

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEW JERSEY

JOAN MAERTIN, Executrix of)
the Estate of Lothar)
Maertin, JOAN MAERTIN,)
individually and in her) Cause No. L-95-CV
own right, et al.,) 02849 (JBS)
Plaintiffs,)
vs.)
ARMSTRONG WORLD INDUSTRIES,)
INC.,)
vs.)
MONSANTO COMPANY AND AMERICAN)
MINERAL SPIRITS COMPANY,)
Defendants.)

DEPOSITION OF JOHN H. CRADDOCK
Taken on Behalf of the Defendants

November 13, 1997

Condensed Transcript and Word Index

Taylor & Associates Reporting, Inc.

COURT REPORTERS

7494 ETHEL AVE.
ST. LOUIS, MISSOURI 63117
PHONE: (314) 644-2191
1-800-280-DEPO

DEPONET. 

Page 3

1 A P P E A R A N C E S

2 For the Plaintiff:

3 LAE OFFICES OF GARY D. GINSBERG
4 BY: Brian P. O'Connor
5 II Atrium II, Suite 101
6 3000 Atrium Way
7 Mt. Laurel, New Jersey 08054
8 (709) 727-1991

9 For the Defendant Monsanto Company:

10 LATHAM & WATKINS
11 BY: Christopher M. DiMuro
12 One Newark Center
13 Newark, New Jersey 07101-3174
14 (973) 639-7298

15 SMITH HELMS MULLISS & MOORE, L.L.P.
16 BY: Gerard H. Davidson, Jr.
17 300 North Greene Street, Suite 1400
18 P. O. Box 21927
19 Greensboro, North Carolina 27420
20 (910) 378-5267

21 For the Defendant Armstrong World Industries,
22 Inc.:

23 DUANE, MORRIS & HECKSCHER, LLP
24 BY: Craig F. Turet
25 One Liberty Place
Philadelphia, Pennsylvania 19103-7396
(215) 979-1000

26 For the Defendant (Present Telephonically)

27 WILSON, ELSER, MOSKOWITZ, EDELMAN & DICKER
28 BY: Carolyn O'Connor
29 Two Gateway Center
30 Newark, New Jersey 07102-5311

Page 4

1 IT IS HEREBY STIPULATED AND AGREED by and
2 between Counsel for the Plaintiff and Counsel
3 for the Defendant that this deposition may be
4 taken by Nancy A. Kuncaitis, Notary Public and
5 Registered Professional Reporter, thereafter
6 transcribed into typewriting, with the signature
7 of the witness being expressly reserved.
8

9 JOHN H. CRADDOCK,
10 of lawful age, being produced, sworn and
11 examined on behalf of Defendant, testified as
12 follows:
13

14 EXAMINATION

15 QUESTIONS BY MR. TURET:

16 Q. Good morning, Dr. Craddock. Would you just
17 state your full name for the record, please?
18 A. John Harvey Craddock.
19 Q. Have you been deposed before today?
20 A. Yes.
21 Q. On more than one occasion?
22 A. Yes.
23 Q. You're probably familiar with this. I'm going
24 to ask you a series of questions this morning.
25 You'll be expected to answer as completely as

Page 5

1 you can. I'm not asking you to speculate or
2 guess. If you don't understand my question or
3 you don't hear it, let me know, I'll be happy to
4 repeat it or rephrase it, but if you do answer a
5 question I'll assume you heard it and understood
6 it; is that acceptable?
7 A. That's fine.
8 Q. If you need to take a break at any time let me
9 know. We'll be happy to accommodate you as long
10 as there is not a question outstanding. Also,
11 sir, do you understand that your testimony today
12 is being taken down by the court reporter and
13 will be a written transcript when we're done?
14 A. Yes, I do.
15 Q. And you understand if for any reason you're not
16 available at the time of trial in this case that
17 transcript could be admitted in your absence
18 just as if you were testifying?
19 A. Yes.
20 Q. Dr. Craddock, could you just give us a thumbnail
21 sketch of your educational background?
22 A. I got an undergraduate degree in chemistry from
23 Memphis State University in 1958. I went to
24 graduate school at Vanderbilt University in
25 Nashville, Tennessee, and graduated with a Ph.D.

Page 6

1 in chemistry in 1961.
2 Q. Do you have a master's degree as well?
3 A. No.
4 Q. Was there a particular area of specialization
5 within chemistry?
6 A. Inorganic chemistry.
7 Q. Inorganic chemistry?
8 A. Inorganic chemistry.
9 Q. Inorganic, one word?
10 A. Inorganic, one word.
11 Q. How does inorganic chemistry differ from organic
12 chemistry?
13 A. Organic chemistry is generally the chemistry of
14 the carbon atom, and inorganic chemistry is the
15 chemistry of all the other elements essentially.
16 Q. Did you do a doctoral dissertation?
17 A. Yes.
18 Q. What was the subject?
19 A. The racemization of optically active arsenic
20 five complexes.
21 Q. Sorry I asked. Have you done any further course
22 work since receiving your Ph.D. back in 1961?
23 A. I've taken some odd courses and continuing
24 education courses off and on.
25 Q. Are there any that would relate directly to

Page 7

1 polychlorinated biphenyls or other hydrocarbons?
2 A. Well, I guess in general they would relate to
3 anything. I had a course in chemical toxicology
4 at the Jefferson Medical School in Philadelphia
5 which was about a week course, just in
6 toxicological principles as applied to testing
7 of chemicals in general. I've had courses that
8 related to specific aspects of chemicals,
9 coatings, formulations or disposal of chemicals,
10 that sort of thing.
11 Q. You mentioned coatings and formulations. What
12 courses have you taken that relate to those
13 subjects?
14 A. It was just a simple course at an American
15 Chemical Society meeting where they have
16 continuing education courses and just something
17 that looked interesting and intriguing. It
18 really had nothing to do with any work that I
19 had going on at the time or anticipated.
20 Q. Was anyone from Monsanto on the faculty of that
21 particular seminar?
22 A. No.
23 Q. Mr. Darby or any of those folks were not
24 involved?
25 A. No.

Page 8

1 Q. When did you begin your employment with
2 Monsanto?
3 A. May of 1965.
4 Q. Did you work anywhere before coming to Monsanto?
5 A. Yes, I worked for the MW Kellogg Company in
6 major offices in New York City, and the
7 laboratory was in New Jersey. Primarily I was
8 assigned to the laboratory.
9 Q. What types of lab work did you do for MW
10 Kellogg?
11 A. MW Kellogg was a construction engineering
12 company primarily into the design of petroleum
13 refineries and petrochemical processes, and I
14 was involved in a new area of the chemistry at
15 the time that was the homogeneous catalyses
16 systems for producing petrochemicals from
17 hydrocarbon extractions derived from oil
18 refining.
19 Q. Did you say you were with MW Kellogg from 1961
20 to 1965?
21 A. Right.
22 Q. How did you come to be employed by Monsanto?
23 A. Monsanto ran an ad in some of the basic journals
24 or magazines, trade magazines, Chemical Engineer
25 News was one. They were forming a new group to

Page 9

Page 11

1 investigate homogeneous catalyses. And at the
2 time I was looking to change jobs from New York
3 City, and anywhere but New York City. And it
4 was a good opportunity, it was a new field and I
5 was one of the few people that was working in
6 that field at the time, maybe 100 or so in this
7 country.
8 Q. What was the position that you first assumed
9 with Monsanto?
10 A. Probably research chemist or research
11 specialist, something like that.
12 Q. How long did you remain a research chemist or
13 specialist?
14 A. Probably a year.
15 Q. During that time did you do any work with
16 polychlorinated biphenyls?
17 A. Not that I recall.
18 Q. Which division were you in as a research
19 chemist?
20 A. The corporate research department.
21 Q. What position did you assume in 1962?
22 A. Senior research chemist or research specialist
23 whatever the title was at the time.
24 Q. Was that within the same division?
25 A. Same division.

1 became a group leader then I was responsible for
2 the work of a group of other chemists.
3 Q. How long did you remain a senior group leader?
4 A. Until I left the research department in roughly
5 1973.
6 Q. Where did you go next?
7 A. I became a manager of commercial development and
8 I went to what was then the hydrocarbon and
9 polymers division.
10 Q. Were PCBs included within the hydrocarbons and
11 polymers division?
12 A. No.
13 Q. As manager of commercial development, did that
14 include research on new applications for
15 existing products?
16 A. Actually, it was -- we had developed a whole
17 family of catalysts to manufacture some
18 petrochemical products in the laboratory. And
19 as part of the function, the research people
20 keep hollering why don't you put this stuff into
21 practice, and ultimately I was transferred to
22 the commercial development manager to transfer
23 this technology from the research function to
24 the manufacturing function which was the
25 hydrocarbons and polymers division. So I

Page 10

Page 12

1 Q. Was the subject matter of your research the
2 same?
3 A. Yes, it was, homogeneous catalyses.
4 Q. How long did you remain a senior research
5 chemist?
6 A. Probably another year or two, something like
7 that.
8 Q. What position did you assume then?
9 A. Research group leader.
10 Q. Was that also within the same group?
11 A. Same group.
12 Q. How long did you remain a research group leader?
13 A. Probably a couple of years.
14 Q. So until 1966 or so?
15 A. No, we're up to probably about 1970 now, aren't
16 we, a year or two years here and there would be
17 probably up about five or six years now, about
18 '70 or '71.
19 Q. Again, the subject matter of your research was
20 the same?
21 A. Same thing.
22 Q. What position did you assume in 1970 or '71?
23 A. I became a senior group leader or something like
24 that. These are essentially salary grade
25 changes, same work, same job except that as I

1 essentially moved to the H and P division and
2 took the technology that we developed with me to
3 move it into the manufacturing division.
4 Q. How long did you remain as manager of commercial
5 development?
6 A. From '73 to about -- well, again, there is
7 another title change in there which essentially
8 is a salary grade thing, but I was in commercial
9 development in H and P until roughly '77.
10 Q. What position did you assume in 1977?
11 A. Wait a minute, let's see, take it back. There
12 was an interim job in there sometime roughly --
13 I moved from H and P to Monsanto Industrial
14 Chemicals Company into the food and fine
15 chemicals business group. That's roughly this
16 '75-'76 time frame, somewhere in there.
17 Q. Also as a commercial development --
18 A. Commercial development manager, and essentially
19 we moved the technology that we had taken to the
20 H and P division which we were now manufacturing,
21 and we were trying to sell the product, once we
22 could make the product we were trying to sell
23 the product through new uses and applications.
24 And the most promising applications were back in
25 food preservatives. And so I again moved with

Page 13

1 the product back into the operating unit which
2 would be selling the products which we were now
3 making in H and P.
4 Q. That brings us up to 1977?
5 A. About 1976, 1977.
6 Q. What position did you assume then?
7 A. Probably in '76, '77 I was still in food and
8 fine, and about '77, '78, at that point in time
9 I moved into the -- this was a new group formed
10 in the Industrial Chemicals Company which was
11 the environmental operations group, and I moved
12 into the environmental operations group about
13 that time '77, '78 somewhere like that.
14 Q. And this environmental operations group was
15 within which division?
16 A. Still it was in the Monsanto Industrial
17 Chemicals Company. It was a staff operations
18 group there.
19 Q. What was the function of the environmental
20 operations group?
21 A. At this point in time the Toxic Substances
22 Control Act had been passed, the first rules
23 were promulgated in about the summer of 1978 and
24 the company was gearing up to be able to
25 implement those regulations within the operating

Page 14

1 companies. So I moved into the environmental
2 operations group as manager of activities that
3 were related to TSCA, Toxic Substances Control
4 Act. And it was my job to implement the
5 regulations in the operating manufacturing
6 facilities for the Industrial Chemicals
7 Company. We had about 35 plants in the U.S. at
8 that time, 33 to 35.
9 Q. That was a new area for you, wasn't it?
10 A. Well, it was a new area for everybody because
11 TSCA had not been into effect. But when I was
12 in the food and fine chemicals company my area
13 was dealing with regulatory agencies because we
14 were dealing with food additives. And so I
15 dealt with the Food and Drug Administration and
16 with the U.S. Department of Agriculture which
17 had responsibility for regulating food chemicals
18 and pharmaceutical intermediates. When TSCA was
19 formed they were looking for anybody that had
20 any experience to deal with governmental
21 regulatory agencies so it was a logical
22 progression from one regulatory agency to a new
23 regulatory agency.
24 Q. Let me go back for a second to your time in food
25 and fine chemicals. What types of

Page 15

1 responsibilities did you have that led you to
2 communications with the FDA and Department of
3 Agriculture?
4 A. In the food and fine chemicals area my primary
5 responsibility was with food preservative
6 chemicals. We were adding to our portfolio. We
7 had been reselling ascorbic acid and potassium
8 sorbates which are food preservatives which were
9 regulated by the USDA, which were allowed to be
10 used, and we were buying the process from the
11 Japanese to manufacture those food additives in
12 this country. So my function was to find new
13 ways to use these chemicals to be able to sell
14 the output of a full fledged plant that would be
15 manufacturing these chemicals.
16 Q. In your efforts to find new uses, did that
17 require additional submissions to these
18 agencies?
19 A. It required testing, yes, submitting data to the
20 agencies, whatnot.
21 Q. Where these submissions written submissions or
22 were you called upon to go down to Washington to
23 meet with the agencies?
24 A. Both.
25 Q. How frequently did you actually meet with the

Page 16

1 people down there?
2 A. When you deal with regulatory agencies, we would
3 call them quarterly, or if we had new data we
4 went in as new data was available. If they
5 requested information we would go in and present
6 the information as requested.
7 Q. On average was it quarterly or more frequently?
8 A. Probably on the order of every other month or
9 so.
10 Q. Other than the FDA and U.S. Department of
11 Agriculture, were there other agencies that you
12 regularly dealt with in your capacity at the
13 food and fine chemicals?
14 A. No, that was it.
15 Q. Jumping back to your environmental operations
16 group, what did you do when you first started to
17 get ready for that position?
18 A. First thing to do is get a copy of the
19 regulations and try to read them and understand
20 what was required of the plants under the new
21 regulations that were coming in. There were
22 requirements for reporting, record keeping,
23 submission of information, everything from
24 production volumes to disposal methods,
25 whatever.

Page 17

1 Q. Did you go within Monsanto to educate others
2 within the company as to what their obligations
3 were?
4 A. Yes.
5 Q. Were there others who also were given the
6 responsibility for mastering the aspects of
7 TSCA? Do you know what you I mean when I refer
8 to TSCA?
9 A. Yes. In other operating units, there were
10 people that were responsible for TSCA and there
11 were people at the plants that were responsible
12 for TSCA. My function was to coordinate these
13 activities overall for the chemical company, the
14 Industrial Chemicals Company.
15 Q. At that time was the -- were PCBs still being
16 manufactured at the time you were --
17 A. No. PCBs had not been manufactured since
18 roughly '76, I think.
19 Q. To the extent that there were regulations or
20 provisions that related specifically to PCBs,
21 did that come under your domain?
22 A. Yes.
23 Q. What did you do specifically to learn the area
24 as it related to PCBs?
25 A. Primarily it was a matter of reading the

Page 18

1 regulations and outlining and documenting the
2 requirements that had to be met. A big area of
3 TSCA had to do with the PCB regulations at the
4 time, which required an inventory of PCBs in use
5 at the manufacturing facilities, how they were
6 used, whether they came under the use
7 authorizations, which were primarily electrical
8 equipment at the time, and a couple of dozen
9 other small items, setting up disposal
10 facilities, record keeping systems which were
11 consistent with TSCA regulations, reviewing
12 disposal contractors to assure they met the
13 requirements of TSCA. And we prepared a list of
14 specific contractors who were authorized under
15 TSCA to dispose of PCBs or store PCBs, whatever
16 was required at the time. In the early days
17 that was a disposal hiatus because TSCA required
18 disposal of PCBs and there were no facilities in
19 the country available to dispose of PCBs, so
20 PCBs essentially had to be stored.
21 Q. Based on your study of the TSCA legislation, as
22 of 1977 or '78 when you assumed the position,
23 did TSCA ban the use of PCBs?
24 A. TSCA banned the use of PCBs in the regulations
25 of issue May 31, 1979. Essentially what it did,

Page 19

1 it banned the use of PCBs except for all
2 authorized uses. So it did not ban PCBs, it
3 just set up a restricted list for which PCBs
4 were allowed to be continued to be used and they
5 are allowed to be used today.
6 Q. What were these authorized uses?
7 A. Primarily electrical uses. There were several
8 others.
9 Q. When you say electrical, does that include
10 transformers?
11 A. Primarily transformers, power distribution
12 systems, transformers, capacitors, oil field
13 cable, switches, closers, anything that has to
14 do with power transmission.
15 Q. Did you in your capacity as -- actually what was
16 the official title when you were moved into the
17 environmental operations group?
18 A. God, I don't remember. Title changed some.
19 Probably just manager of environmental control
20 TSCA, something of that nature.
21 Q. Just to round out the employment history, how
22 long did you remain at manager of environmental
23 control or whatever the precise title was?
24 A. Until June of 1980.
25 Q. What position did you assume then?

