time when hydrogen cyanide was in a waste stream that went to a disposal facility.

Q But you know at some point there was hydrogen cyanide in the waste stream that went to the disposal facility?

A That is my impression. It's not my personal knowledge.

Q And you don't know in what quantities the

hydrogen cyanide was disposed of?

A No, sir.

Q You don't know whether it was measured in pounds or hundreds of pounds or tons over the course of the entire disposal operation?

A You mean from the time it was manufactured from 1946 when I started until '74?

Q Yes, sir.

A No, sir, I don't know the total amount.

Q So you don't know whether within the disposal facilities that Monsanto utilizes there are tons of hydrogen cyanide contained in the waste?

A No, sir, I do not know.

Q What other -- to your knowledge what other --

A Hydrogen cyanide is a gas and it volatilizes obviously. So whether there is any contained in the waste, I don't know.

Q And if it's contained in combined form with some other element, would it still remain toxic?

A It would only remain toxic if there were an acid situation where the hydrogen cyanide could be released from whatever form. Remember when this is used in the gas

chamber, sodium cyanide is dropped into an acid beaker and the hydrogen cyanide is then released. So whether or not, what hydrogen cyanide there was, if any, in the landfill and what combination that particular gas could have made with the chemicals in there, I do not know.

Q But if it were contained in the waste stream and there was acid present in -- from some other waste deposit, that could free the hydrogen cyanide from the compound that it was in; is that correct?

A It all depends on the compound. I don't know.

Q But that's a possibility?

A Oh, it's a possibility, yes, but I can't say yes or no.

Q Now, what other materials besides hydrogen cyanide were contained in the waste stream?

A There were styrene tars, there were --

Q Let me just take those one at a time. Is styrene tar a toxic?

A It's an industrial chemical of moderate toxicity. We ran some toxicity tests on it.

Q And what's in styrene tar?

A I don't know.

Q Does it contain hydrocarbons of various kinds?

A Oh, sure.

Q And have certain hydrocarbons been found to be carcinogenic?

A Well, yes, but there's a big hydrogen -- I mean hydrocarbons, there's an enormous amount of hydrocarbons and various types. And just because a compound is a hydrocarbon doesn't mean it's going to be carcinogenic.

Q Are there carcinogenic hydrocarbons within the styrene tar that was put in the waste stream for the Monsanto plant?

A I know of no evidence that shows that that is true. I also know of no carcinogenic studies on it.

Q So you don't know one way or another whether there were any carcinogenic hydrocarbons in the styrene tar that was deposited?

A No, sir, I do not know that.

Q And you did not conduct any studies to determine whether there were?

A No, sir.

Q Before this material was disposed of off site?

A No, sir.

Q Was there any benzene within the waste stream?

A A certain amount of benzene. I don't know the percentage of that also.

Q Is benzene known to cause leukemia and other illnesses?

A It causes aplastic anemia, it causes one type of leukemia.

Q Was benzene used in large quantity in the Monsanto Texas City facility?

A Yes, very large.

Q Would there have been benzene in the waste stream?

A Well, they tried to get as much out as possible because it's a pretty valuable product.

Q But there would have been some --

A There may have been some. I don't know.

Q Do you know what percentage of the waste stream would have consisted of benzene?

A No, sir.

Q Do you know how many pounds or tons of benzene would be contained in the deposit of waste from the Texas City plant sitting around the Texas City facility

now?

A No, sir.

Q What is tertiary butylamine?

A Well, it's a compound that has an NH2 radical on it. That's a compound that I believe is used as a catalyst in certain amounts -- in small amounts in some of the processes at Texas City.

Q And that's, I think you described in a previous deposition is a severely toxic agent if ingested and an extremely toxic agent if inhaled; correct?

A Did I say severely?

Q Yes, you did. I can show you your testimony.

A No, I'll take your word for it. If I said it, then I'll say it now.

Q That's known as TBA; correct?

A Yes, sir.

Q Was there TBA in the waste stream from the Monsanto facility?

A Yes, sir. What form it was, I do not know.

Q Do you know in what quantity it was deposited?

A No, sir.

Q Do you know how many tons or pounds or thousands

of pounds of TBA there are in the waste sites surrounding the Texas City plant?

A No, sir.

Q Was there mercury in the waste stream from the Texas City plant?

A I don't know, and I don't know at the present time in what process they used the mercury.

Q If it will refresh your memory, I believe you testified in your previous deposition that mercury was used in the vinyl chloride process?

A Oh, yes.

Q And was disposed of in the pits surrounding Texas City?

A Yes; that's correct.

Q Does that refresh your memory?

A Yes; that's correct.

Q So there would have been mercury in the waste stream from Texas City; correct?

A Yes, sir.

Q And what kind of health problems does mercury cause?

A It depends how much you take and how you take it

and whether the mercury is absorbed or not. There's a very -- a great variance in toxicity of mercury by mercury chlorine, which is one mercury atom and two chlorine atoms, is a very toxic compound. Calomel, which is --

Q Do you know how much of the --

A May I finish?

Q I'm sorry, excuse me.

A Calomel, one mercury atom and one chlorine atom has been taken for hundreds of years as toxic by an enormous amount of people in the United States and so the mercury varies the toxicity a great deal.

Q Did you undertake measurements to see what chemical form the mercury that was being deposited in the waste stream was in?

A No, sir, I did not.

Q So you don't know as the material was leaving the plant and being disposed of in these pits whether it was in toxic form or not?

A I don't know, but we had tested the material that did leave our plant and it came out as a moderate toxicity, if one were to consider industrial chemicals.

Q What does it mean that something is moderately

toxic?

A It depends on who's making the definition. But usually an acute LD-50 of around two to four grams per kilogram of the test animal would be considered moderately toxic.

Q And what kind of illnesses in a comparable quantity by weight would those cause in humans, something that's moderately toxic?

A It could be anything, depending on the compound and I really can't tell you which -- whether it would affect the liver, whether it would affect the kidneys. Mercury usually affects the kidneys. Some compounds affect the liver. Some affect the intestinal tract.

Q Would it be fair to say in lay terms, Dr. Kelly, that something that is moderately -- exposure to something that is moderately toxic is hazardous to human health?

A It depends on the exposure. It depends on how much -- what the possibilities are of it getting into your system. I mean toxicity varies between -- depends on the inherent toxicity of the product and the exposure. And there are compounds that are in coffee, there are compounds in some vegetables, there are compounds in peanut butter

inherently toxic, but they're in small doses. I forgot to mention the amount. Small doses and cause no ill effects.

Q Is it fair to say from an industrial health and hygiene standpoint that moderately toxic or other toxic agents should be handled in such a manner as to prevent human exposure to them?

A No, sir. To prevent, I think the term is minimize --

Q All right.

A -- exposure. I think that any industrial chemical has some toxic properties. Household products have toxic properties. Detergents have toxic properties. Salt has toxic properties.

Q Would it be fair in order to determine how to control human exposure, it would be necessary to know what quantities of various toxic substances are potentially available for human exposure?

A No, not necessarily because if the person isn't exposed to something, there could be tons of a material there. And if there's no exposure, there's no risk.

Q So it would be a factor of amount of exposure and quantity of the toxic agent; correct?

A And the inherent toxicity or lack of toxicity of the product.

Q So those would be the three elements that you would have to be aware of in order to determine the likelihood of harm to humans; correct?

A That's correct.

Q The toxicity of the particular agent, the quantity of the agent and the type of exposure?

A The quantity of the agent that the individual absorbs, not the quantity of the agent lying around in any particular spot.

Q Now, let's see if we went through the list. You'd indicated that within the toxic waste stream there were some quantities of hydrogen cyanide. Was there acrylonitrile tar in the waste stream?

A Yes, sir.

Q And is that a moderately toxic agent?

A Yes, sir.

Q Was there acetylene soot in the waste stream?