Page 20

1 A. Then I became -- I've forgotten the exact title,
2 but essentially I became the product
3 environmental safety manager with responsibility
4 for PCBs.
5 Q. How long did you remain in that position?
6 A. Until I retired February 1st, 1993.
7 Q. Have you remained retired since February of '93?
8 A. Semiretired. I do consulting a little bit. I'm
9 semiretired.
10 Q. What types of consulting have you done since
11 '93?
12 A. I've done all sorts of things. I've done lots
13 of things related to super fund sites
14 contaminated with PCBs, apportion of costs, cut
15 shares cost for disposal depending on usage.
16 I've been an expert witness for a federal
17 magistrate in New York City, a Court's expert in
18 a case involving PCB dioxin contamination of an
19 industrial site where there was an industrial
20 fire. I've consulted with clients which were
21 charged with improper disposal of PCBs by EPA in
22 their behalf to refute and dispel these
23 allegations, a variety of things.
24 Q. I guess I jumped out of sequence. Let me go
25 back to the product environmental safety manager

Page 21

1 position with responsibilities for PCBs. What
2 specific duties and responsibilities did you
3 have during your three year stint or so in that
4 position?
5 A. Where are we now, back in the Industrial
6 Chemicals Company prior to 1980?
7 Q. No, this would be June of 1980 until February of
8 1993, I believe you testified you were product
9 environmental safety manager?
10 A. So that's 13 years; I thought you said three
11 years. That's what confused me. My primary
12 responsibility was I was the corporate focal
13 point for PCB questions and PCB issues within
14 the company. My job was to see that all of our
15 plants uniformly complied with the PCB
16 regulations which came in under TSCA. My office
17 also answered any questions or inquiries that
18 came in relating to PCBs from former customers,
19 regulatory agencies, our own plants, news media,
20 the general public, anybody with questions
21 related to PCBs, they were channeled to this
22 office.
23 Q. Did you handle that entire function for yourself
24 for the 13 years?
25 A. I had various staff members assist me.

Page 22

1 Sometimes I had another chemist, or secretaries,
2 whatever. In addition, at my disposal
3 Monsanto's entire resources, the medical
4 department, the engineering department,
5 analytical department, whatever resources we had
6 there that if their services were required they
7 were available.
8 Q. When you referred to the different subjects that
9 you've addressed as consultant, have the
10 consulting projects been more for Monsanto or
11 for others?
12 A. For others.
13 Q. Have you done any consulting work for Monsanto?
14 A. No, not that I recall.
15 Q. How did your position come about as expert
16 witness for the magistrate in New York City?
17 A. Reputation as being knowledgeable, unbiased and
18 so forth. I don't know how the judge got my
19 name. I think he asked the plaintiffs and the
20 defendants to submit lists of people that were
21 known to them to be knowledgeable in the general
22 area of PCBs and who they felt would address the
23 issue in an objective manner.
24 Q. Was that a personal injury claim?
25 A. No, this involved an insurance company's trying

Page 23

1 to decide who was responsible for the costs
2 associated with the cost of cleaning up this
3 plant site after this fire.
4 Q. Where was the fire in New York City that was at
5 issue?
6 A. The fire was not in New York City. The trial
7 was in the federal court in New York City for
8 that district, whatever it was.
9 Q. Where was the fire itself?
10 A. West Virginia, a plant in West Virginia.
11 Q. Have you ever done any consulting work in a case
12 that involved alleged personal injury due to
13 alleged exposure to PCBs?
14 A. I guess I've been involved in cases that
15 involved exposure to PCBs. I don't know if
16 there was ever any litigation involved with
17 respect to that, but there has been alleged
18 exposure, yes.
19 Q. And have you ever been retained to provide
20 information about alleged health hazards in the
21 abstract that might be associated with exposure
22 to PCBs?
23 MR. DiMURO: Object to the form.
24 A. Yeah, I guess I don't quite understand what you
25 want.

Page 24

1 Q. Well, was the subject matter of your
2 consultancy, if that's a word, the compliance or
3 non compliance with regulations?
4 A. In some cases, yes.
5 Q. Was it ever on toxicological or medical aspects?
6 MR. DiMURO: Object to the form
7 again.
8 A. I've been asked about health effects of PCBs,
9 but generally when a case or something revolves
10 around PCBs my recommendation to the client is
11 get a medical expert or toxicologist or someone
12 like that and if necessary they can get those
13 people.
14 Q. Have you ever been retained to provide
15 information about Monsanto's actions or
16 Monsanto's knowledge with regard to PCBs?
17 A. Retained by other clients to ask me about
18 Monsanto?
19 Q. Yes.
20 A. No.
21 Q. Dr. Craddock, in the course of your career have
22 you been involved in trade associations or
23 organizations?
24 A. Yes.
25 Q. Which ones have you been involved in?

Page 25

Page 27

1 A. Talking about my total career or my PCB career
2 or what point in time?
3 Q. Let's start after you left the research
4 department in, say 1973?
5 A. In the hydrocarbon company there were trade
6 associations that had to do with manufacture and
7 sale of hydrocarbon chemicals. I'm hard pressed
8 to think what they were at the time. Attended
9 meetings, I think National Petroleum Refineries
10 Association in Texas which had to do with
11 procuring and refining crude oil which the
12 hydrocarbon polymers plants did. In food and
13 fine chemicals division I was a member of the
14 Institute of Food Technologists, attended all
15 the conferences for the Institute of Food
16 Technology. And there were probably a half
17 dozen different trade associations involved with
18 that that I attended meetings. Sometimes I
19 joined these groups, that's how you get to go to
20 the meetings, you pay your dues and get to go,
21 but I don't recall the names of those.
22 Q. Did you hold any offices within those
23 organizations?
24 A. No.
25 Q. How about once you became involved in the PCBs?

Page 26

1 A. After 1980 when I became involved in PCBs I
2 became very active with the Chemical
3 Manufacturers Association PCB panel. They
4 actually set, the Chemical Manufacturers
5 Association actually set up a panel of its
6 members to try to set up uniform processes or
7 standards within the chemical industry as to how
8 to handle the response to TSCA PCB regulations.
9 Ultimately the CMA group became involved with
10 other trade association groups which sort of
11 banded together to address the same issues,
12 which included the National Electrical
13 Manufacturers Association, the USWA group,
14 Utility Solid Waste Activities group, all sorts
15 of groups like this which were involved in PCB
16 activities.
17 Q. What is the EEI?
18 A. Edison Electric Institute.
19 Q. Were you at all involved in the Edison Electric
20 Institute?
21 A. USWA was a part of EEI. USWA was a subgroup of
22 EEI.
23 Q. What was EEI?
24 A. It was a trade association of electric
25 utilities.

1 Q. What was National Electrical Manufacturers
2 Association?
3 A. It was a trade association of manufacturers of
4 electrical equipment including, they had a
5 division which included manufacturers of
6 transformers, capacitors, power transmission
7 equipment, but they had all sorts of other
8 divisions, too.
9 Q. How long were you a member of the Chemical
10 Manufacturers Association?
11 A. Until I retired.
12 Q. Was the PCB panel in existence throughout
13 your --
14 A. It was formed roughly in '80, '81 late '80,
15 early '81 and it was in existence throughout
16 that time and still is in existence today to my
17 knowledge.
18 Q. Were you a member of the PCB panel?
19 A. I was a member of the panel for three or four
20 years and I was chairman of the panel for about
21 10 or 12 years.
22 Q. How large a panel was it? What was its
23 membership?
24 A. It varied. Usually it had an average membership
25 of probably eight to ten. In times of high

Page 28

1 stress, new regulations or whatever the type of
2 activities it was doing, it could jump as high
3 as 15 or 20. That's the CMA time.
4 Q. What other companies or organizations were
5 active through their representatives in the PCB
6 panel.
7 A. Are you talking about the CMA PCB panel?
8 Q. Yes.
9 A. Dow Chemical was involved, Dupont, Union
10 Carbide, most of the major chemical
11 manufacturers, mainly because they all had
12 electrical equipment. You can't run a chemical
13 plant without electrical equipment. PCB regs
14 primarily regulated electrical equipment,
15 disposal of the electrical equipment from the
16 manufacturer.
17 Q. Did any of the organizations that you've
18 mentioned get involved in lobbying activities?
19 A. No, we were not registered lobbyists. We were
20 involved in activities. We provided data to the
21 regulatory agencies, CMA intervened in a lawsuit
22 filed by the -- it was a lawsuit filed against
23 EPA over the original issuance of the PCB
24 regulations to remand the regulation as it was
25 filed by, I think the Jackie Warren group. I

Page 29

1 can't remember the name now.
2 Q. What was the substance of the allegations?
3 A. That the PCB regulations didn't go far enough or
4 that there was no basis in scientific fact for
5 establishing whether it be 50 parts per million
6 cutoff was one issue. And allowance of
7 electrical equipment that was totally enclosed,
8 that was another issue. There were several
9 issues. CMA entered that lawsuit as an
10 intervenor along with the Edison Electric
11 Institute USWA group along with NEMA.
12 Q. On whose behalf?
13 A. On behalf of their industries.
14 Q. On which side of the dispute?
15 A. They were on -- I guess I don't know whether
16 this was like a friend of the court or what.
17 They weren't really taking sides at the time.
18 Q. What was the position they were bringing to the
19 Court with regard to the regulations contained
20 within TSCA?
21 A. The industries' position was that in some cases
22 the -- I guess it was generally supporting EPA
23 at this time.
24 Q. And was that specifically on the regulations
25 that related to PCBs?

Page 30

1 A. Strictly on the regulations that related to
2 PCBs.
3 Q. Now, did, to your knowledge, the Chemical
4 Manufacturers Association have lobbyists that
5 were in Washington lobbying with respect to
6 these proposed regulations?
7 A. Well, the Chemical Manufacturers Association had
8 registered lobbyists in Washington. I don't
9 think -- I don't know if they specifically
10 lobbied with respect to these regulations.
11 Q. Who proposed the intervention into the lawsuit?
12 A. I don't know.
13 Q. Did you personally advocate one way or the other
14 as to whether the CMA should get involved?
15 A. I don't think I had any input as to whether CMA
16 should get involved into the lawsuit or not. I
17 was just a member -- this was a technical
18 panel. Our function was to provide technical
19 data to CMA, to the companies, and to EPA. EPA
20 would from time to time ask for all sorts of
21 data and our job was to try to find a way to do
22 surveys or whatever, to provide this data on the
23 use of equipment and disposal of equipment, PCBs
24 in general.
25 Q. Were there any other committees other than the

Page 31

1 Chemical Manufacturers Association that you were
2 actively involved in during your involvement
3 with PCBs? When I say involvement with PCBs,
4 you understand I'm talking about --
5 A. There was a coalition that was formed between
6 CMA, ultimately formed between CMA, NEMA, USWA
7 and the Environmental Defense Fund which worked
8 with EPA to propose guidelines for the new
9 regulations. And this was as part of the
10 settlement of whatever this intervention in this
11 lawsuit was. So I worked with this group for --
12 at the same time that I worked with the CMA
13 groups. The groups met separately, they met
14 together, they met with EPA.
15 Q. The lawsuits you referred to before by the
16 Environmental Defense Fund against the EPA?
17 A. Right.
18 Q. Were settled?
19 A. Judge Edwards ultimately resolved it and said
20 that it required EPA to go back and revisit the
21 rules and to either propose justification or
22 propose new regulations. And at that point in
23 time, every time they proposed new rules there
24 was a comment period. And the industry working
25 groups essentially would propose comments on

Page 32

1 what EPA had proposed for the new regulations as
2 well as the environmental groups. Ultimately it
3 got to where the environmental and the industry
4 groups together were working and trying to find
5 a workable system to implement the regulations.
6 Q. What was your role in that whole set of
7 activities?
8 A. I was chairman of the CMA group and I was
9 chairman for the working group for a point in
10 time.
11 Q. The working group you're referring to was the
12 one with representatives in NEMA and USWA and
13 the Environmental Defense Fund as well as CMA?
14 A. Right.
15 Q. You said you also chaired that working group and
16 you also chaired --
17 A. The CMA panel separately.
18 Q. That was the panel you referred to earlier?
19 A. Yes, CMA PCB panel.
20 MR. TURET: Let me have this marked --
21 Craddock 1.
22 (A Perspective
23 marked as Exhibit No. 1
24 for identification.)
25 MR. TURET: Can we take a quick

Page 33

1 break?
2 (Brief recess.)
3 MR. TURET: Back on the record.
4 Carolyn, are you still there?
5 MS. O'CONNOR: Yes, I am.
6 Q. For the record, the document that's been marked
7 Craddock 1 is a document that is entitled
8 Polychlorinated Biphenyls, A Perspective. It's
9 by John H. Craddock, Monsanto Bates numbered MAE
10 010245 through 257. Dr. Craddock, have you seen
11 the document that's been presented to you as
12 Craddock 1?
13 A. Yes.
14 Q. Is that a document you authored?
15 A. Yes, it is.
16 Q. What is it exactly?
17 A. It's essentially what the title says, it's a
18 perspective on PCBs at the time it was written
19 in 1981.
20 Q. There is a date on the bottom, January 22, '81.
21 Is that when it was published?
22 A. Right.
23 Q. To whom was it disseminated?
24 A. It's primarily a document I used as the basis
25 for speeches or oral presentations to various

Page 34

1 groups who would ask for presentations on PCBs.
2 Q. Was that a part of your job responsibilities at
3 that time?
4 A. Yes.
5 Q. That was when you were manager of environmental
6 control?
7 A. No, this was after 1980. It was when I had the
8 separate responsible for PCB issues.
9 Q. Okay. When you were product environmental
10 safety manager?
11 A. Correct.
12 Q. How frequently were you called upon to give
13 presentations to others on PCB issues?
14 A. It varied. In the early '80s maybe every six to
15 eight weeks, something like that.
16 Q. What types of organizations did you appear
17 before?
18 A. I think this was originally written for the
19 Chamber of Commerce of the city of Dayton, Ohio,
20 who was having a meeting about PCB electrical
21 equipment in their town, but it ranged for
22 everything from chambers of commerce, PTAs,
23 trade associations, groups who had an interest
24 in TSCA and PCBs.
25 Q. Was that organizations across the country?

Page 35

1 A. Yeah, it varied. As I say, this was originally
2 written for a speech in Dayton, Ohio. At one
3 time I think there was somebody called a
4 Building Owners and Management Association in
5 Seattle, Washington that I gave a presentation
6 to. It varied.
7 Q. Did you give presentations in-house for any of
8 the present or former customers of Monsanto?
9 A. In-house, you mean in Monsanto's house?
10 Q. No, I mean like, say, a GE for example, did you
11 ever go to a General Electric and give a
12 presentation to employees of GE?
13 A. No, I don't recall giving any presentations or
14 being requested to give presentations for
15 employee groups. I had lots of dealings with
16 General Electric and my counterparts at General
17 Electric, but never employee groups. General
18 Electric, by the way, was a member of the CMA
19 PCB panel. They had a chemicals division.
20 Q. Was Westinghouse on it as well?
21 A. No, but Westinghouse was in the NEMA group. GE
22 was also in the NEMA group because they had a
23 power transmission division, and different hats,
24 different companies.
25 Q. Did anybody else provide substantive information

Page 36

1 to you that was incorporated into this Craddock
2 1?
3 A. Well, probably. If I needed information about
4 health effects or interpretations I went to
5 Monsanto's medical department, into literature.
6 Q. Who at the medical department of Monsanto did
7 you seek out information from when you needed
8 it?
9 A. Epidemiology would have been Dr. Bill Gaffey.
10 Medical effects would have been the head of the
11 medical department at the time was George
12 Roush. Toxicology, interpretation would have
13 been Dr. George Levinskas who was head of the
14 toxicology department. Industrial hygiene, I
15 don't know who was the director of the
16 industrial hygienists at the time but we had
17 one. Whatever information I needed, the
18 resources were there, and that's where I could
19 get the information.
20 Q. On Page 3 of Craddock 1, when you were
21 discussing properties and uses of PCBs there is
22 a reference to very low vapor pressure of PCBs.
23 What does that mean?
24 A. It means it does not evaporate or volatilize
25 into the air readily.

Page 37

Page 39

1 Q. Down below under distribution it states that
2 from 1930 to 1977 about 1.4 billion pounds of
3 PCBs were produced. Where did that information
4 come from if you recall?
5 A. Primarily came from Monsanto documents that were
6 provided to the U.S. Government.
7 Q. Do you know one way or the other whether that
8 was the total of all PCBs produced throughout
9 the world?
10 A. No, that's just U.S., I believe.
11 Q. So is that just Monsanto?
12 A. Well, it's basically Monsanto. Monsanto was the
13 major producer of PCBs in the United States.
14 EPA reports there were either one or two others,
15 but Monsanto is a major player.
16 Q. And at least as of 1981, half of that amount was
17 still in use in electrical transformers and
18 capacitors?
19 A. That was an EPA estimate, yes, sir.
20 Q. That statement came from the EPA?
21 A. Yes.
22 Q. Do you have any knowledge as to how much of the
23 1.4 billion pounds are still in use today?
24 A. Very little. Just an educated guess, probably
25 -- I haven't tracked this in years, but most of

1 know who did the testing, but it's public
2 testing data, yes.
3 Q. But the information itself was given to you from
4 the medical department or you got it from
5 somewhere else?
6 A. Well, by recollection it probably came from the
7 medical department or was reviewed by the
8 medical department. It's out of a published
9 document. It could be a NIOSH document or
10 something that's a standard thing, but it came
11 through the medical department. I can say that.
12 Q. When you say reviewed by, did this particular
13 document that's been marked as Craddock 1 have
14 to be reviewed by anybody before you could use
15 it as a basis for presentations outside?
16 A. You say did it have to be reviewed by anybody.
17 There was no requirement that it had to be
18 reviewed by anybody, but in good common sense
19 and judgment it was reviewed by the experts in
20 the field because they were the ones to make
21 sure it was correct. My function was to provide
22 as much information as was known about PCBs and
23 make sure that it was correct, and it was the
24 up-to-date information of the time.
25 Q. So you had Dr. Gaffey take a look at it?