A Yes, sir.

Q I think you already testified that there was acrylonitrile in the waste stream; correct?

A I don't know how much, what percentage of acrylonitrile might still be there. I just don't know.

Q Was there styrene monomer in the waste stream?

A I don't know if it existed as the monomer. It may well have been in there.

Q Is styrene a toxic agent?

A Not particularly. I mean toxic is almost a blanket term.

Q Did you undertake any efforts as head of the medical department at Monsanto during your tenure there to determine what toxic agents were within the waste stream when it left the facility?

A Would you repeat that.

Q Did you undertake any efforts as head of the medical department at Monsanto to determine what toxic agents were in the waste stream when they left Monsanto for disposal?

A Did I personally or did I ask Jack Garrett or Wheeler what is in this waste stream, what goes --

Q Did anyone at Monsanto, either you directly or under your supervision on an ongoing basis measure what toxic elements were in the waste stream leaving the plant?

A If you mean by ongoing, you mean routinely, repeatedly?

Q Yes.

A No, I do not believe so. We did run some toxicity studies on the waste stream at various times, but not every month or anything like that.

Q Was there any way that anyone at Monsanto knew what the quantities of toxic agents were that were being deposited at these facilities outside of Monsanto?

A They may well have known this in the manufacturing department. I do not know.

Q But as far as you knew from an industrial health and safety standpoint, you didn't know?

A I didn't know.

Q So just to, I think you testified to this before, there was no way for you to know from an industrial health and safety standpoint how much hydrogen cyanide, how much mercury, how much TBA, how much benzene and how much of these other toxic agents were being deposited in these pits around the Texas City plant?

A You've got to start over on this one. Repeat the question.

Q I'll state it again for you. There was no way for you to know and you did not know as the head of the medical department at Monsanto up through 1974 how much hydrogen cyanide, benzene, mercury, TBA was being deposited in the pits surrounding the Texas City plant?

A I do not know whether or not people in our department were aware of those figures. And I might very well have known that in 1974, but I do not recall now what those figures might have been.

Q So you have no knowledge as you sit here today how many tons or thousands of pounds of these toxic agents are laying in those pits in the facility surrounding Texas City?

A In the first place I'm not certain that they're toxic.

Q You don't know one way or another?

A Well, I do know that the amount of acute testing we carried out on those products did not show them to be particularly toxic.

Q You just used the word acute testing. What does acute mean?

A Happens all at once.

Q How much chronic testing did Monsanto do on these various toxic agents to determine what their toxicity was over the long term?

A They did not do any.

Q So from your standpoint as the head of industrial hygiene for Monsanto, you did not know what the chronic toxicity of those various elements was after they left Monsanto?

A I did not know that from the animal point of view. I did know that from the clinical observation of the individuals at Monsanto who were working with those waste products during the final stages of the process prior to delivering them to whoever took them off the site. I did know that and I did know that what exposure they had did not constitute any hazard, so I made a clinical judgment that there was going to be no exposure from people at the landfill.

Q But you didn't know what the people at the landfill were going to be doing with this material, did you?

A I was pretty sure they were not going to be swimming in it. I don't want to be flip, but the people in

the landfill were not processing the material. It was put there.

Q Well, you testified earlier that some of this material was going to be recycled and was going to be processed in some fashion that you didn't -- you weren't sure what the procedure was?

A Yes, but I testified I did not know whether the material was taken out of the landfill and recycled or whether it was sent from Monsanto to the recycling plant and never went into the landfill. I'd said that the waste materials went two ways. One ended up at the recycling, but I don't know whether that went through a landfill, Monsanto landfill recycling or just Monsanto recycle. The other was Monsanto landfill. So I never said that I knew that the recycler dug stuff out of the landfill to recycle.

Q Let's back up if we can, Dr. Kelly. What studies did you conduct or did anyone conduct in Monsanto to determine what the chronic effect on the environment would be of the disposal, the long-term disposal of these toxic agents in an open landfill?

A I don't know what studies Monsanto did. I know that from the medical point of view, the medical department

we did not do any studies on the environment or the people living around the landfill. As I understood at that particular time, there weren't people living around the landfills.

Q Let me put the same question to you in a slightly different fashion. When you were the head of the medical department at Monsanto through 1974, what scientific information did you have to rely upon that would tell you that there would be no adverse chronic effect on the environment from the depositing of these toxic wastes in open landfills?

A Well, the scientific -- I don't know your term scientific. I was told by the individuals who were responsible for putting the material in the landfills and also told by the medical department personnel who reported to me that monitored the waste disposal procedures of the Texas City plant that there was no chronic hazard because of the lack of any significant exposure from the landfill.

Q What scientific studies were they relying upon? I think you already testified there were no studies done by Monsanto and you weren't aware of any studies on the chronic environmental effects of this kind of dumping.

What scientific studies were you relying upon if there weren't any?

A I didn't say there were scientific studies.

Q Okay.

A I said I was relying on the opinion of the individuals who were knowledgeable about landfills, who were knowledgeable about the waste disposal products and who knew the acute toxicity studies that we carried out on the material.

Q And I'm asking you, they had the acute toxicity studies, but what chronic toxicity studies did they have?

A We did not do any.

Q And is it fair to say that having something sitting in a site for 50 years presents a chronic problem as opposed to an acute problem?

A No, it isn't fair to say because in the first place, there is no evidence that I knew of that a chronic problem, that a chronic exposure had occurred.

Q Let's take this in smaller pieces. Did you know what was going to happen to these materials from an environmental standpoint if they sat in open pits for 50 years?

A No, sir, I did not.

Q You didn't know how much of it would fume up and be blown off in one direction or another, did you?

A No, I did not, but I had --

Q You did not --

A May I finish?

Q Sure.

A I did not, but I had information given to me by the chemists at both the Texas City site and from Garrett and Wheeler that they did not expect any significant evaporation of the material or any blow off of the material. Now the question of hurricanes did not come up or earthquakes did not come up.

Q There weren't any earthquakes around Texas City, were there?

A Beg your pardon?

Q There weren't any earthquakes around Texas City, were there?

A Not that I know of.

Q There were, however, frequent hurricanes?

A Well, there were hurricanes, I know of two or three.

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Q And that presented a flooding problem; correct?

A As I said, I have never been to the off-site places, and I do not know anything about the flooding.

Q Let me repeat. I don't think I've gotten an answer yet, Dr. Kelly. What scientific or medical information did you have about the chronic effects of the chemicals that were being deposited in the land sites?

A I had no scientific animal experimentation on the chronic effects of the material in the landfill. I had the monitoring of the Monsanto employees who were exposed to the material at the end stage of the processing. I had knowledge about the lack of any reports from anybody about environmental problems with any of the neighbors or any of the workers at the other site during the 38 years that I was with Monsanto.

Q Did Monsanto ever test any products for chronic toxicity?

A Yes.

Q So you had the capacity to do that?

A Yes.

Q And you did that when you wanted to sell an agricultural product or a food additive or a packaging

material; correct?

A Yes, sir.

Q But you did not undertake any chronic testing of the materials you were depositing in the land site?

A We did not because we did not expect the individuals -- the individual who would be exposed to the chronic effects similar to the chronic effects of an agricultural product of a food product or a packaging product.

Q So that was all based on an assumption that the materials would not spread beyond the pits once they were placed there; correct?

A In significant amounts. There may be traces, there may be parts per trillion, parts per billion but the assumption was there was not a significant exposure.

Q And that assumption that it couldn't spread beyond the pits was based on an expertise other than your own personal expertise; correct?

A That's correct.

Q But from a medical and industrial hygiene standpoint, you had no information on which to conclude that if there was chronic exposure, there would be no

health hazard to the people exposed; correct?

A If there were no chronic --

Q If there was chronic exposure, you had no information from a medical and industrial hygiene standpoint to conclude whether or not there would be health hazards to the people exposed?