Page 38

Page 40

1 the electrical utilities have been retiring
2 equipment, whatnot, so probably 10 percent or
3 less still in use. That's just a guess.
4 Q. Okay. Page 4, as of 1981 it stated that many
5 European countries still allow and in some cases
6 require use of PCB equipment for certain
7 applications. Do you know whether that's still
8 true today?
9 A. The European countries have been phasing out
10 PCBs and the manufacturers of the European
11 countries have been phasing out. When I left
12 Monsanto in '93, I think maybe the French were
13 the only ones that were still manufacturing
14 PCBs. Whether they're still manufacturing them
15 today or not, I don't know. PCBs are still used
16 in Europe. The European regulations parallel
17 the U.S. EPA regulations, so I'm sure there is
18 still a lot of electrical equipment they're
19 still in. That is the big use.
20 Q. On Page 10, there is a statement, in the
21 classical short term exposure acute toxicity
22 sense, PCBs are classified as slightly toxic by
23 oral ingestion. Is that a statement that came
24 from the medical department at Monsanto?
25 A. Yes. And that comes from testing data. I don't

1 A. I'm sure Dr. Gaffey looked at this. I'm sure
2 Dr. Roush looked at it.
3 Q. And Dr. Levinskas?
4 A. Dr. Levinskas. Any section in here that relates
5 to a particular medical function or a health
6 function, those experts would have been asked to
7 look at it to make sure that the statements were
8 correct, make sure there were no typographical
9 errors. It's very easy to go back, when you're
10 doing something not exactly in your field to
11 take it out of context or something. So they
12 would have been the principals.
13 Q. The parenthetical at the end of that sentence
14 says, Similar to NaCL dash salt, is that table
15 salt?
16 A. That's table salt, and that has an oral
17 ingestion level in that range. It's in the
18 standard text.
19 Q. Page 12, the sentence, in total the human
20 epidemiology experience indicates an absence of
21 morbidity (ill health) associated with
22 significant exposure to PCBs. More importantly,
23 none of these studies found PCBs to cause cancer
24 in humans. Is that something that came from Dr.
25 Roush, Dr. Gaffey or Dr. Levinskas?

Page 41

1 A. Well, I had read these studies at one time
2 myself. And my interpretation, and I wrote
3 this, and they agreed with what I had written,
4 that these studies showed that there was an
5 absence of ill health.
6 Q. And the last page, the conclusion that in some
7 cases these compounds have been labeled by
8 regulatory agencies, legislative bodies, the
9 populace and the media as human cancer causing
10 agents and deadly toxins. However, the
11 scientific evidence does not support these
12 claims. Was that your view as of January of
13 '81?
14 A. That was my view in January of '81 and remains
15 my view today.
16 Q. I take it Dr. Roush, Dr. Levinskas and Dr.
17 Gaffey also signed off on these and can be
18 included?
19 A. I don't know if they signed off on it. They
20 agreed with my conclusion.
21 (Letter dated 11/13/81
22 marked as Exhibit No. 2
23 for identification.)
24 Q. For the record, Craddock 2 is a letter signed by
25 John Craddock dated 11/13/81, addressed to

Page 42

1 Document Control Officer, EPA. Dr. Craddock,
2 have you seen this letter before today?
3 A. Yes.
4 Q. Is this a letter that you wrote to the EPA back
5 on November 13 of '81?
6 A. Yes, it is.
7 Q. What were the circumstances that prompted you to
8 write this?
9 A. EPA filed a notice of proposed rule making and
10 this rule, as I recall, is called the closed and
11 control rule or incidental manufacture of PCBs,
12 one of those two.
13 Q. What was the substance of that proposed
14 regulation?
15 A. EPA was trying to -- they had written an all
16 encompassing rule about PCBs and they failed to
17 recognize that PCBs could be manufactured
18 incidentally just in the course of chemical
19 reactions that were taking place. It's just a
20 statistical occurrence; small, but measurable
21 trace amounts of PCBs could be formed. So they
22 had to find a way out of the box. They had
23 banned certain processes and things. They had
24 taken the approach that any molecule of PCBs
25 were bad, but it wasn't a practical approach.

Page 43

1 Q. Is this the kind of letter that we talked about
2 before as one of your responsibilities to
3 comment on proposed rule making by agencies?
4 A. Yes.
5 Q. On the third page of the letter, the paragraph
6 that begins with "in addition"?
7 A. Okay.
8 Q. There are -- there is a statement that through
9 reviews of the scientific and technical
10 literature relating to health effects of test
11 animals exposed to PCBs by several independent
12 bodies show that PCBs are not deadly toxins as
13 occasionally misrepresented in the news media.
14 Is that something that you wrote or is that
15 something that was written as part of the letter
16 for you?
17 A. Well, I wrote this letter, this letter wasn't
18 written for me. That was my opinion and still
19 is my opinion.
20 Q. When you wrote this letter did you run it by any
21 of the other departments before sending it out?
22 MR. DIMURO: Object to the form. You
23 can answer.
24 A. I don't specifically recall, but as I stated
25 previously, when I sent out a document, I

Page 44

1 generally made sure that appropriate people who
2 could have any input would read it and comment
3 on it and so I'm sure that I did, but I don't
4 recall that particularly.
5 Q. And was it your view then and now that any
6 impact of PCBs on the environment is so slight
7 as to be totally insignificant?
8 A. Yes.
9 Q. Was it also the view of the other departments to
10 whom you showed this letter?
11 MR. DIMURO: Object to form. He
12 didn't say he showed it to any other
13 departments. With that objection, you can
14 answer the question.
15 A. Nobody disagreed with my conclusion to suggest
16 that I change it, so I assume that they agreed
17 with it. They didn't disagree with it. That's
18 about all I can say.
19 Q. Did the EPA change their proposed rules that
20 were at issue in this letter?
21 A. They essentially wrote a new rule, yes.
22 Q. Did the new rule allow for incidental --
23 A. Yes.
24 Q. -- creation of PCBs?
25 A. Yes.

Page 45	Page 47
1 MR. DiMURO: Let him finish his 2 question for the sake of the court reporter. 3 THE WITNESS: Yes. 4 MR. DiMURO: I know you can 5 anticipate what he's going to say. 6 MR. TURET: I also speak very slowly. 7 (Letter dated 3/17/82 8 marked as Exhibit No. 3 9 for identification.) 10 Q. For the record, Craddock 3 is a letter from DR 11 Bishop to Mr. Robert Schofield, 12 S-C-H-O-F-I-E-L-D, dated March 17, 1982, MAE 13 005905. Dr. Craddock, have you seen the letter 14 that's just been marked as Craddock 3 before? 15 A. Yes, I have. 16 Q. Who is DR Bishop? 17 A. Dan Bishop was the director of the public 18 relations department at Monsanto at the time 19 period. 20 Q. Did you know Mr. Bishop as director of public 21 relations back in Monsanto in St. Louis as well? 22 A. Yes. 23 Q. During this time he was in Monsanto Europe? 24 A. No, I think he was in Europe at some point in 25 time but he was also in St. Louis. He may have	1 salt as well, yes. 2 Q. And you're listed as a blind carbon copy. Was 3 it customary for you to receive letters from 4 Monsanto Europe? 5 A. Any correspondence related to PCBs I was 6 customarily copied on. 7 Q. Was there any other location abroad other than 8 Monsanto Europe that generated letters on behalf 9 of Monsanto relating to PCBs? 10 A. Well, the Brussels office of Monsanto Europe 11 generally handled questions related to Monsanto 12 Chemicals outside the U.S. So they would have 13 gone through, generally any inquiries would have 14 gone through that office. 15 (Documents 16 marked as Exhibits Nos. 4, 5, 6 17 for identification.) 18 (Discussion off the record) 19 Q. For the record, we've now marked a document as 20 Craddock 4 which is a March 25, 1982 letter from 21 Mr. Craddock that's Bates numbered MAE 054387, 22 through 388. Craddock 5 is a news release, 23 Bates number MAE 005907 to 908. And Craddock 6 24 is a document that's entitled the Epidemiology 25 of PCBs, authored by William Gaffey,
Page 46	Page 48
1 been in Europe at this time, but I knew him in 2 St. Louis and in Europe when he came back. 3 Q. Mr. Bishop makes the statement in the paragraph 4 numbered one that there has never been a single 5 documented case of human cancer or any other 6 chronic long-term illness attributed to Monsanto 7 manufactured PCB compounds anywhere in the 8 world. Would you have agreed with that 9 statement back in March of 1982? 10 A. Yes. 11 Q. Do you still agree with that statement as of 12 today? 13 A. Yes, I do. 14 Q. In Paragraph 4 Mr. Bishop makes the statement 15 that the acute oral toxicity of PCBs is roughly 16 the equivalent of common table salt and thus it 17 is considered to be only mildly toxic. Is that 18 the same statement we saw a few moments ago? 19 MR. DiMURO: I'll object to the form 20 of the question. 21 Q. Would you agree that the reference to table salt 22 as an analogy to PCBs was in the paper we 23 reviewed? 24 A. He's essentially taking the same published data 25 about LD 50 or PCBs and comparing it to table	1 G-A-F-F-E-Y, and Bates numbered MAE 011777 2 through 807. 3 Mr. Craddock, let's address each of 4 these in turn. Have you seen the document that 5 has been marked Craddock 4 before today? 6 A. Yes, I have. 7 Q. Is that a letter that you wrote to Ms. Dolly 8 Katz of the Detroit Free Press back on March 25 9 of '82? 10 A. That's correct. 11 Q. What is the Detroit Free Press? 12 A. That's the major newspaper in Detroit, Michigan, 13 or it was major. I don't know whether it is 14 now. 15 Q. In the -- do you recall why it was that you were 16 writing to Ms. Katz? 17 A. Yes. She called me to discuss PCBs in general 18 and a symposium that was taking place or had 19 taken place, I've forgot which now, in 20 Michigan. 21 Q. There is a reference in the second paragraph to 22 the end to a different conclusion from Dr. 23 Humphrey. Who is Dr. Humphrey? What were his 24 different conclusions? 25 A. Dr. Humphrey was, I think he's an epidemiologist,

Page 49

Page 51

1 in the state of Michigan. I don't know whether
2 he worked for, whether he was with the
3 university or worked for the Department of
4 Natural Resources, but he was from the state of
5 Michigan and he had done a lot of fish studies
6 or studies on people who had consumed fish.
7 Q. Do you remember what the conclusions were?
8 A. He's written several papers and, no, I would
9 have to look at the paper now, it's been so
10 long, that's 15 years.
11 Q. Down at the very bottom, the enclosures, there
12 is a reference to the Gaffey paper. Is that the
13 document that's been marked as Craddock 6, The
14 Epidemiology of PCBs?
15 A. That is correct.
16 Q. Is that a document that you've seen? You
17 referred to having read the epidemiological
18 studies in the past, is Craddock 6 a document
19 that you've read before?
20 A. Yes, it is.
21 Q. And Dr. Gaffey was the epidemiologist that you
22 referred to that was at one time in the medical
23 department of Monsanto?
24 A. He was the director of the Monsanto epidemiology
25 department.

1 from Mr. Gaffey's epidemiological study on PCBs?
2 MR. DIMURO: Do you want him to read
3 it?
4 MR. TURET: No, he said he read it.
5 MR. DIMURO: Do you need to read it?
6 A. If you want detailed discussions of conclusions,
7 I would have to read it again. It's been 15, 16
8 years, but --
9 Q. Let me put it this way: Is it your
10 understanding that the bottom line of Dr.
11 Gaffey's work was that none of the health
12 studies dealing with human exposure to PCBs
13 showed a link between PCBs and cancer?
14 MR. DIMURO: Object to the form, and
15 you can answer.
16 MR. O'CONNOR: Join the objection.
17 A. Dr. Gaffey's study was done at my direction. I
18 had looked at most of these studies that had
19 been published trying to sort these out in my
20 own mind. And the thing that became patently
21 clear is that all of these studies had been
22 published independently with all sorts of
23 conclusions, and that no one had reviewed all of
24 the separate studies, and there were probably a
25 dozen or two dozen of these things published

Page 50

Page 52

1 Q. There is also a reference to Gaffey's press
2 release in Craddock 4. Is that the news release
3 that's marked as Craddock 5?
4 A. That's correct.
5 Q. And what is the reference to CMA overview?
6 A. CMA had caused to be published several documents
7 relating to the health effects of PCBs and
8 summaries of the literature. And I'm sure that
9 -- I don't have a copy of the documents in
10 front of me, but I'm sure we sent them a copy of
11 the CMA document, whatever it was. She was
12 asking for as much information as she could get,
13 so I'm sure that was provided to her.
14 Q. Do you know if anyone from Monsanto participated
15 in putting together the CMA overview of PCBs?
16 A. I'm sure Monsanto provided data but the CMA
17 overview was primarily done by independent
18 contractors. In fact, the contractors are
19 listed there, Ecology and Environment.
20 Q. These were the same contractors that --
21 A. That were retained by the CMA panel to review
22 contact with PCBs.
23 Q. Just a reminder, let me get the question all the
24 way out so the transcript will be readable.
25 What is your understanding of the conclusions

1 over a decade, to see what the overall
2 conclusion should be. This includes the U.S.
3 EPA, all the government regulatory agencies
4 which were writing all these rules at the time.
5 And I asked Dr. Gaffey to assemble all these
6 papers and do an overall review of the
7 epidemiology of PCBs. It was really quite
8 startling when you did that because if you took
9 all the papers and put them together, there was
10 no clear causal relationship between PCBs and
11 human ills or PCBs and human illness. I haven't
12 gone back and looked at the conclusions, but I'm
13 sure that's what they say now. That was very
14 surprising at the time. That's why he was
15 invited to present this paper all over the
16 country because people were quite surprised that
17 nobody had taken the time to sit down and put
18 all this together, first time it had been done,
19 1981. Does that answer your question?
20 Q. Yes, it does. When you say that you asked Mr.
21 Gaffey to do this study, was Mr. Gaffey -- was
22 he under you in the -- I mean, did you have the
23 ability to instruct him to do a study or were
24 your recommending that it was a study that
25 should be done?

Page 53

Page 55

1 MR. DiMURO: Object to the form.
2 A. As I told you, my function was the corporate
3 focal point for PCBs in Monsanto operations and
4 in order to get the job done I had at my
5 disposal all the resources within the
6 corporation. And as director of this function,
7 I could ask the director of the medical
8 department or the director of epidemiology
9 questions, and ask them for an answer. And I
10 had a discussion with Dr. Gaffey and he was
11 surprised nobody had done this. And so it
12 wasn't a question of directing him to do it. I
13 said has anybody ever looked at these studies,
14 what do you think the results would be. He did
15 the study, he assembled the papers, reviewed
16 them. Dr. Gaffey was a well known established
17 credible scientist in the field. He was a well
18 known epidemiologist in the country. When you
19 have one of the top people in the country at
20 your disposal, sure as hell you're going to ask
21 him to look at it. And being as bright as I
22 thought he was, he thought it was a good idea.
23 And the paper was received in the scientific
24 community very well. People were astounded it
25 hadn't been done before because it was such a

1 A. Yes.
2 Q. And is this a letter that you wrote in April 15,
3 '82 to Mr. Barry Sheerman, MP?
4 A. Yes. MP is Member of Parliament.
5 Q. The first sentence says that Dan Bishop,
6 director of public affairs of Monsanto Europe
7 had asked that you respond to his letter of
8 March 27, his being Mr. Sheerman. What had Mr.
9 Sheerman written to Dan Bishop or Monsanto
10 about?
11 A. I would have to see the letter to recall. To me
12 it looks like that he was asking for more
13 detailed health effects information on PCBs.
14 Q. Why did Dan Bishop ask you to respond?
15 A. My function was to respond to PCB issues in
16 general. Dan was the director of public
17 relations, but when it got into more detailed
18 scientific questions, he would ask me to answer
19 those questions for him to respond in more
20 detail.
21 Q. Flip back down to the very bottom of the letter
22 with the enclosure section?
23 A. Yes.
24 Q. There is a reference to the Ecology and
25 Environment Executive Summary. That's the one

Page 54

Page 56

1 simple thing to do.
2 Q. Do you know whether updates were done on the
3 epidemiological study subsequently?
4 MR. DiMURO: I object to form; by
5 Monsanto or anybody?
6 MR. TURET: By Dr. Gaffey?
7 A. I don't think Dr. Gaffey did any updates, mainly
8 because up until that point of time there were
9 very few other epidemiological studies that were
10 done. There may have been a few done since
11 then, but I haven't followed the literature that
12 close since '92, '93. There is one in the press
13 in the past week about PCBs and breast cancer.
14 It ain't so. It's been alleged for years PCBs
15 cause these horrid things. You get another
16 study, it's not so. So I would say the studies
17 support the paper. Dr. Gaffey is deceased, so
18 he can't update it anymore.
19 (Letter dated 4/15/82
20 marked as Exhibit No. 7
21 for identification.)
22 Q. For the record Craddock 7 is an April 15, 1982
23 letter from Mr. Craddock to Mr. Barry Sheerman,
24 MP. Dr. Craddock, have you seen this document
25 before today?

1 we just saw, and there's a reference to CMA
2 Comments to ANPR. What is that?
3 A. That's the advance notice of proposed rule
4 making. That was published on that page in the
5 Federal Register. I would have to look at it to
6 see which rule it was. Over two dozen EPA rules
7 came out in that time period so the final PCB
8 rule was not final. It's a new rule that was
9 supposed to be out four years ago to end all PCB
10 rules, and if that's it, I don't know.
11 Q. What was the 80-015 package?
12 A. In my function as the major focal point of PCBs
13 within Monsanto Company, we got so many requests
14 for all kinds of information from people that
15 after I would get a request more than once or
16 twice that looked like a recurring request, I
17 would put together packages of information. And
18 it was different levels of information. We had
19 packages for high school kids writing science
20 papers. We had packages for elementary kids
21 writing science papers. We had packages for
22 various degrees of detail or answering specific
23 questions. So to simplify things for me, once
24 that package had been put together, I would
25 write a response letter and tell my secretary,

Page 57

1 send them this package, so she would send all
2 the attendant information in that particular
3 package of handouts. I was in the information
4 dissemination business, provide as much
5 information as possible.
6 (Letter dated 9/15/82
7 marked as Exhibit No. 8
8 for identification.)
9 Q. For the record, Craddock 8 is a September 15,
10 1982, letter from Dan Bishop to the editor,
11 Electrical Review. Mr. Craddock, have you seen
12 this letter before today?
13 A. I most probably have because I'm a "carbonee."
14 Q. From the heading at the very top, this is from
15 Dan Bishop while he was with Monsanto Europe?
16 A. Yes.
17 Q. The second paragraph of Mr. Bishop's letter
18 again is addressing the issue of a highly toxic
19 or carcinogenic label, and he talks about PCBs
20 on an acute basis are about as toxic to humans
21 as common table salt and are classified as only
22 mildly toxic. And you agreed with that
23 statement before?
24 A. Yes.
25 Q. The very last paragraph Mr. Bishop states: As a

Page 58

1 former manufacturer of PCBs and an unrivaled
2 source of scientific expertise on them, we have
3 a responsibility to combat the grossly
4 exaggerated perceptions of risk associated with
5 PCBs wherever encountered. Do you agree with
6 that as well?
7 A. Yes.
8 (Monsanto Backgrounder
9 marked as Exhibit No. 9
10 for identification.)
11 Q. For the record, the document that's been marked
12 as Craddock 9 is a document that's entitled
13 Monsanto Backgrounder, Polychlorinated
14 Biphenyls. Mr. Craddock, have you seen this
15 document before today?
16 A. Yes, I have.
17 Q. What is a Monsanto Backgrounder?
18 A. It's Monsanto's policy that for products or
19 issues that we received a lot of inquiries
20 about, that we would put together a paper called
21 a background information document. And this was
22 a standard piece of information which included
23 the facts and representations as we knew it at
24 the time. For this particular Backgrounder,
25 this was related to polychlorinated biphenyls,

Page 59

1 and I had some input and some knowledge of it in
2 detail.
3 Q. And which department within Monsanto put
4 together Backgrounders?
5 A. The Backgrounders were primarily put together by
6 the public relations department.
7 Q. And was that with input from the medical
8 department and whatever the applicable
9 departments were?
10 MR. DiMURO: Object to form.
11 A. Yes, these people are primarily, or their
12 function is to provide information in readable
13 form for generally non-technical audiences, and
14 one way that we used this information was that
15 we sent these to all of our plant managers, so
16 if they had a question that they could answer
17 this question on the spot. They wouldn't say
18 you have to go ask John Craddock in St. Louis.
19 There were certain basic facts that were known
20 that are in all of our written documents and all
21 of our written testimony, whatever we had. If
22 we made this information available, in case you
23 couldn't get hold of me, that was there, and
24 this could be sent immediately. If you had a
25 specific question, you could come back. It was

Page 60

1 just to provide general background information
2 on the particular subject. This particular
3 subject is PCBs.
4 Q. On the second page, the paragraph begins, it's
5 important to note the following. Third
6 paragraph, the first item of information is
7 Monsanto's decision to withdraw from the PCB
8 business was based on concerns about
9 environmental persistence rather than health
10 effects. Do you know what was the source of
11 your information for that statement?
12 A. Yes, there was a study that was done in 19 --
13 early 1970s that was published as the
14 inter-agency task force on PCBs summary, I think
15 it was published in March of 1972. And this
16 study was a cooperative study between government
17 agencies that existed at the time, I'm not sure
18 EPA was even there at the time. Monsanto, as a
19 manufacturer of PCBs, the government agencies
20 that were involved, I know the USDA was --
21 involved, FDA, whatever they had, council on
22 environmental quality or something like that.
23 PCBs had become an issue. They put together a
24 task force of regulatory agencies. Monsanto was
25 a participant, provided all the information that

Page 61

Page 63

1 we had. We had more information than anybody
2 else, any other companies that had an interest
3 in PCBs or anybody. And so this task force met,
4 published this report.

5 Q. Am I understanding you correctly that the report
6 of that group concluded that Monsanto's decision
7 to withdraw from the PCB business was based on
8 concerns about environmental persistence rather
9 than health effects?

10 MR. DiMURO: Objection to the form of
11 the question.

12 A. The group had nothing to do with Monsanto's
13 decision. The group issued the report that PCBs
14 were environmentally persistent, PCBs had not
15 been shown to be a human health hazard, and so
16 forth. But PCBs were a big issue because at
17 this time this was about the time they had been
18 discovered in the environment in shells of bird
19 eggs and feathers of eagles and things like
20 this. So at this point in time Monsanto decided
21 that they would slowly move out of the PCB
22 business, they would stop sales for open use
23 which was -- that was based strictly on
24 environmental persistence. Does that answer
25 your question?

1 salt, but nobody could understand eating mineral
2 oil or motor oil. So if I made a comparison, my
3 approach was to use something people knew about
4 that they used daily. I don't know where this
5 came from. Possibly if you went through a list
6 of toxicities, they would all be in that
7 listing. Mineral oil is what my grandfather
8 took for constipation, you know, it might move
9 you, but it's not going to kill you. Motor oil,
10 I don't know.

11 Q. Do you know one way or the other whether there
12 is any significance to the reference to mineral
13 oil or motor oil rather than table salt?

14 A. No, I think it's in the eyes of the beholders.

15 Q. Down at the very bottom there is a reference,
16 for additional information contact Dan Bishop or
17 Larry J. O'Neill. Who is Larry J. O'Neill?

18 A. Larry J. O'Neill was a staff member in the
19 public relations department of Monsanto at the
20 time.

21 Q. To your knowledge, did he have a particular
22 specialization on PCB issues?

23 A. Well, he used to work for EPA on PCBs and he
24 left EPA and joined Monsanto. It wasn't a
25 specialization. That just happened to be one of

Page 62

Page 64

1 Q. I think so. On page 5 Paragraph 2, there is a
2 statement, based on acute, subchronic and
3 chronic studies of PCB effects in test animals,
4 it can be stated that PCBs have a low order of
5 acute toxicity similar to that of mineral oil
6 and motor oil.

7 MR. DiMURO: Or motor oil.

8 Q. Pardon me, mineral oil or motor oil. Did this
9 information come from you or did it come from
10 someone else?

11 A. This probably came from -- it didn't come from
12 me that I recall. Most probably came from
13 published data on the acute toxicity studies and
14 compared them with nonacute toxicity studies of
15 other chemicals.

16 Q. As the point person on PCB issues, do you
17 remember a time where the reference to table
18 salt changed to reference to mineral oil or
19 motor oil?

20 MR. DiMURO: I object to the form.
21 You can answer if you can.

22 A. I don't remember when it changed. I used the
23 reference to table salt because I thought it was
24 more easily understandable. If you're talking
25 about human effects, people understand table

1 the products that he dealt with at EPA and he
2 also did that at Monsanto. PCBs was not a
3 full-time job for any person in Monsanto. PCBs
4 was just another one of the items that had to be
5 responded to. I was the only person in Monsanto
6 that had a full-time job that had to do with
7 PCBs as far as I know.

8 (Report/J. Craddock
9 marked as Exhibit No. 10
10 for identification.)

11 Q. For the record, Craddock 10 is a document
12 entitled, PCBs Not Deadly Chemicals by Dr. John
13 H. Craddock. Dr. Craddock, is this a document
14 you've seen before today?

15 A. Yes, it is.

16 Q. What is the document that's been marked as
17 Craddock 10?

18 A. It's a short article discussing the toxicity or
19 health effects of PCBs.

20 Q. And it's an article you wrote?

21 A. Yes, it is.

22 Q. Do you remember to whom it was to be
23 disseminated?

24 A. I don't remember exactly, but I think this was a
25 letter to the editor of -- I don't know whether

Page 65

Page 67

1 it was a newspaper or magazine or a journal in
2 response to some article that had been published
3 previously about PCBs.
4 Q. Do you know when it was written?
5 A. I don't see a date on it. I don't remember --
6 well, it had to be after 1980 because I was
7 there, but it could have been written any time.
8 After 1980 for sure, and after 1981, that's the
9 latest date.
10 (Nova transcript
11 marked as Exhibit No. 11
12 for identification.)
13 Q. Mr. Craddock, you're being shown a document
14 that's a Broadcast Information Services, Inc.
15 transcript of the program Nova of October 2 of
16 1979. I'm not going to ask you to read that
17 word for word, not to worry. Have you ever seen
18 it before?
19 A. Probably.
20 Q. On Page 9 of it Dan Bishop is quoted as saying
21 that the chemical industry knows more about --
22 MR. DiMURO: Hold on a second.
23 MR. TURET: I'm sorry.
24 MR. DiMURO: Where you are reading?
25 MR. TURET: From where it says, Dan

1 than anybody else, and Dupont knows more about
2 its products than anybody else, absolutely.
3 Q. Fair enough.
4 (Brief recess.)
5 MR. TURET: Back on the record.
6 Q. Dr. Craddock, when did you first learn that PCBs
7 had been discovered at Burlington County
8 College?
9 A. It was probably -- I don't know whether I saw it
10 in a newspaper release or whether I had a call
11 from Armstrong first, but it's been mid '80s,
12 '85, '86 time frame, something like that.
13 Q. Do you remember who it was that contacted you
14 either from within Monsanto or from Armstrong?
15 A. When I was contacted?
16 Q. Yes.
17 A. I think that the first contact I had that
18 Armstrong had a problem might have been from
19 Dick Mahoney or his office.
20 Q. Who was Dick Mahoney?
21 A. Dick Mahoney was the CEO of Monsanto at the
22 time.
23 Q. What was the substance of what he told you?
24 A. That Armstrong, who was a major customer of
25 ours, had a PCB problem and that they needed

Page 66

Page 68

1 Bishop. It quotes him as saying the chemical
2 industry knows more about their products than
3 anyone else does. They have the best equipment,
4 they have the best qualified people.
5 Q. Do you agree based on your experience both as an
6 employee of Monsanto and with others at the
7 Chemical Manufacturers Association?
8 MR. DiMURO: I'm going to object to
9 the form.
10 MS. O'CONNOR: Object to the form of
11 that question.
12 Q. Do you agree with that statement?
13 MR. DiMURO: As to what time period?
14 I'm objecting to the form of the question.
15 A. I guess I'm not sure what you want me to agree
16 to.
17 Q. Do you agree that the chemical industry knows
18 more about their products than anyone else does?
19 A. I would say that the major players in the
20 chemical industry. My statement would be that
21 the majors in the chemical industry know more
22 about their products than anyone else.
23 Q. Does Monsanto know more about its products than
24 anybody else?
25 A. That's right. Dow knows more about its products

1 some help and some information and to give them
2 all the help and information that we could.
3 Q. In the ordinary course where a customer or
4 former customer of Monsanto had, as you've
5 described it, a PCB problem, were you the one
6 who was particularly contacted to provide
7 information or assistance?
8 A. Yes.
9 Q. Was that part of your job responsibility at the
10 time?
11 A. Yeah, my job responsibility from 1980 on was to
12 deal with PCB issues for the company.
13 Q. What did you do after hearing from Dick Mahoney
14 about Armstrong?
15 A. I did what anybody else does who hears from the
16 CEO, got my butt in high gear and called
17 Armstrong or went to Lancaster shortly
18 thereafter.
19 Q. Who did you call first?
20 A. I was given some names. I can't remember. I
21 talked to a young woman who was an industrial
22 hygienist at some point in time.
23 MR. O'CONNOR: Are we talking with
24 about at Armstrong?
25 MR. TURET: Yes.

Page 69

Page 71

1 A. There were three or four people there that I
2 talked to at different times, and I think they
3 were at the first meeting. They all weren't at
4 the second meeting because that was a pretty
5 high level meeting. But there was a woman who
6 was an industrial hygienist, there was a VP who
7 was at both meetings and there was another guy,
8 I don't know whether he was an analytical
9 chemist or what his function was. His name was
10 Kilgour. I talked to him a couple of times.
11 But those are the people that I remember.
12 Q. Would you know the name of the woman if you
13 heard it?
14 A. Yeah, probably.
15 Q. Was it Carolyn Kent?
16 A. Yeah, Carolyn Kent.
17 Q. You think Carolyn Kent was the first person you
18 spoke to when you called?
19 A. I don't know, either she or this Kilgour.
20 Q. Who was it that --
21 A. I think this Carolyn person, I think she also
22 talked -- she was on the committee with our OSHA
23 guy and I think she might have -- I think this
24 may have come in from two ways. I think she may
25 have talked to him, and he may have said, you

1 Q. All right. So a couple days after the initial
2 contact you had a meeting out in Lancaster?
3 A. Yes.
4 Q. That was just you and Bob Kaley from Monsanto?
5 A. Right.
6 Q. Who was there from Armstrong other than Carolyn
7 Kent, the vice president --
8 A. There was a room full of people. We got there
9 and there was a meeting going and they were --
10 somewhere there has got to be a trip report or
11 something that's got all that stuff.
12 Q. Actually I'm going to mark it right now.
13 (Memo dated 4/4/86
14 marked as Exhibit No. 12
15 for identification.)
16 Q. Dr. Craddock, have you seen the document that's
17 been marked as Craddock 12 before?
18 A. Yes.
19 Q. Is that a memo that Dr. Kaley wrote summarizing
20 his and your visit to Armstrong?
21 A. That's correct.
22 Q. On the first page there is a listing of four or
23 five people. TM Bistline, is that Tom Bistline
24 from the legal department?
25 A. Yes.

Page 70

Page 72

1 know, call this person. It all happened about
2 the same time.
3 Q. Who's the OSHA guy to whom you're referring?
4 A. Tom Evans.
5 Q. Now, who was it that told you what the problem
6 was with the PCBs?
7 A. The details of what the problem was?
8 Q. Yeah?
9 A. Whoever I talked to the first time, either
10 Carolyn or Kilgour, and I can't remember who I
11 talked to first. We really found out in depth
12 what the problem was at a meeting a couple days
13 later. I went to Lancaster. The guy worked
14 with me at the time.
15 Q. Who was the guy who worked with you at a time?
16 A. Bob Kaley, he was an analytical chemist by
17 training and he joined the staff.
18 Q. Just to digress for a moment, was Bob Kaley a
19 Ph.D.?
20 A. Yes.
21 Q. How long did Dr. Kaley work with you?
22 A. Oh, God, I don't know. When I left he was my
23 successor, so he was there eight or ten years,
24 something like that. It was '85, '86 and he was
25 there before that.