A Well, first of all there is certain negative information that's available that would be available. There are always case histories or clustering of cases around areas where there's an alleged or real environmental problem. There were none of those reported to me or that I read about up to the time of 1974, if we're limiting ourselves to that time. What was the rest of your question? I want to be sure I answered it.

Q The question was whether you had -- apart from what you just testified, the negative information, whether you had any affirmative information on which you could conclude whether there would or would not be any adverse effects from chronic exposure materials that were being --

A There was also the experience of a myriad of chemical companies that put materials into this same type of landfill in Texas that were of the same type of

toxicity. They came from oil refineries, they came from chemical plants similar to our own, and that was the state of the art at that particular time. And the state of Texas did not raise any questions about the toxicity of this material as far as exposure to the people in the environment were concerned.

Q I think you testified, correct me if I'm wrong, Dr. Kelly, earlier this afternoon that as of 1974 you weren't sure and had no knowledge as to whether there were any other open pits that were being used for the disposal of toxic chemicals in Texas?

A I don't think that's correct. You might have asked me do I personally know it?

Q Yes.

A I was told. I did not go out and eyeball these.

Q I thought I put to you the question of apart from the facilities at which Monsanto was dumping, how many other pits, to your knowledge, were being utilized in Texas for the disposal of toxic waste? And I thought you said you had no knowledge of any others?

A I think you had a personal statement, I mean you had an adjective, personal knowledge. I did not have

personal knowledge, but I had information from Garrett and Wheeler and the people at Texas that it was state of the art for all the, practically all the chemical plants in that area of Texas to use the same type of disposal that we did.

Q What information did you have about how these various chemicals that were being disposed of in these waste sites would interact with one another over time?

A I don't think I had any, but I believe there's a certain amount of possibility and probability and lack of probability of interaction with compounds of the character of tar.

Q But you didn't know on an ongoing basis what was being disposed of at any particular site; correct?

A Well, I knew that the processes hadn't changed. They were manufacturing the compounds that we have gone over and the type of manufacturing, the type of raw materials, the type of end product and the type of by-products. And that changed, so I knew that the waste disposal, that the products going to the waste disposal were of the same type. I didn't know the order or magnitude or the amount of them, but I knew they were of

the same type.

Q From a chemical standpoint, would it make any difference what the particular mix and quantities were as to what kind of reactions you were likely to get?

A I'd have to -- that's a speculation. I just can't answer.

Q You just didn't know one way or another from month to month what the chemical mix of what was being disposed in the sites was; correct?

A No, but it was the same material going out, whether there were various percentages of one over the other, whether it was more styrene tar one month or more acrylonitrile tar the next month, I wouldn't know. But my impression was that the change in percentage would not affect the reaction of the waste products.

Q Did you know whether the materials were being dumped in facilities where other companies were disposing of waste?

A I don't know.

Q So you don't know whether what Monsanto was sending out was being mixed with what somebody else was disposing of?

A No, sir, but usually when a material comes out as a tar, it's a non-reactive product, a relatively non-reactive product. In other words, it's the gunk that's left after the chemical reaction has taken place and if it doesn't react with the products that you've been putting in to make it.

(Discussion off the record)

THE WITNESS: If it doesn't react with them, I would not be able to foresee what chemicals another compound company would be putting into the waste stream.

BY MR. WAITZKIN:

Q But you or no one from Monsanto undertook to determine what was being mixed in with the wastes that were coming from Monsanto?

A No, sir, I did not.

Q Now, I think you testified earlier that you had never visited any of the dump sites other than the one on Monsanto's property; correct?

A That's correct.

Q The two principal sites, off-property sites were MOTCO and Brio. Did you ever have any meetings with the medical directors of the MOTCO or Brio facilities to

discuss with them the potential toxic exposures that their workers might be subjected to?

A The answer is no, and I didn't even know if they had a medical department.

Q That was going to be my next question. Do you know whether MOTCO or Brio had a medical department?

A I do not know.

Q Do you know whether they had any kind of industrial hygiene department?

A I don't know.

Q Did anyone -- did you or did anyone under your supervision have any meetings with any of the employees at these two facilities to determine what, if any, kinds of medical problems they were experiencing?

A Did I or anybody?

Q Yes.

A I have no recollection of any.

Q Do you know whether anyone undertook a systematic effort to monitor the health of the people that were working at the MOTCO and Brio facilities to determine whether they were suffering any effects of exposure to toxic substances?

A I don't know of anyone. Certainly nobody from the medical department did, and I don't know if anybody from Monsanto did.

Q In contrast, you were constantly monitoring the health of the people who worked on the Monsanto facilities; correct?

A That's correct.

Q Including the people that were working at the Monsanto property dump site?

A Yes, sir.

Q Did you ever review or obtain any medical data on the employees and workers at these off-site facilities?

A No, sir.

Q Do you have any knowledge of what kind of or did anyone from Monsanto undertake to determine what kind of safety conditions or safety procedures were being utilized at these facilities?

A I cannot answer for anyone from Monsanto. I do not believe anybody from the medical department monitored any medical or safety procedures at these sites.

Q Do you know whether anyone ever determined whether they were using the proper kinds of gloves or

inhalers or protective equipment or protective clothing or anything in the handling of this material?

A I do not know what the people who gave Monsanto people who were in charge of disposing of the waste material might have told the Brio operators. I do not know that.

Q Is it fair to say, Dr. Kelly, that once this toxic material passed through the gates of Monsanto that Monsanto had no further involvement of it from an industrial hygiene standpoint?

A Once it went to the waste disposal site?

Q Yes.

A When you say industrial hygiene, yes, that's true, we did not.

Q And that was very different than the way you dealt with your own workers?

A Yes.

Q Was there any effort on Monsanto's part to monitor any surrounding neighborhoods around the dump site?

A I don't know.

Q Was there any effort to, on a systematic way, to provide the operators of MOTCO and Brio with updated

information about the toxicity of the materials that they were receiving?

A I don't know.

Q Was there any effort to advise the operators of MOTCO and Brio about any improvements in occupational health or industrial hygiene that Monsanto had undertaken to protect its own workers that were working with these same materials?

A Well, I do not know if there were any startling developments in Monsanto as far as protection was concerned, but from the medical point of view, we did not discuss this material, I mean these procedures with the Brio operators.

Q So is it fair to say to use an expression that you used earlier in your deposition, that the materials outside the fence were dealt with differently than the materials inside the fence?

A From what point of view?

Q From a medical and industrial hygiene standpoint.

A I don't know if they were dealt with differently. I know what we did in Monsanto. I don't know

what the Brio people did.

Q But in Brio, Monsanto did nothing at all?

A What?

Q But with respect to Brio and MOTCO, Monsanto did nothing at all to ensure the health and safety of the workers at those facilities?

A I can't say that's true because I do not know whether or not any of the Monsanto people in the waste disposal section or the manufacturing section told the Brio people what protective garments they should use with their -- protective gloves, shoes or garments they should use with working with the particular product.

Q But you as medical director and head of industrial hygiene did not do anything?

A No, did not.

(Recess)

VIDEO OPERATOR: This is Tim Perry, the video operator, and we have begun tape number two of Dr. Emmet Kelly's deposition on March 7, 1994.

BY MR. WAITZKIN:

Q Dr. Kelly, we've just shifted tapes, but we're resuming your deposition in the offices of Coburn, Croft.

What I'd like to do, if you would, is to, if you would focus upon what we've marked as Kelly Deposition Exhibit E-1, which is the 26(b)(4) statement. And I'd like to work through each of the opinions that you've -- that have been put forth for you and see first whether you agree with them and ask you a couple questions about them. And we'll go through them in order.

The first is that "Monsanto had a preventive medical program for employees from the time Dr. Kelly first began work with Monsanto and that program was the equal of or superior to the medical programs for other industrial companies in the United States." Do you agree with that statement?