1 Q. And BJ Gilhousen, who is that?
2 A. He was our environmental counsel. Tom is -- I
3 don't know how you divide it -- well, litigation
4 and environmental, I guess.
5 Q. Who is WJ McCarville?
6 A. He was my immediate supervisor.
7 Q. What was his position at the time?
8 A. I forget what his exact title would be, sort of
9 director of regulatory affairs or something like
10 that. He had two or three groups. Mine was one
11 of them.
12 Q. How about JH Senger, S-E-N-G-E-R?
13 A. He was the vice president of environmental
14 affairs. McCarville reported directly to him.
15 Q. On the second page, roughly the middle of the
16 page, the paragraph begins, John and I were
17 introduced into a meeting -- there is a
18 reference three lines down to we gave them the
19 ACSH green book. What is that?
20 A. American Council on Science and Health, which is --
21 an independent group that addresses all types of
22 science medical issues. They have done
23 everything from breast feeding babies to
24 toxicity of various chemicals such as aspirin.
25 PCBs is one of them. They had published a

Page 73

1 booklet on PCBs summarizing the health effects.
2 We gave them a copy of that. That was probably
3 the most recent document that reviewed the
4 health effects of PCBs at the time.
5 Q. There is a reference to we, referring to -- this
6 is Dr. Kaley referring to he and you, also
7 participated in discussions of options available
8 at Armstrong. What is your recollection of the
9 options that existed at the time at Armstrong?
10 MR. DiMURO: Object to the form.
11 A. Well, my recollection is they were really
12 wondering what to do and how to handle a problem
13 like this. This had become a very high profile
14 problem, sort of a media event, and they were
15 saying what would you do. And Monsanto's option
16 is to get out in front, answer any questions
17 that you have, make all the information
18 available that you have, try to put it in proper
19 perspective. You can always be on the defensive
20 to have it come back piecemeal information, and
21 one option is to just get out front, tell
22 everybody what you know about the problem, what
23 information you have about anything, information
24 about the chemicals involved, information about
25 whatever the situation is. So that's probably

Page 74

1 the major option. That's what I remember
2 talking to them about primarily is what would
3 you do and how would you do it.
4 Q. What did you or Dr. Kaley offer as comments with
5 regard to those options?
6 MR. DiMURO: Object to the form.
7 A. Well, it says, you know, we would make as much
8 information available. We would talk about how
9 you put together a question and answer sheet or
10 something like a Backgrounder. I did suggest to
11 them they ought to get an independent consultant
12 to look at this and suggested Ray Harbison who's
13 very good at risk assessment. He's a
14 toxicologist well-known in the field, well
15 respected. He's done a lot of work for EPA as
16 well as private industry. He's a good man.
17 People like Harbison are good if you have a
18 community response. Harbison is very good at
19 going in and talking to people, answering
20 questions, allaying fears, getting the facts
21 straightforward. I don't remember specifics of
22 what we talked about. I'm looking at these
23 notes. That's about it.
24 Q. Do you have any recollection about discussions
25 that related to the implications of various

Page 75

1 testing programs?
2 A. No, I guess the one thing is, that we always
3 did, is any time people were doing any kind of
4 samples analysis we wanted to make sure that we
5 were involved in the sampling and analysis, knew
6 how it was being done, what methodology was
7 being used, what laboratory was being used, make
8 sure proper controls, blanks, standards and all
9 this stuff was used. It's very difficult to
10 analyze for PCBs especially in small quantities
11 and to identify them. And so, you know, the one
12 thing you want to do is any time you have a
13 testing program is make sure the samples are
14 taken properly, it's a statistical sampling
15 program and that the methodology is good
16 methodology and that proper standards are used.
17 Otherwise you just don't know what you've got.
18 Q. Did you or Dr. Kaley make any specific
19 recommendations with regard to testing that
20 should be done?
21 A. Not that I recall. I don't see anything in
22 this. need just to make sure that that's done.
23 Q. There is a reference in the last paragraph to,
24 we were also asked to participate in a
25 walk-through of the college building, but we

Page 76

1 responded that we would not be able to commit to
2 that without consulting with our environmental
3 attorney. Why was it necessary to consult an
4 environmental attorney?
5 MR. DiMURO: I would just caution the
6 witness not to disclose any conversations he
7 might have had with the Monsanto environmental
8 attorney, whether inside counsel or outside
9 counsel, but subject to that you can answer the
10 question.
11 A. I think that we probably didn't go because we
12 didn't have the opportunity to discuss with any
13 of Monsanto's legal representatives and who
14 knows what the implications would be for this.
15 It's one thing, you can give general advice or
16 something like that, but to be asked specifics,
17 just, I don't know what our involvement would
18 have been or would not have been just as a
19 matter of policy we didn't get -- we provided
20 general information, published information,
21 things that were known. But as far as getting
22 into the specifics or somebody's particular
23 problem, we didn't do that as a matter of policy
24 without first discussing with our in-house
25 counsel, and there was no opportunity to do that

Page 77	Page 79
1 since we were at that meeting there. 2 Q. When you say it's a matter of policy, is that a 3 written policy? 4 A. No. 5 Q. Is that a policy that's discussed as part of the 6 training for people who are in that area? 7 A. Well, it's part of the training that I had when 8 I was in that area because I was a chemist in a 9 world full of all kinds of people. And you 10 know, I did not know what legal ramifications, 11 you know, came of certain actions. I mean, the 12 things I did I had discussed previously with 13 counterparts in the legal department at 14 Monsanto, whatever else, is to make sure I 15 didn't make commitments that couldn't be 16 honored. 17 Q. And were you responsible for training Dr. Kaley 18 when he became your assistant? 19 A. Yes. 20 Q. What did you tell Dr. Kaley specifically in this 21 regard? 22 A. I don't recall. I probably said, you know -- 23 MR. DiMURO: I don't want you to 24 guess, Dr. Craddock. If you have a specific 25 recollection of what you said to Dr. Kaley, you	1 deleted. 2 MR. TURET: I'm sorry? 3 MR. DiMURO: Mr. Senger has been 4 deleted. 5 Q. What are the enclosures to this letter? 6 A. The first three pages are an example of what a Q 7 and A is. We discussed with them that they 8 should be prepared to provide as much 9 information as possible and showed them how we 10 did it. We put together questions about, you 11 know, somebody would ask a question, what if 12 they ask you this and you sit down and think 13 about an appropriate answer and then we would 14 write these down. So we would have thought 15 about them in advance. The second part is a 16 copy of the Monsanto Backgrounder that we talked 17 about before which is the document we put 18 together, general background information about 19 PCBs, which is generally available to be 20 transmitted to anybody who has a question about 21 PCBs who's contacted Monsanto. 22 Q. For the record, I note this is all stapled 23 together and I believe it was as produced to 24 us. There is no reference in the letter to 25 anything other than the sample questions and
Page 78	Page 80
1 can give it to Mr. Turet. 2 A. I don't recall. It's been a long time ago. I 3 don't recall the specifics. 4 Q. All right. 5 (Letter dated 4/8/86 6 marked as Exhibit No. 13 7 for identification.) 8 Q. For the record, Craddock 13 is an April 8, 1986, 9 letter from Dr. Kaley to Mr. Robert Kilgour, 10 K-I-L-G-O-U-R, at Armstrong, Bates numbered MAE 11 059152 through 162 and has enclosures. Dr. 12 Craddock, have you seen the document that's been 13 marked as Craddock 13 before today? 14 A. Yes. 15 Q. And do you understand that's a letter from Dr. 16 Kaley to Bob Kilgour of Armstrong on or about 17 April 8 of '86? 18 A. That's correct. 19 Q. And you're listed as a CC down at the bottom? 20 A. Right. 21 Q. Again, with the same lineup as in the last 22 letter except Larry O'Neill from the public 23 relations department has been added? 24 A. Correct. 25 MR. DiMURO: Mr. Senger has been	1 answers. Do you have any knowledge one way or 2 the other, Dr. Craddock, whether the 3 Backgrounder was included? 4 A. I don't have any specific knowledge that it 5 was. But what does the letter say, let me read 6 the letter. I agree from looking at the carbon 7 copies, I assume there was, because Larry 8 O'Neill put together the Backgrounder and he is 9 carboned on the list in case he gets some 10 questions from these people. 11 Q. When you were contacted by a customer or you 12 learned that a customer had a PCB problem, did 13 you customarily have the PR department put 14 together a list of sample questions and answers? 15 MR. DiMURO: I'll object to the 16 form. 17 A. No. Generally the problems that, or questions 18 that came in didn't require that. The Armstrong 19 thing was a special case. It was a high 20 visibility news media event, and those are the 21 kind of things that you would anticipate you're 22 going to get lots of questions from. So knowing 23 that, you ought to think about them in advance. 24 That's the reason for that. 25 Q. I didn't ask you before. Can you tell me what

Page 81

1 your understanding of what the problem was at
2 Burlington Community College that prompted this
3 communication?
4 A. Which communication?
5 Q. Prompted the contact with Armstrong?
6 A. Well, the problem was that they had this fire at
7 the college, as I understand it they had this
8 fire at the college which they were cleaning up
9 and they thought everything had been cleaned up
10 and it was fine, and PCBs were discovered. And
11 the more they looked, they couldn't find a
12 source of the PCBs. They looked for electrical,
13 they looked for chemicals in the storeroom,
14 whatever it was, and so this raised the specter
15 of PCBs. Then the news media in New Jersey, and
16 by the way New Jersey at this time was
17 developing their own sets of PCB regulations
18 which were not necessarily going to parallel the
19 federal regulations, so it was a political issue
20 in the state of New Jersey as to how to tailor
21 that state's PCB regulations. So it became a
22 media event. And if I recall, there were things
23 in the paper where different people in the state
24 of New Jersey had been asked what they thought
25 about it or that made various statements about

Page 82

1 PCBs being found and some of them were
2 inflammatory, and it just sort of raised the
3 media awareness.
4 Q. On the first page of the proposed questions and
5 answers, I guess it says Page 39 at the top, the
6 very first page after that. There is the
7 question down at the bottom of the page, why all
8 the concerns about PCBs? Do they cause cancer?
9 And the answer states, the hazards of PCBs to
10 humans are greatly exaggerated, they are not
11 cancer causing agents, they are not deadly
12 toxins, and there is an analogy to common table
13 salt. Is this the same information that had
14 been in your letters to other customers?
15 MR. DiMURO: I'll object to the
16 form. What letters to what customers?
17 Q. Specifically the section of that answer that
18 begins with the hazards and ends with the
19 sentence, there has never been a single
20 documented case where PCBs caused serious
21 chronic human health problems, including cancer,
22 cardiovascular or neurological problems. Isn't
23 that the same substance that you put in your
24 letters to the EPA, for example?
25 MR. DiMURO: Object to the form.

Page 83

1 A. It's the same substance that I put into letters,
2 many response letters, yes.
3 Q. Response letters to customers?
4 A. EPA, to some of the letters you showed me today
5 to the member of Parliament, whatnot, Dolly
6 Katz.
7 Q. That was the Detroit Press?
8 A. Right.
9 Q. Did Armstrong periodically call -- let me
10 withdraw the question. Did you receive a call
11 from anyone at Armstrong after this April 8,
12 1986, meeting?
13 A. April 8 wasn't a meeting. The meeting was some
14 other time.
15 MR. O'CONNOR: The meeting was April
16 fourth.
17 MR. DiMURO: Are you asking if he got
18 a call after the April 2nd meeting at Armstrong?
19 A. There may have been a couple of calls but I
20 specifically don't recall. There was a
21 follow-up call that I remember later from Unger,
22 just to bring us up-to-date or something on
23 whatever it was. And I'm not sure I talked to
24 him, I think maybe Bob talked to him or
25 something like that, but they called

Page 84

1 periodically for a couple of months or so and
2 that was it.
3 Q. Coming out of the April 2nd meeting did you have
4 any specific understanding as to what Monsanto's
5 involvement would be, if anything, at BCC?
6 A. Yeah, my understanding was we would be happy to
7 provide any information we had on PCBs and
8 answer any questions they had, provide them with
9 any information we could.
10 Q. Was that the full extent of your expected
11 involvement of Monsanto in the activities at
12 BCC?
13 MR. DiMURO: Object to the form, his
14 understanding after the meeting?
15 Q. Yes.
16 A. My understanding after the meeting is that we
17 had committed we would provide them certain
18 information and we would try to do that and if
19 they had other questions we'd try to respond to
20 their questions. That was after this meeting at
21 April 2nd.
22 Q. Was that the full extent of what you expected
23 Monsanto's involvement would be at BCC?
24 MR. DiMURO: I'll object to the form
25 of the question.

Page 85

1 A. When you say -- what is my understanding of
2 Monsanto's full extent?
3 Q. Yes.
4 A. Yes, that's -- yeah, that's what I was asked to
5 do and that's what we committed to do and that's
6 what we would do.
7 Q. Did you understand that Armstrong would be
8 following up with Monsanto after that April 2nd
9 '86 meeting?
10 A. Yes.
11 Q. What was your understanding of why there was to
12 be follow-up and what form of following up it
13 would be?
14 A. My understanding is they would give us a call,
15 let us know what was happening and if they had
16 any other questions they wanted to ask, whether
17 it was how to do something or what to do, they
18 would ask these questions and we would try to
19 answer them, give them the best advice we could.
20 Q. Did you have any understanding as to whether
21 Armstrong was going to keep Monsanto apprised of
22 developments that were going on at BCC?
23 A. When you say understanding, I think that's one
24 of the things is they would let us know how
25 things were going, but it was no requirement

Page 86

1 either way. If they wanted more information, we
2 would certainly give them more information, and
3 let us know what developments were.
4 Q. Did you have any understanding as to whether
5 Armstrong was to consult Monsanto before
6 deciding to do anything in particular at BCC?
7 MR. DiMURO: Object to the form.
8 MR. TURET: What's your objection?
9 MR. DiMURO: The objection is are you
10 talking about his understanding after this
11 particular meeting or the next day? They met
12 again, you know they met again. You know they
13 were here on phone calls.
14 MR. TURET: I'm asking at different
15 points in time. Is that objectionable?
16 MR. DiMURO: I think it's
17 objectionable knowing that he's testified there
18 were certain calls made back and forth. If
19 you're going to ask him what he came away with,
20 I just want to be clear. I'm not telling him
21 not to answer the question. If you want his
22 understanding as of April 3rd or April 2nd on
23 his way back to Monsanto whether there was going
24 to be consultations between Armstrong and
25 Monsanto, he's testified three times, I think he

Page 87

1 said that he expected that there would be phone
2 calls, he would answer the questions and
3 Monsanto would continue to provide certain
4 information.
5 MR. TURET: I'm asking a different
6 question.
7 MR. DiMURO: It doesn't sound like
8 it's a different question.
9 MR. TURET: I don't care if you don't
10 think it's a different question.
11 MR. DiMURO: I do care because he's
12 not going to answer the same question over and
13 over and over just because you change one word
14 from correspondence to consult. I have an
15 objection to that. I'll let him answer the
16 question. I object to the form. You asked me
17 what my objection was and now I'm telling you.
18 Q. Do you remember my question?
19 A. Which question?
20 Q. The most recent one?
21 MR. DiMURO: If the court reporter
22 would read it back.
23 Q. I'll ask it again. Coming out of the April 2,
24 1986, meeting with Armstrong, did you have an
25 understanding as to whether or not Armstrong was

Page 88

1 going to consult Monsanto before making any
2 decisions as to how to proceed at BCC?
3 MR. DiMURO: Objection to the form.
4 A. What do you mean by consult?
5 Q. Did you have any understanding as to whether
6 Armstrong was going to seek approval of Monsanto
7 before any decisions were to be made as to
8 actions to be taken at BCC?
9 MR. DiMURO: I'm going to object to
10 the form of that question also.
11 A. No, Armstrong didn't have any ties to Monsanto's
12 actions with what they did. They made their own
13 decisions. We had nothing to do with any
14 decisions that they made. We could provide what
15 information we could, they could factor that
16 into their decision making, but they made the
17 decisions. We had no decision making capability
18 or we weren't responsible for their decisions in
19 any way.
20 Q. What was the next communication that you can
21 remember with Armstrong?
22 A. I don't know. There was some phone calls and at
23 some point in time there was another meeting
24 several months later. I don't know the exact
25 date, probably the fall, something like that.