A Well, I did not know -- I can't agree with it 100 percent because I did not know, for example, what the medical program of du Pont was at that particular time. But after I came to work there and after we expanded our medical program, I would say that's quite accurate.

Q And it's fair to say that Monsanto undertook substantial efforts to protect the health and safety of its own employees?

A Yes, sir.

Q And you were the one that was responsible to do that?

A Yes, sir.

Q I think as you testified just a few moments ago, though, Monsanto had no knowledge of what medical program there was or what health and safety procedures there were from the employees at Brio and MOTCO; correct?

A I said I did not know, yes. There may be people in Monsanto who did know, but I did not hear of any.

Q And from the standpoint of the medical department industrial health department, you did nothing to ensure that the medical program, the preventive medical programs that were available from the employees of Brio and MOTCO bore any relationship to the ones available at Monsanto; correct?

A Yes, I did not believe that was Monsanto's responsibility.

Q Opinion 2. "Customary, adequate and necessary steps were put in place by Monsanto Company's policies to ensure that there was no undue exposure in the work place to injury or injurious exposure to chemicals." Do you agree with that statement?

A Yes, sir. I don't know how you qualify in the workplace. Whose work place?

Q I don't know. This was written by your lawyers, not us, Dr. Kelly.

A I mean in Monsanto's work place, and we did necessary steps to prevent injurious exposure to chemicals by letting our customers know what the toxicity of our chemicals were. We had safe handling data, we had precautionary labels, we had safe handling data in our bulletins in our correspondence to customers.

Q But with respect to the waste disposal sites, Monsanto undertook no steps to ensure that there was no undue exposure to the workers at those disposal sites, to your personal knowledge?

A To my personal knowledge. But I mean you've quoted me on some of these things when you mention personal knowledge. My own personal knowledge, no. But I do not know as far as protective equipment is concerned whether or not anybody at Texas City told workers at the Brio site or the management of the Brio site what we were doing as far as gloves, rubber boots, aprons or coveralls, if needed. I don't know that.

Q And it's fair to say that you never instructed anyone to ensure that that kind of information or those procedures were put in place at the other facilities?

A I can't answer that because I don't recall.

Q You did not perceive it as your responsibility as medical director and director of industrial hygiene at Monsanto to ensure that adequate procedures were in place at the other facilities that were not owned by Monsanto?

A We had told the people what the toxicology, toxicological results of the material was, and I believe whether or not anybody told them from Monsanto about what safety procedures should be done, I don't know.

Q And none was done on your direction?

A No, sir.

Q Point 3. "Monsanto Company's policies at all times during his employment were to provide information to customers and to answer inquiries from customers concerning known effects of Monsanto products on workers or others who might come into contact with those products, to ensure that there was no undue exposure or risk of harm, injury or injurious exposure to the chemicals." Do you agree with that statement?

A Yes, sir. I am not a lawyer, so I'm sure you'd be in a position to bring out various aspects of it. But in general, I agree with it.

Q You indicated just before that it was your understanding that the toxicity of the chemicals contained in the waste streams was told to the operators of the waste disposal facilities; is that correct? It was not a well put question. Let me restate it.

You testified earlier that to your knowledge the operators of the waste disposal sites were informed of the toxicity of the materials contained in the waste stream; correct?

A Well, we didn't say this has got an LD-50 of 3.1 grams per kilogram. We probably said to them you've got to wear -- we don't think this is particularly toxic but you've got to wear gloves, and if it's hot and if you're breathing any fumes, put on a respirator.

Q Did you tell them, was there any systematic effort to advise the operators of MOTCO and Brio what toxic chemicals were contained in the waste stream?

A Not to my knowledge, no.

Q Was there any effort to tell them what

information or to share with them the information Monsanto had about their experience with injury or health problems related to each of these particular chemical ingredients?

A Well, first of all, we didn't have any injury or related health products related to these waste products.

Secondly, these were not products that were part of our manufacturing exposure. They were what was left after we manufactured the things. And I don't know whether we told them that our people who were unloading this preparatory to getting it off the plant had any illnesses or not, because we didn't have any, and I don't know if we told them our workers had been handling with no problems, they wear gloves. If it's hot we tell them to wear respirators. Was that the answer to your question?

Q My question, you had indicated earlier, I had thought, that you had advised the operators of the disposal facilities what the toxicity was of the components of the waste stream?

A In a general fashion, I said they're moderately toxic.

Q I'm sorry, only in a general fashion?

A That's right.

Q You never undertook to tell them, for example, that there might be hydrogen cyanide in this waste stream?

A No, sir.

Q You never undertook to tell them there may be some toxic mercury compound in this waste stream?

A No, sir.

Q Or benzene or any of the other items we talked about?

A Well, we told them we did not believe there was any particular worker hazard in this stream. We didn't know how much hydrogen cyanide was in the waste stream. We didn't know what form it was, but we did know that whatever was in there contributed to the general toxicity of the material which we had run and did not appear to be strikingly alarming.

Q So what you generally told them is wear gloves and if it's hot don't breathe the fumes?

A I didn't tell them that.

Q Did somebody at your direction tell them that?

A No. I said conceivably somebody at the -- in the manufacturing department who was responsible may have told them that. I don't know.

Q Let me give you a more focused inquiry then. What information did the medical department share with the operators with regard to ensuring that there would be no undue exposure or risk of harm or injury to the people operating the disposal sites?

A Outside of Monsanto?

Q Yes.

A We did not communicate with the operators at the disposal sites outside of Monsanto in the medical department.

Q So the medical department passed on no information to the operators of these sites about how to protect their workers?

A I can't answer that. I do not know whether Garrett or Wheeler may have been in communication with them on a personal basis. I recall no written communication to the Brio site operators.

Q And in the words of paragraph 3, there was no policy in the medical department to ensure that the operators of the waste disposal sites had information about how to safely handle the materials?

A The policy in the medical department was to tell

the operators of the waste disposal site plus any of our customers what we knew about the toxicity of the material, what the safe handling procedures were and -- but we did not police the thing ourselves.

Q So there was a policy -- you confused me now. Was there a policy within the medical department that the operators of the waste disposal sites should be advised of what procedures they should undertake to ensure that their workers had no undue exposure or risk of harm, injury or injurious exposure from the chemicals that were being deposited there?

A No, sir, there was no policy to that effect.

Q So you never instructed Garrett or Wheeler to make sure that the operators of those facilities were in possession of that information?

A That's correct. But I must say that somebody must have, because either at Brio or somebody from Monsanto because I had no record -- or recollection of any operator of Brio bringing any medical problems to the medical department's attention, and we got lots of letters from doctors and companies about possible or real ill effects from our chemicals. I recall nothing from Brio.

Q But there was no policy in the medical department to ensure that this information was provided to the waste disposal site operators; correct?

A No, sir. Unless -- no, there was not.

Q Paragraph 4. "Monsanto's practices and policies regarding technical bulletins and other information regarding safe handling of Monsanto products were equal to or superior to practices prevalent in American industry at all times during his employment." Do you agree with that statement?

A Yes, sir.

Q Were there any technical bulletins of any kind that dealt with the issues of waste disposal?

A No, sir.

Q So that to the extent there was an effective practice and Monsanto created technical bulletins, that has nothing to do with waste disposal issues?

A Not until the environmental aspect came into prominence. That was late '70s.

Q So that would have been after you were gone?

A Just about -- just about the time I was leaving.

Q And what kind of technical bulletins would have

been produced then?

A It was the same technical bulletin, but it had environmental sections in it about care and disposal of the material.

Q Do you know whether those technical bulletins were routinely shared with the waste disposal operators?

A No. And I do not believe there was ever a bulletin on waste disposal compounds because we didn't really know what was in the styrene tars or what was in the acrylonitrile tars or what was in the vinyl chloride tars. We gave them -- we disposed of the material to individuals who we assumed were knowledgeable about waste disposal.