Page 89

1 Q. And just want to make sure I understand you.
2 Before the phone calls that came in between the
3 April 2nd, 1986, meeting and the second meeting
4 you've described, were they calls that went into
5 Dr. Kaley as opposed to you?
6 A. I don't know who they went into because the
7 phone calls came into one number. They came
8 into one phone number and whoever was there
9 answered the phone.
10 Q. Do you have any recollection of speaking with
11 anybody at Armstrong about the events at BCC
12 between the April 2nd, 1986, meeting and any
13 subsequent meeting?
14 A. I may have spoken to somebody, but I'm not
15 sure. I may have spoken to Kilgour once or
16 something, but I'm not sure.
17 Q. Do you have any recollection of what was
18 discussed with Mr. Kilgour if he did speak to
19 you?
20 A. No.
21 Q. Do you remember any information you received
22 from Dr. Kaley about his conversations with
23 Armstrong, if any, after this April 2nd, 1986,
24 meeting?
25 A. Yeah, I think Unger who is their highest level

Page 90

1 person called, he actually called for me one day
2 and I wasn't there and Kaley took the call, and
3 Kaley told me Unger called and it was an update
4 on what was going on, something to that effect.
5 There may be a correspondence file after that.
6 I don't know.
7 Q. Have you seen a telephone conversation report
8 that is dated between April 2nd of '86 and any
9 subsequent meetings that relate to a
10 conversation with Dr. Kaley?
11 A. Is that what you have in your hand?
12 Q. Yeah.
13 A. Is my name on the distribution list?
14 MR. TURET: Let's mark that as
15 Craddock 14.
16 (Memo dated 6/10/ 86
17 marked as Exhibit No. 14
18 for identification.)
19 Q. Mr. Craddock, have you seen the telephone
20 conversation report that's been marked as
21 Craddock 14 before today?
22 A. Most probably, yes.
23 Q. Does it, other than having read it just now,
24 does it refresh your recollection as to any
25 conversation that occurred between April 2nd of

Page 91

1 '86 and the subsequent meeting that you
2 referred to?
3 A. The details, I don't recall the details anymore
4 than what's here except I did know we had a
5 phone call from this high level guy that was
6 several months later.
7 Q. Dr. Craddock, do you remember anything about
8 ICF, Inc., who they were?
9 A. I think they were an EPA contractor, did all
10 kinds of data stuff for EPA from time to time.
11 Q. Do you remember specifically in connection with
12 this issue of BCC and Armstrong whether you were
13 contacted by ICF for information?
14 A. We were contacted by somebody for information,
15 but I don't know whether it's ICF or who.
16 Q. What information were you contacted for?
17 A. I think they wanted to know about usage of PCBs
18 in tiles or something like that.
19 Q. Did they want to know anything else specifically
20 as it relates to Armstrong?
21 A. They may have asked specifically about
22 Armstrong. If they did, we would as a matter of
23 rule have contacted Armstrong. We don't give
24 out customer information without the customer's
25 approval. It's just a matter of policy that

Page 92

1 we've had, considered confidential business
2 information. We have had that policy ever since
3 TSCA has been in. We don't provide information
4 on customers or through agencies or anybody
5 else. They have to go directly to the customer
6 to get it.
7 Q. Do you know if Armstrong ever gave Monsanto
8 approval to provide information about sales to
9 Armstrong to ICF? Did you understand my
10 question?
11 A. Yeah, I do. I don't recall Armstrong
12 specifically giving approval, but I don't
13 remember them not giving approval either. I
14 don't remember whether we provided the data.
15 Q. You don't remember whether you provided the
16 data?
17 A. (Witness nods.)
18 Q. Tell me about the other meeting that you've
19 referred to a couple times with Armstrong.
20 A. The one other meeting with Armstrong was a high
21 level meeting that I attended with Bob Potter
22 who was the -- I don't know what his title was
23 at the time, was he president of the chemical
24 company or whatever. He was essentially the
25 top, he and Tom Gossage and Tom Bistline and

Page 93

1 that was high level people including Caldwell, I
2 remember Rocky Caldwell at Armstrong.
3 Q. What is your understanding of what took place at
4 that meeting?
5 A. I think essentially Armstrong was asking Potter
6 to help them pay the cost of whatever their
7 clean up was or something like that.
8 Q. Do you have an understanding as to why Armstrong
9 was asking Monsanto to pay?
10 A. They were just trying to get another source of
11 funding as far as I know.
12 Q. Do you understand Armstrong's position at the
13 time? Did you understand Armstrong's position
14 at the time as to why it felt Monsanto should
15 contribute to the cost of the clean up at BCC?
16 MR. DiMURO: I'm going to object to
17 the form.
18 A. I'm not sure they stated a position as to why
19 that I heard, other than it was very expensive.
20 MR. TURET: Let's mark that as 15.
21 (Letter dated 9/16/87
22 marked as Exhibit No. 15
23 for identification.)
24 Q. Dr. Craddock, have you seen the document that's
25 been marked as Craddock 15 before?

Page 94

1 A. Yeah, I'm on the distribution list so I'm sure
2 I've seen it.
3 Q. Do you remember receiving a copy in or about
4 September of '87?
5 A. I don't specifically remember it, no.
6 Q. There is a reference in the last or second to
7 last sentence that we look forward to talking
8 about this again when you come back in October.
9 To the best of your knowledge, was there another
10 meeting in October?
11 A. Not that I know of.
12 Q. Would you agree with me that in this letter Mr.
13 Unger suggests to Mr. Potter that Monsanto
14 contribute to the cost of the remediation at
15 BCC?
16 MR. DiMURO: I'll object to the
17 form.
18 A. Yeah, he's certainly asking Potter for
19 assistance with the cost.
20 Q. Do you have any understanding as to whether
21 Monsanto responded to that request?
22 A. I haven't seen any response, but I would imagine
23 that Potter responded.
24 Q. Did you ever see a document that responded?
25 A. No, not that I recall.

Page 95

1 Q. Did you ever hear from Mr. Potter or Mr.
2 Bistline or Mr. Gossage that there was a
3 response?
4 A. No, not that I recall.
5 Q. Do you know if there were any communications
6 between Armstrong and Monsanto that followed
7 this letter on the issue of the request that
8 Monsanto contribute to the cost?
9 A. Not that I recall unless there is something in
10 the file.
11 Q. Is there any -- withdraw that question. Are you
12 aware of any further discussions between
13 Armstrong and Monsanto after September 16 of '87
14 relating to the events that were taking place at
15 BCC?
16 MR. DiMURO: Object to the form. You
17 can answer.
18 A. I don't remember anything else. And again, you
19 would have to look through the file.
20 Q. Is it fair to say, so I don't keep asking
21 questions and getting the same answer, that
22 you're not aware of any further letters or
23 communications of any sort with Armstrong after
24 September 16 of '87 on the issue of remediation
25 at BCC or costs?

Page 96

1 A. No, I don't recall any.
2 MR. TURET: I have no further
3 questions.
4 MR. O'CONNOR: Let me take a quick
5 break. I don't have a real lot.
6 (Brief recess.)
7
8 EXAMINATION
9 QUESTIONS BY MR. O'CONNOR:
10 Q. Dr. Craddock, my name is Brian O'Connor. I'm an
11 attorney in New Jersey and I represent the
12 plaintiffs in this case that have brought an
13 action against Armstrong World Industries for
14 exposure to PCBs at their workplace. The
15 allegation is that there were ceiling tiles in
16 place at the Burlington County College that
17 existed for approximately 14 or 15 years that
18 were coated with PCBs. Is that your
19 understanding of the basis of this lawsuit?
20 A. As far as I know.
21 Q. You understand that Armstrong World Industries
22 has brought in Monsanto Chemical Company as a
23 third-party defendant in this case?
24 A. Right.
25 Q. You had mentioned earlier that you have been

Page 97	Page 99
1 deposed before. How many times have you been 2 deposed? 3 A. I don't know, maybe half a dozen. 4 Q. Have you ever been deposed as a so-called fact 5 witness on behalf of Monsanto Chemical Company, 6 in other words, as a representative of Monsanto 7 Chemical Company? 8 A. That 30 B something, was that a fact witness, 9 Gerard -- yes. 10 Q. So on one other occasion you appeared as a 11 representative for Monsanto Chemical Company? 12 A. Yes. 13 Q. Have you yourself reviewed any documents prior 14 to today other than what Mr. Turet has shown you 15 today? 16 A. No. 17 Q. Were you shown any other documents by counsel? 18 A. No. 19 Q. When were you first contacted about this 20 particular case, this deposition? 21 A. I guess I was first contacted about this maybe 22 the end of the summer, just saying that I would 23 probably be asked to be deposed or subpoenaed to 24 be deposed or something like that, and I had a 25 letter a week or ten days ago saying when the	1 A. That's correct, yeah. 2 Q. And have you ever done any work at Monsanto by 3 way of research or just come across it in your 4 normal activities with regard to plasticizers 5 that contain PCBs? 6 A. Have I done any work with them? 7 Q. Right. 8 A. No. 9 Q. Are you familiar at all with plasticizers? 10 A. Yes. 11 Q. What is your familiarity if you can give me a 12 brief -- 13 A. Basically I know the textbook definition of 14 plasticizers, what they are, what they're used 15 for. I know Monsanto is a major manufacturer of 16 plasticizers and I've looked at technical 17 bulletins that describe what some of the 18 products are and what some of the formulations 19 are. 20 Q. You've also testified that you had some dealings 21 with Armstrong after Armstrong contacted 22 Monsanto about a fire that occurred at 23 Burlington Community College in the mid '80s; is 24 that correct? 25 A. That's correct.
Page 98	Page 100
1 deposition would be or trying to set up times. 2 Q. Now, you've authored some documents or had some 3 input in documents, Monsanto documents, that 4 have been marked this morning. And you've also 5 given us your opinion, your beliefs with regard 6 to PCBs and their causal relationship with 7 cancer; is that correct? 8 A. Correct. 9 Q. You yourself are not an expert in the causal 10 relationship between PCBs and cancer; correct? 11 A. That's correct. 12 Q. Your opinion and your beliefs are derived from 13 other documents, other studies performed by 14 toxicologists or pathologists; correct? 15 A. That's correct. 16 Q. So you don't hold yourself out as an expert on 17 the health effects of PCBs; correct? 18 A. No. 19 Q. If I was understanding your testimony this 20 morning correctly, you became involved with 21 quote, unquote, PCBs in or around 1980 at 22 Monsanto? 23 A. That's correct. 24 Q. And much of your work was geared toward the TSCA 25 regulations?	1 Q. Do you recall any specific conversations that 2 you had with any of the Armstrong people about 3 their use of Aroclor 1255 -- 1254 on ceiling 4 tiles? 5 A. What's the question again? 6 Q. Do you recall any specific conversations you had 7 with any Armstrong employees about Armstrong's 8 use of Aroclor 1254 on ceiling tiles? 9 A. Just the discussions as they came up in the 10 meeting we had on the Armstrong site, whatever 11 it was, about early April of that year we talked 12 about PCB sources being traced to the tiles and 13 general discussion about why PCBs would be used 14 in the tiles, what they were used for. 15 Q. That's what I'm looking to get at, the general 16 discussions as to why PCBs would be used on 17 ceiling tiles. Did you have any specific 18 discussions that you recall? 19 A. No. 20 Q. For instance -- 21 A. Just, you know, there are other plasticizers 22 that are better plasticizers for the type 23 plastic -- general discussion -- I guess I don't 24 remember any specific questions as to why you 25 would use them. They may have asked, they may

Page 101

Page 103

1 not. I don't know.
2 Q. Let me ask you, you said there were other
3 plasticizers that were available that were
4 better plasticizers as far as you know?
5 A. Well, a plasticizer is designed for a specific
6 plastic, so when you say a better plasticizer,
7 you mean better than what and for what use.
8 Q. Were there better plasticizers than the PCBs for
9 the ceiling tiles as far as you knew?
10 A. I guess in general I thought there probably were
11 because PCBs hadn't been used in any type of
12 ceiling tile that I knew of before. And
13 Armstrong didn't know of any uses in ceiling
14 tiles while they were grappling around trying to
15 find out what tiles they were in.
16 Q. Did you ask any of the Armstrong people why they
17 used Aroclor 1254 on ceiling tiles as a
18 plasticizer?
19 A. I don't recall asking that, no.
20 Q. Did you have any discussions with them about the
21 plastisol coating formulations they put on the
22 ceiling tiles?
23 A. No.
24 Q. Did you ask them if there were any other
25 suspected carcinogenic agents within that

1 on the ceiling tiles?
2 MR. TURET: Objection.
3 MR. O'CONNOR: What objection?
4 MR. TURET: What literature?
5 MR. O'CONNOR: I'm asking if he was
6 supplied with any literature; it's a simple
7 question.
8 MR. TURET: I made an objection for
9 the record. Go ahead and ask your question.
10 A. I don't recall getting any literature from
11 Armstrong about this.
12 Q. Verbally you were provided with no reason as to
13 why they used Aroclor 1254; correct?
14 A. Somewhere in the recess of my mind there was a
15 discussion as to -- and I don't remember even
16 who this was with -- as to why you would
17 probably use it and the answer that reoccurs is
18 probably for flame retardancy as a building
19 material.
20 Q. Did you see anything or have any discussion with
21 anyone at Armstrong that Aroclor 1254 was
22 utilized for aesthetic purposes?
23 A. No.
24 Q. Have you seen any literature generated by
25 Monsanto suggesting that Aroclor 1254 be used as

Page 102

Page 104

1 plastisol coating formulation?
2 A. No.
3 Q. Had you heard of dibenzyl furans when you went
4 out to Armstrong and met with them and discussed
5 the problem as you've described it?
6 MR. DiMURO: Objection to the form,
7 general knowledge concerning dibenzyl furans?
8 A. When you say dibenzyl furans you mean strictly
9 dibenzyl furans as a chemist would define it?
10 Q. Yes.
11 A. I've heard of dibenzyl furans, yes.
12 Q. Have you heard of dibenzyl furans found in
13 Aroclor 1254?
14 A. To my knowledge, there have been no dibenzyl
15 furans found in Aroclor 1254.
16 Q. You've never seen any documentation indicating
17 that?
18 A. No.
19 Q. Were you familiar at all with phosphate
20 plasticizers while you were at Monsanto?
21 A. I just know that Monsanto made phosphate
22 plasticizers and we sold formulations containing
23 organic phosphates.
24 Q. Were you provided any literature by Armstrong as
25 to why they used Aroclor 1254 as a plasticizer

1 a plasticizer for ceiling tile?
2 A. For ceiling tiles per se?
3 Q. Right.
4 A. I don't recall that. But I haven't gone through
5 all the technical bulletins.
6 Q. When you became involved with the PCBs at
7 Monsanto in 1980, did you have an opportunity to
8 go back and look at the history of Monsanto's
9 decision to stop making and distributing Aroclor
10 1254 and Aroclor 1260 and PCBs generally for
11 open uses?
12 A. Yes.
13 Q. What was your understanding as to why Monsanto
14 decided to do that?
15 A. Monsanto's original decision was that they would
16 stop manufacturing PCBs totally and there was a
17 hew and cry among the government's regulatory
18 people and among the electrical people that you
19 can't do this because you'll shut down electric
20 power distribution in the country. So then they
21 said, well, what can you do. Monsanto's
22 attitude was if PCBs were an environmental
23 problem we won't manufacture PCBs. So I think
24 the final resolution of the problem, I don't
25 know how and why it was, that Monsanto would

Page 105

1 stop selling PCBs for what were defined then as
2 open uses and they would only manufacture them
3 for closed and controlled uses which primarily
4 were electrical power transmission equipment.
5 So that was the decision.
6 Q. Was it your understanding that Monsanto had
7 decided to cease the manufacture and
8 distribution of PCBs for open uses in 1970?
9 A. About that time period, yes.
10 Q. And the decision to stop the manufacturing and
11 distribution of PCBs for any use including
12 closed uses was in or around 1977?
13 A. '76, '77 right.
14 Q. Were you aware that Monsanto contacted its
15 customers who had purchased Aroclor 1254 and
16 Aroclor 1260 and other PCBs for open uses back
17 in the early '70s?
18 A. Yes.
19 Q. Did you have an opportunity to review literature
20 with reference to boilerplate letters that went
21 out to various customers?
22 A. Yes.
23 Q. Did Monsanto have any type of procedure in place
24 to question their customers on what their
25 intended use for, say, Aroclor 1254 or Aroclor

Page 106

1 1260 was?
2 A. Not that I know of.
3 Q. So in other words, when the product was sold to
4 a customer, there was really no monitoring of
5 what that customer was going to do with that
6 particular product?
7 A. Prior to 1970 is that correct, '71, that time
8 frame.
9 Q. When you say prior to 1970, '71, there was a
10 change in policy with regards to PCBs after '70,
11 '71?
12 A. At that time period Monsanto stopped
13 manufacturing PCBs for open uses and agreed to
14 manufacture PCBs only for closed contained uses
15 for electrical equipment, primarily transformers
16 and capacitors.
17 Q. Do you know if Monsanto had significant concerns
18 with the use of the Aroclor 1254, Aroclor 1260
19 in an open use versus closed use?
20 MR. TURET: Objection.
21 MR. DAVIDSON: At what time?
22 MR. O'CONNOR: In or around the early
23 1970s?
24 A. Would you repeat that? There is something wrong
25 with your phrasing, something bothers me.

Page 107

1 Q. Let me see if I can rephrase it. Do you know
2 whether or not Monsanto had serious concerns
3 about the uses of Aroclor 1254 and Aroclor 1260
4 in open uses versus closed uses?
5 MR. DAVIDSON: What time period?
6 MR. O'CONNOR: In the early '70s.
7 MR. TURET: Objection.
8 A. Monsanto had concern about use of PCBs for open
9 uses because of the environmental persistence.
10 Q. When you say environmental persistence, what do
11 you mean by that?
12 A. PCBs remain in the environment for a long time.
13 They biodegrade, but very slowly.
14 Q. Don't they get caught up in the food chain?
15 A. They may get caught up in the food chain, they
16 may not.
17 Q. Can't they be eventually passed on to humans?
18 A. They may be.
19 Q. And with regards to open uses, didn't Monsanto
20 have a concern that the ultimate user couldn't
21 control the material from entering the
22 environment?
23 A. I don't know specifically what the concern was
24 as to who controlled, I don't recall that.
25 Q. Well, earlier you gave us your beliefs and your

Page 108

1 opinions on the relationship between PCBs and
2 cancer based on epidemiological studies that you
3 had reviewed and other studies. And some of the
4 materials references Dr. Kimbrough's studies at
5 the National Cancer Institute?
6 A. Right.
7 Q. Did you review studies from IBT?
8 A. No.
9 Q. Do you know who IBT is?
10 A. Yes.
11 Q. You never in your employment at Monsanto went
12 back and took a look at those tests?
13 A. Well, when you say review them, I have seen the
14 documents, the IBT reports. I've read the
15 conclusions. I've read the studies, but as far
16 as review, in my context, a scientific reviewer
17 is somebody who is looking at the details of the
18 study, the format and all that kind of stuff.
19 In that context I did not review the studies. I
20 read those studies and looked at some of the
21 conclusions.
22 Q. Would you agree with me that PCBs -- Monsanto
23 did not contemplate that PCBs would be ingested
24 by humans?
25 MR. DiMURO: Objection to the form.