Q But you didn't share Monsanto's technical information with them to ensure that they were knowledgeable?

A I didn't myself, no.

Q And no one -- as a practice of the medical department, no one did?

A No, but I do not know what queries Jack Garrett, who was down in Texas City a lot more than I was and was more knowledgeable about the waste disposal plants, may have answered in. And personal questions, I don't know.

Q Paragraph 5. "Monsanto's efforts to obtain and remain abreast of toxicity information concerning its products was given high priority and was equal to or superior to efforts prevalent in American industry;" is that correct?

A I don't think we were equal to -- well, its efforts were equal but I think there were a couple companies who had toxicological laboratories of their own before we had our own. But our efforts to obtain and remain abreast were certainly given high priority. And the efforts were certainly equal or superior to those prevalent in American industry, yes.

Q Did that include any analysis of the chronic dangers from waste disposal?

A No, sir. And I think I've stated before I did not believe there were any chronic dangers from waste disposal.

Q To your knowledge did anyone at Monsanto conduct any studies to determine whether the soil at the pits was such that there would be no leaching or leakage out?

A I don't know.

Q So you don't know what the basis within Monsanto

was of the conclusion that there would be no leakage outside the pits?

A Well, I do not know whether or not Monsanto had to give the details of what their waste materials were to the Texas water board or whichever one it is and where they allowed us to use these particular waste disposal sites. I don't know what information the Texas -- the government of Texas had from us.

Q And you don't know what the capacity of the Texas authorities was to independently undertake any investigations regarding these matters?

A No, sir, I do not know.

Q Paragraph 6. "From and after the time in approximately 1946 that Dr. Kelly acquired certain responsibilities regarding pollution, Monsanto always attempt to employ the waste disposal practices prevalent in American industry and in municipal and governmental waste disposal and to comply with all laws, regulations -- and regulations concerning waste disposal and pollution." Do you agree with that statement?

A Yes, sir.

Q Now, I think you testified at the outset, though,

that you were not personally an expert in what constituted state of the art in waste disposal; correct?

A Yes, I did. I testified I was not.

Q And I think you also testified that you were not an expert on what the requirements of federal, state and local laws were regarding waste disposal; correct?

A No, but I had people in my department who were. Garrett was aware of the state laws of -- we're still talking about Texas City?

Q With respect to your role now as an expert witness in this litigation, this statement with respect to Monsanto's compliance with state of the art as a technical matter and as compliance with legal requirements is outside your area of personal expertise?

A Say that over, please.

Q Putting you now in a position as expert witness in this lawsuit as opposed to the director of the medical department at Monsanto, you were not in a position as a matter of your personal expertise to opine on whether Monsanto was or was not using state of the art disposal practices; correct?

A No, I was not from a personal point of view, but

I had information from people who worked for me that we did comply with all laws and regulations concerning waste disposal and pollution.

Q But as a personal matter you don't know one way or another?

A No, I don't.

Q Paragraph 7. "During Dr. Kelly's employ, Monsanto gave serious attention and devoted adequate time, resources and study to waste disposal and to the potential consequences of waste disposal." Do you agree with that statement?

A Yes, sir.

Q Now, you agree that you did not analyze the chemical composition of what went out of the plant; correct?

A We did not analyze it. We knew in general what they were. I do not know whether or not our chemists at Monsanto in the manufacturing department knew what were the components of what they termed acrylonitrile tar. I do not know if they knew that, but they certainly knew what the products were and what the mix was that went out.

Q You testified earlier that Monsanto -- that you

did not know what effects the weather was going to have on the long-term deposits of these materials; correct?

A That's correct.

Q Did anyone at Monsanto ever undertake that study?

A I don't know.

Q I think you testified that you were not certain as to whether the materials were going to remain in the pits on a permanent basis or whether they were going to be moved to another site; correct?

A I did not know that.

Q And whether they would or would not be moved would pose different kinds of both environmental and health problems; correct?

A What was that again?

Q If the materials were to be removed from the pits and moved to another area, that would pose different kinds of both environmental and health problems than if they just remained in the pits; correct?

A It might.

Q And did Monsanto or anybody to your knowledge ever undertake to determine what was going to happen to those materials in the long term?

A In the long --

Q In the long term?

A No, sir, that I know of. I don't know.

Q You indicated that some of these materials were not placed in pits but were rather put into some kind of recycling operations; correct?

A That's correct.

Q What efforts did Monsanto undertake either in the medical department or elsewhere to determine what the environmental or health consequences would be of the recycling procedures that were being used?

A I can only speak for the medical department. We did not do any work on the environment around recycling plants. I do not know whether anyone else in Monsanto did or not.

Q Was there any study made of what impact the disposal was having upon groundwater by Monsanto?

A I don't know for Monsanto. I know for the medical department we did not do any studies. Whether Garrett, who was quite knowledgeable about groundwater and possible pollution effects of groundwater from waste disposal may have been in contact with either the State

Department or the plant -- I mean the state of Texas or the plant.

Q But you know of none?

A I know of none now, but I certainly may have known at the time I was there. I don't know now.

Q But as you sit here now, you know of none?

A I don't know one way or the other.

Q And I think you testified a little earlier, there was no effort either -- on a systematic basis to gather any information about the health of the workers at the disposal sites?

A Certainly not by Monsanto that I know of.

Q All right, paragraphs 8 and 9 --

MS. WALSH: It's been like an hour. Do you need another break?

THE WITNESS: All right, let's do that.

MR. WAITZKIN: Fine.

(Recess)

MR. WAITZKIN: We're resuming Dr. Kelly's deposition after a break.

BY MR. WAITZKIN:

Q Dr. Kelly, I'd like to just proceed through the

opinions as I might, and I'm sorry some of this may get a little repetitive because many of the same opinions seem to be restated in subsequent paragraphs and I just want to identify each and make sure that we're clear on your position with regard to them.

Again, this is not anything that you saw up until the time you were preparing for deposition; correct?

A That's correct.

Q So you're not responsible for the repetitive drafting, that's your lawyer's work?

A Right.

Q Paragraph 8. "At all times Monsanto attempted to and did comply fully with all legal, regulatory and permit requirements with respect to waste disposal and pollution." I think you answered some questions about that precise point just a few moments ago?

A Yes, sir.

Q That it was your understanding that they did, but it was not within your expertise to know whether that was in fact the case?

A That's correct.

Q Was it your understanding -- let me ask you a

slightly different point about that. Was it the policy of Monsanto to comply only with the minimum that was required by law or did Monsanto attempt to establish a higher standard and live to that?

A I think the latter is correct. I think they attempted to comply with a higher standard. If you read any of their annual reports, this is recently, I mean Mahoney, who is a CEO of Monsanto has come out long before the EPA came out and said you'll have to cut down a certain amount of effluents by year something, something. He said several years ago we're going to cut down 90 percent within the next period of time. I don't know, was it five years or 10 years. That was the first that I recall it was written down, although certain of the previous CEOs, Edward Queeny said we want to be a good neighbor and a good neighbor means you take care of the neighborhood and we're going to try to do our best to do it.

Q Focusing that principle on the particular situation here, I think you testified earlier that one of the reasons, one of the principal reasons that you felt that the pits were safe was because they had been approved by the Texas regulatory authorities; correct?

A That was one of the reasons. The other was it was state of the art at that time.

Q To what extent were you aware that Monsanto independently verified that the structure of the clay at the area in which the dumping was done was, in fact, a safe way to dispose of it, that the clay was, in fact, impervious and that the structure of the earth was safe for this purpose?

A You went so long I forgot the first part of it.

Q I'm sorry. I'll ask a shorter question. What independent efforts did Monsanto undertake to ensure that the pits that were being used at Brio and MOTCO were in fact safe for their purpose?