Page 109	Page 111
1 You can answer. 2 A. Monsanto did not intend for PCBs to be ingested 3 by humans. I don't know, when you said 4 contemplate, that's why you do LD 50 studies 5 because somebody may ingest something, but their 6 intended use was not for ingestion. 7 Q. Their intended use was not for inhalation 8 either; correct? 9 A. That's correct. 10 Q. And Monsanto did not intend that human beings 11 would have skin contact with PCBs either; 12 correct? 13 MR. DiMURO: Object to the form. You 14 can answer, Dr. Craddock. 15 A. I don't know whether they intended for you to 16 have skin contact. I'm not sure whether they -- 17 you could have inadvertent skin contact. You 18 can have inadvertent inhalation. These are 19 different from deliberate manufacture of a 20 product that is to be applied to the skin or to 21 be ingested. 22 Q. Have you ever seen any literature generated by 23 Monsanto for the handling of the Aroclors with 24 reference to the Aroclor being toxic? 25 A. Talking about the pure Aroclor as an industrial	1 I've seen numbers published as to what they 2 found in carpet or whatnot, but as far as 3 relating it to exposure, I've seen nothing like 4 that. 5 Q. You've seen nothing with regards to the alleged 6 duration of the exposure; correct? 7 A. Duration, no. 8 Q. Do you know whether or not any of the levels 9 found at the school exceeded NIOSH minimum 10 standards? 11 A. They may have exceeded NIOSH. I don't think 12 they exceeded OSHA. NIOSH standards were 13 published in the early '70s. They were very 14 stringent standards based on theoretical 15 calculations that not a lot of people agreed 16 with. As a matter of fact, a lot of regulations 17 were written that didn't include NIOSH 18 standards, included OSHA standards but not NIOSH 19 standards. 20 Q. After TSCA was passed and put into place around 21 1979, did Monsanto endeavor to contact its 22 customers that it had sold PCBs to about TSCA 23 itself? 24 A. Not that I recall. 25 Q. Why was it that Monsanto decided to cease the
Page 110	Page 112
1 chemical? 2 Q. Yes. 3 A. Yes, I've seen the warning labels and the 4 information published, yes. 5 Q. Have you seen anything where it describes 6 Aroclor as being noxious? 7 A. Noxious, I haven't seen that term used, noxious, 8 no. 9 Q. In this particular case with regards to the 10 Burlington County College incident, when you 11 went out to Armstrong, you came back, you had a 12 couple of phone calls and then there was another 13 contact; correct? 14 A. Correct. 15 Q. After that, after the late '80s did you have any 16 more contact at all with Armstrong about that 17 incident? 18 A. Not that I recall, no. 19 Q. So it's fair to say that you have no idea as to 20 what the levels of PCBs -- what levels of 21 exposure are being alleged; correct? 22 MR. DiMURO: Object to the form. 23 MR. TURET: Object to the form. 24 MR. DiMURO: You can answer. 25 A. I don't know what the alleged exposure was.	1 manufacture and distribution of PCBs for closed 2 uses prior to the passage of TSCA? 3 A. I don't think I know an answer to that 4 question. 5 Q. The epidemiological studies that you made 6 reference to and specifically the study of Dr. 7 Gaffey, is that correct, Gaffey? 8 A. That's correct, Gaffey. 9 Q. You had asked him to review the epidemiological 10 studies that had existed with regard to PCBs and 11 cancer as of September 15, 1981; correct? 12 A. It might have been earlier than that, but in 13 that time frame. 14 Q. You would agree with me that there are certain 15 health hazards associated with exposure to PCBs; 16 correct? 17 MR. DiMURO: I'll object to the 18 form. You can answer. 19 A. There are certain health hazards that are 20 alleged from PCB exposure. I'm not sure I agree -- 21 that they're hazards. In my mind hazard is in 22 the eye of the beholder, I think. 23 Q. You've heard the term, chloracne? 24 A. Yes. 25 Q. You have heard of dermatitis being caused by

Page 113

1 exposure to PCBs?
2 A. Yes.
3 Q. You've heard about abnormalities of the liver;
4 correct?
5 A. I've heard of those things, but I'm not sure
6 which of those are directly attributable to
7 PCBs.
8 Q. Have you ever seen any literature authored by
9 Monsanto itself that describes long time
10 exposure can cause yellow atrophy of the liver?
11 A. I don't remember that, no.
12 Q. Well, Dr. Gaffey notes that exposure to PCBs can
13 cause alterations in the liver. Didn't he find
14 that as part of his studies?
15 A. I would have to reread the studies. It's been a
16 long time, but I know it causes changes in
17 certain liver functions. I don't know exactly
18 what those are.
19 Q. The epidemiological studies that somebody
20 performed in the '90s, have you kept abreast of
21 them with regard to PCBs and cancer?
22 A. No, not in detail.
23 Q. It's not anything you followed?
24 A. Not anymore.
25 Q. Let me ask you, you made reference to a new

Page 114

1 report that came out with reference to breast
2 cancer and PCBs. Did you actually read that
3 published report?
4 A. No.
5 Q. Just saw something about it in the paper?
6 A. I think it's on NBC news as well as the paper.
7 Q. Are you aware if Monsanto ever made any efforts
8 to contact actual ultimate users of products
9 that contained Aroclors after the passage of
10 TSCA?
11 A. Not to my recollection, no.
12 Q. How about before TSCA?
13 A. Before TSCA Monsanto made efforts to contact our
14 customers. Now, I don't know what you mean by
15 ultimate users. Customers made products,
16 whatever, is that your ultimate user -- I don't
17 know what you mean by ultimate user.
18 Q. Were you familiar at all with the use by silo
19 manufacturers of Aroclor 1254 in the paints they
20 placed on silos, grain silos?
21 A. Yes, I'm familiar with that use.
22 Q. Do you know if Monsanto went out and contacted
23 the manufacturer of those silos?
24 MR. DiMURO: I'll object to the
25 form.

Page 115

1 A. I don't know that Monsanto contacted the
2 manufacturer of the silos. I don't know if
3 Monsanto knew that paints were used in silos. I
4 don't know even know Monsanto knew the Aroclors
5 were used in paints.
6 MR. O'CONNOR: I don't have anything
7 further.
8 MS. O'CONNOR: My turn?
9 MR. DiMURO: Yes.
10
11 EXAMINATION
12 QUESTIONS BY MS. O'CONNOR:
13 Q. Mr. Craddock, my name is Carolyn O'Connor. I
14 have a few short questions for you. Do you have
15 any familiarity with a company known as American
16 Mineral Spirits Company?
17 A. No.
18 Q. During your employment with Monsanto did you
19 ever have any contact with the distributors of
20 PCBs for Monsanto?
21 A. Did I ever have contact with distributors of
22 PCBs for Monsanto.
23 Q. Right?
24 A. Not that I recall.
25 Q. Okay. Are you aware of any companies that

Page 116

1 supplied Aroclor 1254 manufactured by Monsanto
2 to others?
3 A. I know there were distributors prior to the '70,
4 '71 cutoff, but I don't know who they were.
5 Q. Okay. Did you have any -- did you make any
6 efforts in your various positions at Monsanto to
7 convey any of the public awareness information
8 that you've testified to this morning to any of
9 those distributors?
10 A. Only if they requested it.
11 MS. O'CONNOR: I have no other
12 questions. Thank you.
13 MR. DiMURO: I have a couple of
14 questions.
15 MR. TURET: Go ahead. I'll go after
16 you.
17 MR. DiMURO: I believe it goes around
18 to him again.
19 MR. DAVIDSON: We don't have any
20 questions right now.
21 MR. TURET: I have a couple questions
22 right now and I may have others after you go.
23
24 EXAMINATION
25 QUESTIONS BY MR. TURET:

Page 117 1 Q.Dr. Craddock, you were a research chemist; 2 correct? 3 A. You say I was? 4 Q. Yes? 5 A. Yes, I was. 6 Q. And as a research chemist, you never worked on 7 plasticizers, did you? 8 A. No. 9 Q. That is true as a senior research chemist and a 10 group leader et cetera, you never worked on 11 plasticizers; correct? 12 A. That's correct. 13 Q. Did you ever do any work with applications for 14 plasticizers as a researcher at Monsanto? 15 A. No. 16 Q. Did you ever do any analytical work on 17 properties of plasticizers? 18 A. No. 19 Q. You made a comment before that there are other 20 plasticizers that are better for use on ceiling 21 tiles, and then you made some other comments 22 that I wasn't sure about. Is it your belief 23 that there are other plasticizers that are 24 better than Aroclor 1254 for use in the 25 particular plastisol formulation on the	Page 119 1 depends on the intended use and the conditions. 2 1254, from what I have read, was not a 3 particularly good plasticizer for just plastic 4 coatings so I don't know why that particular 5 plasticizer was used on ceiling tile. There 6 were probably, I would think there would 7 probably be other plasticizers that were better, 8 if it's for a plastic coating, plus other 9 plasticizers were generally used for plastics in 10 that kind of stuff. 11 Q. Do you have any knowledge as you sit here today 12 based on work that you've done of another 13 plasticizer in the lineup of Monsanto products 14 between '68 and '70 that would be better than 15 Aroclor 1254 for use on the ceiling tiles? 16 MR. DiMURO: I object to the form. 17 He doesn't know what the plasticizer formula 18 was. You haven't established that. It hasn't 19 been established what the ceiling tiles were 20 made of. You might want to ask him if -- 21 MR. TURET: I don't need 22 suggestions. Put your objection on the record. 23 MR. DiMURO: It's not suggestions. 24 You're asking an unfair question of this witness 25 who, to my mind you haven't established whether
Page 118 1 particular ceiling tiles that Armstrong used? 2 MR. O'CONNOR: Objection to form. 3 Are you asking him about the particular 4 plastisol formulation that was put on the tiles 5 in this instance? 6 Q. Let me rephrase. Do you have a view as to 7 whether there are better plasticizers 8 manufactured by Monsanto as of '68 through '70, 9 better than Aroclor 1254 for use on the ceiling 10 tiles? 11 MR. DiMURO: I'm going to object to 12 the form. 13 MR. TURET: He made that comment. 14 I'm going to ask what is his basis. 15 MR. DiMURO: I know he made a 16 comment. I object to the way you characterized 17 it. I think he said -- I'll let you ask another 18 question. 19 Q. Did I misunderstand you? Let me ask you 20 directly. I may have misunderstood what you 21 said. Did you say before that there were other 22 plasticizers that are better than Aroclor 1254 23 for use on ceiling tiles? 24 A. I really don't know what I said. We've had so 25 many questions about this thing. Plasticizer	Page 120 1 he knows what the plastisol coating was. You 2 haven't established what the elements of the 3 ceiling tile were. You haven't told him what 4 PCB resin based ceiling tile. 5 MR. TURET: This is a reaction to the 6 statement he made. 7 MR. DiMURO: The way I recall that 8 testimony is that he wouldn't have recommended 9 use on this substance. He didn't say ceiling 10 tile. I think you're asking him an unfair 11 question asking him generic ceiling tiles 12 without asking the witness whether he knows what 13 they were made of or what the plastisol coating 14 was, which would be a specific. 15 MR. TURET: There hasn't been any 16 discussion of the substance that came up in 17 connection with ceiling tiles. 18 Q. All I'm saying, Dr. Craddock, if you don't know, 19 you don't know. But if you're going to say 20 there was another better plasticizer for use on 21 an application, then I want to know what the 22 basis of your knowledge is. Tell me again. 23 MR. DiMURO: Ask the question. 24 Q. Do you have an opinion as you're sitting here 25 today that there was another plasticizer in the

Page 121

1 lineup of Monsanto products from 1968 to 1970
2 that would have been better suited to use on
3 ceiling tiles than Aroclor 1254?
4 MR. DiMURO: Objection to form.
5 A. I don't have any knowledge or any information
6 about what kind of plasticizers were used in any
7 ceiling tiles. I didn't even know plasticizers
8 were used on ceiling tiles until I went to
9 Armstrong that day and they had a problem. So I
10 don't know anything about it.
11 Q. That's fine. Dr. Craddock, the other thing I'm
12 not sure if I understood you correctly or not on
13 this one. Did I understand you to say that
14 before 1970 or 1971 there was no way Monsanto
15 could know what its customers' uses for
16 plasticizer products were?
17 A. There is no way Monsanto what could know what
18 all of its customers used its products for;
19 right.
20 Q. Do you know what a call report is?
21 A. Yea.
22 Q. What is a call report?
23 A. A call report is generally, in Monsanto terms,
24 it's where a salesman goes out and makes a call
25 on a purchasing agent or researcher and writes a

Page 122

1 report, sends it back to the general office.
2 Q. Have you seen call reports in your time at
3 Monsanto?
4 A. I've seen call reports in my time at Monsanto.
5 Q. Based on what you've seen, do call reports
6 sometimes refer to the uses that the customer is
7 -- to the applications that the customer is
8 using the Monsanto products for?
9 A. They might. They might be speculation as to
10 what the salesman thinks they're using it for,
11 and they might not have anything about what it's
12 being used for.
13 Q. Do you have any knowledge as to whether
14 salespersons are assigned to particular
15 customers?
16 A. In some business units salesmen are assigned to
17 a particular customer if the customer is big
18 enough, yes, sir.
19 Q. Where it's a big customer and you have a
20 salesperson assigned, do you know whether it's
21 frequently the case for a salesman to know what
22 the customer uses it for?
23 MR. DiMURO: Objection to the form.
24 A. When you say frequently, sometimes customers
25 won't tell you their proprietary formulations of

Page 123

1 what they want to use it for. They just ask
2 you, give me all the things you think will do
3 that and we will select one. Proprietary
4 products are very funny business. A lot of
5 times customers are actually so devious, they
6 will go to a distributor and buy a sample of
7 product so that you don't know what they're
8 using. But when it goes through a small
9 quantity for a distributor you never know what
10 the hell it's being used for. I can go buy a
11 five-gallon drum or 25-gallon pail or 55-gallon
12 drum and it's completely out of the system. The
13 distributor doesn't care what he's selling it
14 for. He's just moving it out the door and
15 marking it up, so you don't know.
16 MR. TURET: I have no further
17 questions.
18 MR. O'CONNOR: I have a couple
19 follow-ups.
20
21 EXAMINATION
22 QUESTIONS BY MR. O'CONNOR:
23 Q. I just have a brief couple of questions with
24 regard to what's been marked Craddock 1, PCB
25 Perspective which is a document you drafted in

Page 124

1 January of '81; correct?
2 A. Yeah, I think so.
3 Q. Let me show it to you.
4 A. Okay.
5 Q. I would like you to turn to Page 4, Doctor. And
6 I want you to take a look now at risk benefit.
7 And this document states: The risk benefit
8 issue with respect to PCBs is the key to the
9 whole PCB problem. Much soul searching is being
10 done to define these parameters for PCBs. The
11 benefit side of the equation is perhaps the
12 easier of the two to define. We know the
13 benefits of using nonflammable PCBs in certain
14 key and essential industries where technically
15 suitable replacements are not readily
16 available. We can calculate the benefit of
17 preventing fires and saving lives. Then it
18 lists several situations where PCBs would be
19 utilized to prevent catastrophes; correct?
20 A. Correct.
21 Q. And you go down a little further and it says,
22 how do we quantitatively measure risk. Risk of
23 human health hazard, risk of environmental
24 damage, et cetera, and compare them with the
25 benefits; correct?

Page 125

Page 127

1 A. That's correct.
2 Q. Did you have an expectation or did Monsanto have
3 an expectation that their customers when
4 utilizing PCBs would do a similar type of risk
5 utility benefit analysis?
6 MR. TURET: Objection.
7 A. In hindsight, I don't think we had any
8 expectation that they would do that. I don't
9 know what motivates a customer to put a product
10 on the market. Bigger companies do more things
11 than smaller companies do.
12 Q. Is this something that Monsanto took into
13 consideration when Monsanto made a decision on
14 how they were going to use PCBs?
15 A. Well, I don't know about PCBs. The use of PCBs
16 was before my tenure. In general with products
17 Monsanto weighed the benefits and risks
18 absolutely. That's why you do testing to see
19 what types of problems might exist.
20 Q. And that analysis, of course, applied to open
21 uses as well as closed uses; correct?
22 A. Yes.
23 Q. Where did you get this information to come up
24 with this so-called risk benefit issue, this
25 little section contained on Pages 4 and 5 of the

1 A. I've lost the first part of the question.
2 MR. O'CONNOR: Would you read that
3 back, please?
4 (Question read.)
5 A. I don't know. I don't know anything about PCBs
6 in ceiling tiles.
7 MR. O'CONNOR: I have nothing
8 further.
9 MS. O'CONNOR: Nothing further.
10 Thank you.
11 MR. DiMURO: I have a couple of
12 questions.
13 I would like to have marked as
14 Exhibit 16 a July 25, 1986, letter from Mr.
15 Craddock to Mr. Mark Wagner of ICF. It's two
16 pages long. I'll represent this document was
17 produced during the course of discovery, that
18 the copy I have does have MAE numbers, it's MAE
19 059149 to 150. And the copy that Mr. Turet has
20 handed me looks to my eye to be exactly the same
21 as the copy I have, so I will use the copy Mr.
22 Turet has because it's marked.
23 (Letter dated 7/25/86
24 marked as Exhibit No. 16
25 for identification.)