A The medical department did none unless Garrett did some inquiry about it, I don't know. But I don't know what the people who were responsible for the waste did about it.

Q So to your knowledge at least there may have been something done, but there was no soil composition studies done?

A I don't know whether there were or not.

Q There were no wells dug?

A I can't answer that. I don't know.

Q There was no effort to test groundwater?

A I don't know if they did or did not.

Q Okay. So as far as you know, at least there was a principal reliance upon the fact that the state had authorized these facilities and no independent verification of that was undertaken by Monsanto?

A And also though that there was a state of the art for a disposal in that part of the country. We were not the first people to put material into a Beaumont clay landfill.

Q Paragraph 9. "It was Monsanto's policy to comply with all such regulatory, legal and permit requirements and to communicate that policy widely throughout the corporation and to encourage enforcement of that policy." Sounds a good bit like paragraph 8, doesn't it?

A Yes, it does.

Q My question would be the same and I assume your answer is the same?

A Yes, it's the same.

Q It's the same question I asked about a previous paragraph which said basically the same thing. Let's go

on. Paragraph 10. "Monsanto hired industrial hygienists starting in 1947 and was one of the early companies in the chemical industry to do so. Thereafter, industrial hygienists were always in Monsanto's employ. They were given freedom and responsibility to search out aggressively any industrial hygiene problems and to assure that they were eliminated." Correct?

A You have to have a limitation on industrial hygiene problems.

Q Okay. How would you limit in that phrase, I think the phrase that's important here is they were given freedom and responsibility to search out aggressively any industrial hygiene problems and to assure they were eliminated. How would you limit the expression "any industrial hygiene problems"?

A I would say that they were limited to Monsanto facilities, although there was one particular type of instance where we developed -- or rather we started manufacturing a pretty potent insecticide and these insecticide manufacturers and formulators were really not cognizant of toxicity at all. And this was a new breed of toxicity. We did have our industrial hygienists go out to

those plants and they tell them about that. But with that exception the industrial hygiene activities were devoted to Monsanto sites.

Q So it would be fair to say, then, that the industrial hygienists were given freedom and responsibility to search out aggressively any industrial hygiene problems within the fence, but not outside the fence?

A Well, if somebody called from that side, yes.

Q But that would not be characterized as aggressively seeking out?

A No.

Q With respect to problems outside the fence, you would respond to problems when asked, but otherwise problems outside the fence were outside the fence?

A That's correct.

Q And not within your area of responsibility?

A That's correct.

Q And I think you indicated in response to more particular questions that no specific contacts were made with any of the operators at Brio or MOTCO or any other facilities to determine what kinds of problems they were having?

A I think I'd qualify that and say Garrett may have.

Q Paragraph 11. "It was the practice and policy of Monsanto Company at all times during Dr. Kelly's employ to permit and encourage the medical department, including industrial hygienists to visit all plants and other Monsanto facilities and to inspect and correct whatever they deemed appropriate." That seems to be a restatement of the previous paragraph in some fashion?

A I think so.

Q And I guess my question, again, would be that describes the policy for facilities inside the fence, but not for facilities outside the fence?

A That's correct.

Q Paragraph 12. "It was the policy and practice of Monsanto management to listen to and respond to recommendations of the medical department concerning health, safety, toxicology, industrial hygiene, pollution and waste disposal."

A That's correct.

Q Again, that related to practices inside the facilities but not outside the facilities?

A Well, no. Waste disposal. In other words, we advised the management that waste disposal could not consist of an arrow pointing to the sewer at the end of the flow chart. And we were responsible for the policy or management that all major not remodeling but reconstruction of a department and certainly all new plant facilities, the blueprints or the waste disposal policies were reviewed by the medical department in the form of Garrett and Wheeler and the management. We had to okay, say these were state of the art medical department -- I mean waste disposal policies that are acceptable.

Q Do you know whether open pit disposal was utilized on Monsanto property?

A Well, you mean at Texas City?

Q At Texas City?

A At the South 40?

Q There are two facilities. There's the North 80 and the South 20?

A Oh, is that the South 20 I'm thinking of?

Q And your recollection is that was an open pit facility?

A That's the impression I gathered. That's what I

thought, yes.

Q Do you recall whether the medical department made any recommendations about the manner in which the disposal was being conducted in open pits on Monsanto property?

A I do not remember. I do not know if they had talked to Garrett. Remember Garrett was originally from Texas City, he was very involved with water and landfill disposal in Texas in the state of Texas. He was so involved that I think he had to register as a lobbyist because he appeared so much down there. So they might very well have talked to Garrett about it and I was not clued into it.

Q But nothing that you were involved in?

A No, sir.

Q And again, there was no recommendations made about the way in which the disposal should be conducted at MOTCO and Brio?

A I don't know whether Garrett did or not. I don't recall seeing that correspondence. It may very well have happened.

Q Paragraph 13. "The various wastes, contaminants, constituents, chemical derivatives and other materials put

in the pits at the Texas City cluster sites because of the form, quantity, viscosity and location of these constituents were not likely to be and were not likely to be believed to be in danger of reaching or causing exposure, damage or injury to persons or property." Do you agree with that?

A Yes, sir.

Q I think you testified earlier, just taking apart this a little bit, that you did not know precisely what quantities of which toxic elements were deposited where; is that correct?

A That's correct.

Q And you're not able to estimate with any reasonable degree of accuracy how much of each of these toxic elements was deposited at any of these sites?

A No, I may have known then. I certainly don't know now.

Q And you indicate here that there's a list of -- because of the form, quantity, viscosity and so forth, what do they mean by the word "form"?

A Whether it's a liquid or a solid or a semisolid.

Q And viscosity would relate --

A How thick it is.

Q Same thing basically?

A Yes.

Q And I think you testified earlier that you did not know and do not know what form these materials remained in over long term?

A That's correct.

Q And in terms of the location of these constituents, I think you indicated you did not know how close each of these facilities was to bodies of water; is that correct?

A Yes, sir; that's correct.

Q And you did not know how close they were to any rivers or streams?

A I certainly didn't know the outside Monsanto sites. I may have known, I probably did know where the Monsanto sites were located, but I don't recall where they were now.

Q But with respect to the off-site facilities, you don't know what the location was relative to bodies of water?

A No, sir.

Q And I think you testified you didn't know what the drainage was?

A That's correct.

Q And you --

A Whether they drained at all.

Q And you didn't know whether there were any impoundment dikes around them to prevent drainage out of the facility if there was flooding?

A That's correct.

Q And I think you indicated you were not certain what kinds of facilities were nearby the dump sites; correct? You didn't know whether there were homes or schools or factories or what?

A Well, I think that changed in time. I think when they were located first, they were out in the prairie, if you can call it that. But I don't -- obviously there was development around it at later times.

Q And would the risks change as development came closer and closer to the pits?

A If there were any risk, it would change. But if there were no risk, it wouldn't change.

Q And if there were a risk from overflow from

flooding, would that be a more significant risk if there were schools or homes nearby?

A Well, it depends on what kind of a flood you're talking about. If you're talking about a Mississippi River flood that we had last fall, that's one thing. If you have a two-day flood from a hurricane, that's something else.

Q But you did not do any analysis to determine what the relative risks would be from major flooding or minor flooding or no flooding?

A No, sir.

Q And in terms of the construction of the pits, Monsanto was not involved at all in making determinations as to whether the pits would be lined or not; is that correct?

A I can't answer that because I do not know what the people at the Texas City site decided on.

Q And do you know whether the Monsanto people were involved at all in designing the structure of the pits in terms of how deep they were, how big they were or whether they had containment dikes or what kind of safety features?

A No, sir, I do not know that.

Q Were the people at Monsanto involved to any

extent in determining whether the pits would be covered over with dirt?

A I don't know whether or not that was true. If the state advised it, they did it. If the state didn't advise it, they probably didn't.

Q And you don't know from your personal knowledge what's happened to any of this material since 1974?

A No, sir, I don't.

Q And the last question with regard to this is you don't know why it was that there was a decision to stop disposing of wastes at Monsanto's North 80 in the 1960s?

A No, sir, I don't know. Maybe they needed the land, I don't know.

Q You don't know whether there were any problems related to the materials there?

A I'd heard of none.

Q Is that something you would have expected to have been consulted on if they decided to close a waste disposal site on Monsanto property?

A No, I don't think so. But I mean your other statement when you said is it one of the possibilities, if there is damage or harm to anyone in the neighborhood of

the site, I would have been told about that, but the decision to close the site would not have involved me.

Q Let's move to paragraph 14. "Manufacturing processes and materials handling, storage and movement procedures, equipment, pipelines, vessels, valves, tanks, trucks and containers used by Monsanto were all believed by the medical department as well as the corporate policy-making executives to be reasonably safe and to pose no undue risk of injury, damage or injurious exposure to persons or property during Dr. Kelly's tenure with the medical department at Monsanto." Do you agree with that?

A I'm reading it slower and closer. Yes, sir, I believe that. Was that your question, do I believe it?

Q Yes.

A Yes.

Q Now this again focuses upon the efforts of Monsanto within its own facilities; correct?

A I don't know whether that -- no, I don't think so. We certainly did our best to avoid injurious exposure to persons or properties. If they were our customers, we certainly had precautionary information on our labels. We certainly had precautionary information on our -- in our

bulletins and certainly letters and communications between me and anybody, any doctor or representative of any company that called us. So --

Q But none related to waste disposal at these facilities that you recall?

A I don't recall. But I may or may not have gotten, if it were a telephone call, it might very well have gone to Garrett.

Q Let's take this apart a phrase at a time, if we could. The manufacturing processes and materials handling that was being utilized when these waste materials were being recycled, you knew nothing about the adequacy from a safety standpoint of those procedures; correct?

A No, sir, but I had no information of any injury or illness from people working with those processes and materials.

Q But you received no medical reports, there was no medical screening, there was no systematic effort to gather data with respect to injuries; correct?

A Well, yes, that isn't correct because we did have a medical monitoring of our people at work and I saw those. I would talk to our doctors and our nurses at our

dispensaries, and I would look over some of the medical records to see if there were any clustering of illnesses.

Q That was for the Monsanto employees?

A Yes.

Q What about employees at the waste disposal sites?

A No, sir, not that.

Q So you don't know what happened to them?

A Well, no, I don't know, but I also had no record or there was no information from anybody, including case reports or government reports up until 1974 about any illnesses or ill effects at any of these environmental neighbors.

Q 15. "Monsanto maintains suitable protective clothing, antidotes, emergency equipment and warning signs and labels to assure reasonable and customary protection for workers having potential exposure to Monsanto's industrial chemicals, wastes or contaminants." Do you agree with that?

A No, I don't think so. Because we certainly didn't maintain suitable protective clothing for workers having potential exposure to Monsanto's wastes. We did our own workers. We certainly didn't provide emergency

equipment or warning signs to the Brio site employees, to pick one.

Q So in your opinion, Monsanto did not maintain any suitable protective clothing, antidotes, emergency equipment, warning signs, labels to ensure reasonable and customary protection for workers having potential exposure to Monsanto's industrial chemicals, wastes or contaminants at the MOTCO and Brio sites?

A No. I can't agree with that because I do not know what we told them about the material that went out in their own trucks to their own site. I don't know what we told them.

Q But certainly as a matter of policy, the medical department did not undertake to ensure that any of these things were in place at the facilities where Monsanto's wastes were being handled and stored?

A Say that again. I was thinking ahead.

Q From the standpoint of the medical department, there was no policy in place to ensure that the workers who were handling the Monsanto wastes at the waste disposal facilities had either suitable protective clothing, antidotes, emergency equipment or warning signs and labels

to assure that they would not be improperly exposed to the chemicals, wastes and contaminants?

A First we've got to throw some of these things out. There were no antidotes to any of these situations. We throw that out. Secondly, whether or not we told the people what protective garments they had, should use, I do not know, and I know that certainly nobody in the medical department ever ensured that the workers followed any instructions they might have been given by Monsanto people. What was the rest of your question?

Q Emergency equipment?

A No, sir, we did not.

Q Within the Monsanto facilities, you undertook very elaborate efforts to make sure that people wore proper protective clothing; correct?

A I don't know about -- we certainly had adequate and sufficient. I don't know what you mean by elaborate.

Q But you made sure that there was suitable protective clothing whenever necessary to protect the workers of Monsanto?

A Yes, sir.

Q And you made sure that there was appropriate

emergency equipment in place in case there was an accident or potential exposure?

A Yes, sir.

Q You made sure that there was proper ventilation and proper monitoring of the air within areas where exposure to fumes would be a problem; correct?

A Yes, sir.

Q And you had -- at some points had workers wearing some kind of monitoring device to measure the air intake that they were exposed to; is that correct?

A That would be very specialized.

Q But where appropriate, that was done?

A Yes, but not very frequently.

Q But is it fair to say that you did undertake serious efforts to make sure that Monsanto workers were protected?

A Yes, we did.

Q And the same kinds of things were not done or none of those things were done at the other facilities?

A No, but they were different situations entirely. You're comparing apples and oranges. The exposure at Monsanto sites was A, more concentrated; B, the material is

more concentrated, the exposure could have been massive at the sites. The only exposure they had if they fell into it, got it on their skin, or in some rare instances breathed some vapors. But the information I received that the type of viscosity and the type of chemical was such that it was not, the volatility was not a problem.

Q 16. "Monsanto had adequate policies, practices, manuals, training, instruction and procedures for the handling of any occurrences such as explosions, fires, ruptures, spills, overflows and oversprays from its manufacturing, transportation, storage or disposal of industrial chemicals and wastes." Do you agree with that?

A Yes, again, with the same caveat that I said before as far as wastes are concerned, we told the people what the toxicity of the material was and even though the medical department did not tell the people what storage facilities -- what protective facilities should be needed, I feel people in Monsanto did tell that, but I don't know. I can't answer for whether there were ruptures of a dike or spills or overflows or a fire at their place. I don't know anything about that.

Q And to your knowledge nothing was done by the

medical department to involve themselves --

A I know it wasn't by the medical department.

Q And you have no direct knowledge of any other department at Monsanto doing so?

A No, but it might very well have occurred without me knowing about it.

Q You just don't know?

A Beg your pardon?

Q You just don't know?

A I don't know.

Q 17. "Dr. Kelly is an expert in toxicity and many of the industrial chemicals and chemical compounds found during the course of his employment at Monsanto plants and the toxicity of the chemicals in certain concentrations and under certain conditions." Correct, you were an expert in toxicity?

A Well, I mean in industrial toxicology, yes. I'm not a toxicologist. I'm not an experimental toxicologist. But from the medical point of view, I believe I know as much about toxicity of our chemicals as anybody does.

Q And I believe you testified earlier that your focus was on acute exposures as opposed to chronic

exposures in terms of the testing that you did?

A Testing, it all depends on what we were trying to find out. We did acute, more acute toxicity. In fact, everyone did more acute toxicity. The amount of chronic toxicity on industrial chemicals is very, very skimpy and we did know enough about -- from the toxicity of our products that we had no reported illnesses from people, I could count. I guess the figures of, in one hand of the amount of cases of letters that I had of definite problems from our chemicals. And most of those were either misused or leaks or unforeseen situations.

Q And you don't know what kind of reports have come in since 1974, though, do you?

A Yes, I do. Probably not as close as I did in -- but I read all the toxicological journals and I haven't really seen the case reports, any of them from the disposal sites that I've seen.

Q 18. "Dr. Kelly is an expert in toxicity and epidemiology studies using laboratory animals and interpreting data from animal studies to determine potential risks to human beings." Correct?

A Well, this is also by a lawyer. I would not

quote -- I would not combine toxicity and epidemiological studies. Epidemiological studies do not use animals. They use human illnesses and mortality studies. I think I know quite a lot about toxicity studies. I've had a great number of them carried out by various laboratories. I've talked to -- I've read a lot of their reports. I've talked to an awful lot of laboratory people. I've been at conventions and meetings on toxicity. So I think I'm pretty familiar with toxicity. Epidemiological studies, I've done the same thing. I've talked to epidemiologists, I've read a couple dozen epidemiological studies. So yes, I'd agree with the changes I made.

Q 19. "Monsanto had a reasonable and adequate program of medical monitoring of employees having potential exposure to certain chemicals to determine whether such exposure of a large group over a large period of time produced evidence of latent illnesses or other consequences reflecting injurious exposure."

A Yes, sir, we did.

Q And again, that would apply only to the Monsanto employees?

A Yes, sir.

Q No effort has been undertaken by Monsanto, to your knowledge, to screen all of the people that had exposure or who worked at MOTCO or Brio to see whether they have had any long-term effects from their exposure; is that correct?

A No, sir. We believe that was the responsibility of the operator.

Q And to your knowledge, has anybody undertaken a program of medical monitoring of the employees of waste disposal sites to determine whether they're having any long-term effects?

A They may have. I wouldn't be at all surprised if some of the government people have done it, but I do not recall seeing any reports.

Q And that's not something Monsanto certainly undertook to do?

A Beg your pardon?

Q That's not something Monsanto undertook to do?

A No, we did not.

Q Last opinion here, 20. "Monsanto had at all times during Dr. Kelly's employment a reasonable basis to believe that products it manufactured could be

manufactured, handled, stored, used and sold safely. In the only instances where new information showed otherwise, Monsanto ceased to manufacture or use such products." Correct?

A Yes.

Q Did you consider the waste disposal -- the waste that was going out to the plants a product of Monsanto's?

A Well, it depends again on your definition of what a product is. I mean, Monsanto is in the business of making chemicals to be sold. The waste is a by-product. I do not believe it was sold unless it was sold to the recycler or not. I don't even know if they would have paid him to do it or the recycler paid him. But the answer is no, I did not consider it a product.

Q Now, with respect to again, just to conclude on the waste. There was no -- there is no knowledge within Monsanto currently about the quantities of material that are in these pits; correct? The quantities of toxic materials?

A I can't answer that from Monsanto. I think the people that ship the stuff out, I mean the Monsanto people that shipped it out knew how much went in there and they

probably knew what was in there also. They knew what department it came from. Whether they knew the exact chemical formulation of some of these tars, there are three different types of tars in there. And a tar is a pretty gunky material that may or may not be unable to analyze for the different product, for the different chemicals. But to answer your question, they did know the amounts and they did know the general characteristic of materials.

Q But with respect to knowing which particular toxic materials or in which sites and which quantities, you have no knowledge?

A I have no knowledge, no, sir.

Q And you do not know how those materials are interacting with weather or physical conditions in the area; correct?

A Whether they interacted at all or not, I don't know.

Q And you don't know to your knowledge whether there has been any instances where this material has spilled outside of the containment facilities; is that correct?

A That's correct.

Q And you do not know at this point how long those materials are going to stay there?

A No, sir, I don't know.

Q And you're unaware of any studies about, I think you said earlier about the chronic long-term effects on the environment of these kinds of materials remaining in these pits for extended periods of time?

A Your voice dropped off at the end.

Q I'm sorry. You're unaware of any scientific evidence as to what the chronic effects on the environment will be of these materials remaining in open pits for an extended period of time?

A No, except that I do know that I've seen no reports from any of the government bodies or any case histories or any studies that pertain to illnesses occurring from these waste sites.

MR. WAITZKIN: I have nothing else.

(The deposition was adjourned at 3:55 p.m. to reconvene at 9:00 a.m. on Tuesday, March 8, 1994.)

COMES NOW THE WITNESS, R. EMMET KELLY, and having read the foregoing transcript of the deposition taken on the 7th day of March 1994, acknowledges by signature hereto that it is a true and accurate transcript of the testimony given on the date hereinabove mentioned.

R. Emmet Kelly

R. EMMET KELLY

Subscribed and sworn to me before this

24th day of March, 1994.

JOSEPHINE S. NIBLOCK
NOTARY PUBLIC STATE OF MISSOURI
ST. LOUIS COUNTY
MY COMMISSION EXP. JAN. 15,1995

My Commission expires: _____

Josephine S. Niblock

Notary Public

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State of Missouri

SS.

City of St. Louis

I, Kristine A. O'Connor, a Notary Public in and for the State of Missouri, duly commissioned, qualified and authorized to administer oaths and to certify to depositions, do hereby certify that pursuant to Notice in the civil cause now pending and undetermined in the Superior Court of the County of New Castle, State of Delaware, to be used in the trial of said cause in said court, I was attended at the offices of Coburn & Croft, One Mercantile Center, Suite 2900, in the City of St. Louis, State of Missouri, by the aforesaid witness; and by the aforesaid attorneys; on the 7th day of March 1994.

The said witness, being of sound mind and being by me first carefully examined and duly cautioned and sworn to testify the truth, the whole truth, and nothing but the truth in the case aforesaid, thereupon testified as is shown in the foregoing transcript, said testimony being by me reported in shorthand and caused to be transcribed into typewriting, and that the foregoing pages correctly set forth the testimony of the aforementioned witness, together

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with the questions propounded by counsel and remarks and objections of counsel thereto, and is in all respects a full, true, correct and complete transcript of the questions propounded to and the answers given by said witness; that signature of the deponent was not waived by agreement of counsel.

I further certify that I am not of counsel or attorney for either of the parties to said suit, not related to nor interested in any of the parties or their attorneys.

Witness my hand and notarial seal at St. Louis, Missouri, this _ _ _ _ day of _ _ _ _ _ _ _ _ _, 1994.

My Commission expires February 13, 1998.

_ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Notary Public in and for the

State of Missouri

Reasons for making changes: (1) clarify the record: (2) conform to the facts (3) correct transcription errors

CORRECTIONS TO DEPOSITION

Page	Line	Correction:	Reason for change:
9	6-13		
10	3-10		
11	4-13		
126	6-8		
162	5-22		
163	1-11		
206	12-22		
207	6-19		
		The following should replace my testimony	1 & 2
		on the above referenced pages and lines:	
		After reviewing the transcript of my deposition,	
		I was reminded that I had, in fact, participated in	
		preparation of the statement of opinions which was	
		Exhibit E-1 to my deposition. I also know I approved	
		of the language in Exhibit E-1 prior to the time it was	
		filed with the court. Further, I met with counsel for	
		Monsanto for approximately four hours in January of 1994	
		to prepare for this deposition.	
		P Emmett Kelly MD	

Reasons for making changes:(1) clarify the record: (2) conform to the facts: (3) correct transcription errors

CORRECTIONS TO DEPOSITION

Page	Line	Correction:	Reason for change:
21	18	change "except" to "accept"	3
49	3	change "image" to "imagine"	3
54	21	change "our" to "all"	3
84	2&3	change "by mercury chlorine" to "mercury bichloride"	1 & 3
84	9	change "toxic" to "tonic"	3
86	2	change "and" to "can"	3
105	3	change "gave" to "were"	1
127	14	change"Edward" to "Edgar"	3
133	4	change "or" to "of"	3
146	1	should read: "the exposure could not have been massive at" instead of "the exposure could have been massive at"	1
151	13	change "him to do it" to "us to do it"	1
181	5	change "oppose" to "pose	3
186	3	change "details" to "dealings"	3

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