Page 126

Page 128

1 document authored by you?
2 A. What do you mean where did I get this
3 information?
4 Q. Where did you come up with the idea that the
5 risk benefit issue with respect to PCBs is the
6 key to the whole PCB problem?
7 A. Because that's what's strictly been talked about
8 in the media and papers is why would you make
9 such a product. And you make such a product
10 because there was a benefit as well as a risk.
11 Why would you make an automobile? My God,
12 people are killed like flies every day in
13 automobiles. There is a great benefit in being
14 able to drive across town at 30 miles an hour
15 rather than walk at three. You take that risk.
16 Q. Did anyone at Monsanto as far as you know look
17 at the risks associated with putting Aroclor
18 1254 to open uses such as on ceiling tiles
19 versus the risk of human health hazard?
20 MR. DAVIDSON: At a given time?
21 MR. O'CONNOR: At a given time.
22 MR. DAVIDSON: What time?
23 MR. O'CONNOR: Any time.
24 MR. TURET: Objection.
25 MR. DiMURO: Object to the form?

1 EXAMINATION
2 QUESTIONS BY MR. DiMURO:
3 Q. Dr. Craddock, if you would read through that
4 document. Dr. Craddock, is that your signature
5 on what's been marked as Craddock 16?
6 A. Yes.
7 Q. There was a suggestion before by Mr. Turet that
8 Monsanto might not have had the approval to
9 release sales summary information to ICF, Inc.
10 After taking a look at Craddock 16, does it
11 refresh your recollection as to whether
12 Armstrong authorized Monsanto to release
13 information, sales information on the Aroclors
14 to ICF?
15 MR. TURET: Objection to form. There
16 was no such suggestion.
17 Q. If there was a suggestion, does this document
18 refresh your recollection as to whether
19 Armstrong authorized Monsanto to release sales
20 information on the Aroclor 1254 to ICF, Inc.?
21 A. Yes, this document states that I discussed the
22 release of information with Armstrong who were
23 agreeable to providing the data for the EPA
24 contact.
25 Q. Do you know who you might have discussed that

Page 129

Page 131

1 with at Armstrong?
2 A. I would imagine Phil Unger because he got a
3 carbon copy of this.
4 Q. Other than the release of this information to
5 ICF, do you remember having any other contact
6 with Mr. Wagner concerning the alleged problem
7 at Burlington County College?
8 A. No.
9 Q. Do you know if Mr. Kaley had any contact with
10 Mr. Wagner?
11 A. I don't know.
12 Q. At that first meeting with -- at the April 2nd
13 meeting with Armstrong, that meeting was only
14 attended by you and Mr. Kaley on behalf of
15 Monsanto?
16 A. That's correct.
17 Q. And I'm going to show you what's been previously
18 marked as Craddock 12. It is the memo summary
19 written by Dr. Kaley on the April 2nd meeting.
20 I would like to direct your attention to the
21 last page which indicates who attended that
22 meeting on behalf of Armstrong and ask you to
23 take a look at those names, just tell me when
24 you're done.
25 A. Okay.

1 STATE OF _____)
2 COUNTY OF _____)
3 I, JOHN H. CRADDOCK, do hereby certify:
4 That I have read the foregoing deposition;
5 That I have made such changes in form
6 and/or substance to the within deposition as
7 might be necessary to render the same true and
8 correct;
9 That having made such changes thereon, I
10 hereby subscribe my name to the deposition.
11 I declare under penalty of perjury that
12 the foregoing is true and correct.
13 Executed this _____ day of
14 _____, 1997,
15 at _____,
16 _____
17 _____
18 NOTARY PUBLIC
19 _____
20 My Commission expires: _____
21 _____
22 _____
23 _____
24 JOHN H. CRADDOCK
25 _____

Page 130

Page 132

1 Q. Do you remember any of these people calling you
2 after the April 2nd meeting to discuss with you
3 any part of the situation at Armstrong?
4 A. No. I mentioned that I thought maybe I had
5 talked to Kilgour. He would be the only one and
6 Unger had talked to Kaley.
7 Q. Do you remember meeting Mr. Collins Bushnell at
8 the meeting on April 2nd?
9 A. No.
10 Q. Do you recall meeting anybody from the research
11 and development department at Armstrong?
12 A. No.
13 Q. Do you remember a gentleman named Mitchell
14 Bernstein? He's indicated here on Craddock 12
15 as outside environmental counsel. Do you
16 remember that?
17 A. No, I don't remember him.
18 Q. Do you have any reason to believe this list of
19 people here who attended the meeting is
20 inaccurate in any way?
21 A. No, I thought maybe Carolyn Kent was there but
22 -- if she were there, Kaley would have
23 documented it, I'm sure
24 MR. DiMURO: I have nothing else.
25 MR. TURET: I'm done.
(Witness excused)

1 CERTIFICATE OF REPORTER
2 STATE OF MISSOURI)
3) SS
4 COUNTY OF ST. LOUIS)
5 I, NANCY A. KUNCAITIS, a Registered
6 Professional Reporter and Notary Public in and
7 for the State of Missouri, the officer before
8 whom the foregoing deposition was taken, do
9 hereby certify that the witness whose testimony
10 appears in the foregoing deposition was duly
11 sworn by me; that the testimony of said witness
12 was taken by me to the best of my ability and
13 thereafter reduced to typewriting under my
14 direction; that I am neither counsel for,
15 related to, nor employed by any of the parties
16 to the action in which this deposition was
17 taken, and further that I am not a relative or
18 employee of any attorney or counsel employed by
19 the parties thereto, nor financially or
20 otherwise interested in the outcome of the
21 action.
22 _____
23 NOTARY PUBLIC in and for the
24 State of Missouri
25 My commission expires 11-22-01

-*-	123 [1] 1:5 1254 [24] 100:3,8 101:17 102:13,15,25 103:13,21 103:25 104:10 105:15,25 106:18 107:3 114:19 116:1 117:24 118:9,22 119:2,15 121:3 126:18 128:20 1255 [1] 100:3 1260 [5] 104:10 105:16 106:1,18 107:3 127 [1] 1:16 128 [1] 1:5 13 [7] 1:15 21:10,24 42:5 78:6,8,13 13th [1] 2:12 14 [5] 1:15 90:15,17,21 96:17 1400 [1] 3:12 15 [12] 1:16 28:3 49:10 51:7 54:22 55:2 57:9 93:20,22,25 96:17 112:11 150 [1] 127:19 16 [8] 1:16 51:7 95:13,24 127:14,24 128:5,10 162 [1] 78:11 17 [1] 45:12 19 [1] 60:12 19103-7396 [1] 3:18 1930 [1] 37:2 1958 [1] 5:23 1961 [3] 6:1,22 8:19 1962 [1] 9:21 1965 [2] 8:3,20 1966 [1] 10:14 1968 [1] 121:1 1970 [7] 10:15,22 105:8 106:7,9 121:1,14 1970s [2] 60:13 106:23 1971 [1] 121:14 1972 [1] 60:15 1973 [2] 11:5 25:4 1976 [1] 13:5 1977 [6] 12:10 13:4,5 18:22 37:2 105:12 1978 [1] 13:23 1979 [3] 18:25 65:16 111:21 1980 [10] 19:24 21:6,7 26:1 34:7 65:6,8 68:11 98:21 104:7 1981 [6] 33:19 37:16 38:4 52:19 65:8 112:11 1982 [5] 45:12 46:9 47:20 54:22 57:10 1986 [7] 78:8 83:12 87:24 89:3,12,23 127:14 1993 [2] 20:6 21:8 1997 [2] 2:13 131:14 1st [1] 20:6	2 [6] 1:9 41:22,24 62:1 65:15 87:23 20 [1] 28:3 215 [1] 3:18 21927 [1] 3:12 22 [1] 33:20 25 [3] 47:20 48:8 127:14 25-gallon [1] 123:11 257 [1] 33:10 27 [1] 55:8 27420 [1] 3:13 2nd [14] 83:18 84:3,21 85:8 86:22 89:3,12,23 90:8,25 129:12,19 130:2 130:8	639-7298 [1] 3:10 64 [1] 1:13 65 [1] 1:14	actual [1] 114:8 acute [6] 38:21 46:15 57:20 62:2,5,13 ad [1] 8:23 added [1] 78:23 adding [1] 15:6 addition [2] 22:2 43:6 additional [2] 15:17 63:16 additives [2] 14:14 15:11 address [3] 22:22 26:11 48:3 addressed [2] 22:9 41:25 addresses [1] 72:21 addressing [1] 57:18 Administration [1] 14:15 admitted [1] 5:17 advance [3] 56:3 79:15 80:23 advice [2] 76:15 85:19 advocate [1] 30:13 aesthetic [1] 103:22 affairs [3] 55:6 72:9,14 afternoon [1] 2:15 again [15] 10:19 12:6,25 24:7 51:7 57:18 78:21 86:12,12 87:23 94:8 95:18 100:5 116:18 120:22 against [3] 28:22 31:16 96:13 age [1] 4:10 agencies [16] 14:13,21 15:18,20,23 16:2,11 21:19 28:21 41:8 43:3 52:3 60:17,19,24 92:4 agency [2] 14:22,23 agent [1] 121:25 agents [3] 41:10 82:11 101:25 ago [4] 46:18 56:9 78:2 97:25 agree [12] 46:11,21 58:5 66:5,12,15,17 80:6 94:12 108:22 112:14,20 agreeable [1] 128:23 agreed [8] 4:1 41:3,20 44:16 46:8 57:22 106:13 111:15 Agriculture [3] 14:16 15:3 16:11 ahead [2] 103:9 116:15 ain't [1] 54:14 air [1] 36:25 al [2] 2:4,22 allaying [1] 74:20 allegation [1] 96:15 allegations [2] 20:23 29:2 alleged [10] 23:12,13,17 23:20 54:14 110:21,25 111:5 112:20 129:6
'68 [2] 118:8 119:14 '70 [5] 10:18 106:10 116:3 118:8 119:14 '70s [3] 105:17 107:6 111:13 '71 [6] 10:18,22 106:7,9 106:11 116:4 '73 [1] 12:6 '75 [1] 12:16 '76 [4] 12:16 13:7 17:18 105:13 '77 [5] 12:9 13:7,8,13 105:13 '78 [3] 13:8,13 18:22 '80 [2] 27:14,14 '80s [4] 34:14 67:11 99:23 110:15 '81 [7] 27:14,15 33:20 41:13,14 42:5 124:1 '82 [2] 48:9 55:3 '85 [2] 67:12 70:24 '86 [6] 67:12 70:24 78:17 85:9 90:8 91:1 '87 [3] 94:4 95:13,24 '90s [1] 113:20 '92 [1] 54:12 '93 [4] 20:7,11 38:12 54:12	125 [1] 1:5 1254 [24] 100:3,8 101:17 102:13,15,25 103:13,21 103:25 104:10 105:15,25 106:18 107:3 114:19 116:1 117:24 118:9,22 119:2,15 121:3 126:18 128:20 1255 [1] 100:3 1260 [5] 104:10 105:16 106:1,18 107:3 127 [1] 1:16 128 [1] 1:5 13 [7] 1:15 21:10,24 42:5 78:6,8,13 13th [1] 2:12 14 [5] 1:15 90:15,17,21 96:17 1400 [1] 3:12 15 [12] 1:16 28:3 49:10 51:7 54:22 55:2 57:9 93:20,22,25 96:17 112:11 150 [1] 127:19 16 [8] 1:16 51:7 95:13,24 127:14,24 128:5,10 162 [1] 78:11 17 [1] 45:12 19 [1] 60:12 19103-7396 [1] 3:18 1930 [1] 37:2 1958 [1] 5:23 1961 [3] 6:1,22 8:19 1962 [1] 9:21 1965 [2] 8:3,20 1966 [1] 10:14 1968 [1] 121:1 1970 [7] 10:15,22 105:8 106:7,9 121:1,14 1970s [2] 60:13 106:23 1971 [1] 121:14 1972 [1] 60:15 1973 [2] 11:5 25:4 1976 [1] 13:5 1977 [6] 12:10 13:4,5 18:22 37:2 105:12 1978 [1] 13:23 1979 [3] 18:25 65:16 111:21 1980 [10] 19:24 21:6,7 26:1 34:7 65:6,8 68:11 98:21 104:7 1981 [6] 33:19 37:16 38:4 52:19 65:8 112:11 1982 [5] 45:12 46:9 47:20 54:22 57:10 1986 [7] 78:8 83:12 87:24 89:3,12,23 127:14 1993 [2] 20:6 21:8 1997 [2] 2:13 131:14 1st [1] 20:6	2 [6] 1:9 41:22,24 62:1 65:15 87:23 20 [1] 28:3 215 [1] 3:18 21927 [1] 3:12 22 [1] 33:20 25 [3] 47:20 48:8 127:14 25-gallon [1] 123:11 257 [1] 33:10 27 [1] 55:8 27420 [1] 3:13 2nd [14] 83:18 84:3,21 85:8 86:22 89:3,12,23 90:8,25 129:12,19 130:2 130:8	639-7298 [1] 3:10 64 [1] 1:13 65 [1] 1:14	
-0-	005905 [1] 45:13 005907 [1] 47:23 010245 [1] 33:10 011777 [1] 48:1 02849 [1] 2:4 054387 [1] 47:21 059149 [1] 127:19 059152 [1] 78:11 07101-3174 [1] 3:9 07102-5311 [1] 3:22 08054 [1] 3:5	-3-	8 [7] 1:12 57:7,9 78:8,17 83:11,13 80-015 [1] 56:11 807 [1] 48:2	
-1-	1 [9] 1:9 32:21,23 33:7,12 36:2,20 39:13 123:24 1.4 [2] 37:2,23 10 [7] 1:13 27:21 38:2,20 64:9,11,17 100 [1] 9:6 101 [1] 3:4 11 [2] 1:14 65:11 11-22-01 [1] 132:24 11/13/81 [3] 1:9 41:21 41:25 115 [1] 1:4 116 [1] 1:4 12 [7] 1:14 27:21 40:19 71:14,17 129:18 130:14	-4-	9 [4] 1:13 58:9,12 65:20 9/15/82 [1] 57:6 9/15/92 [1] 1:12 9/16/87 [2] 1:16 93:21 90 [1] 1:15 908 [1] 47:23 910 [1] 3:13 93 [1] 1:16 96 [1] 1:3 973 [1] 3:10 979-1000 [1] 3:18	
-2-	123 [1] 1:5 1254 [24] 100:3,8 101:17 102:13,15,25 103:13,21 103:25 104:10 105:15,25 106:18 107:3 114:19 116:1 117:24 118:9,22 119:2,15 121:3 126:18 128:20 1255 [1] 100:3 1260 [5] 104:10 105:16 106:1,18 107:3 127 [1] 1:16 128 [1] 1:5 13 [7] 1:15 21:10,24 42:5 78:6,8,13 13th [1] 2:12 14 [5] 1:15 90:15,17,21 96:17 1400 [1] 3:12 15 [12] 1:16 28:3 49:10 51:7 54:22 55:2 57:9 93:20,22,25 96:17 112:11 150 [1] 127:19 16 [8] 1:16 51:7 95:13,24 127:14,24 128:5,10 162 [1] 78:11 17 [1] 45:12 19 [1] 60:12 19103-7396 [1] 3:18 1930 [1] 37:2 1958 [1] 5:23 1961 [3] 6:1,22 8:19 1962 [1] 9:21 1965 [2] 8:3,20 1966 [1] 10:14 1968 [1] 121:1 1970 [7] 10:15,22 105:8 106:7,9 121:1,14 1970s [2] 60:13 106:23 1971 [1] 121:14 1972 [1] 60:15 1973 [2] 11:5 25:4 1976 [1] 13:5 1977 [6] 12:10 13:4,5 18:22 37:2 105:12 1978 [1] 13:23 1979 [3] 18:25 65:16 111:21 1980 [10] 19:24 21:6,7 26:1 34:7 65:6,8 68:11 98:21 104:7 1981 [6] 33:19 37:16 38:4 52:19 65:8 112:11 1982 [5] 45:12 46:9 47:20 54:22 57:10 1986 [7] 78:8 83:12 87:24 89:3,12,23 127:14 1993 [2] 20:6 21:8 1997 [2] 2:13 131:14 1st [1] 20:6	-5-	ability [2] 52:23 132:12 able [4] 13:24 15:13 76:1 126:14 abnormalities [1] 113:3 abreast [1] 113:20 abroad [1] 47:7 absence [3] 5:17 40:20 41:5 absolutely [2] 67:2 125:18 absorbic [1] 15:7 abstract [1] 23:21 acceptable [1] 5:6 accommodate [1] 5:9 acid [1] 15:7 ACSH [1] 72:19 Act [2] 13:22 14:4 action [3] 96:13 132:16 132:21 actions [4] 24:15 77:11 88:8,12 active [3] 6:19 26:2 28:5 actively [1] 31:2 activities [10] 14:2 17:13 26:14,16 28:2,18,20 32:7 84:11 99:4	
-3-	123 [1] 1:5 1254 [24] 100:3,8 101:17 102:13,15,25 103:13,21 103:25 104:10 105:15,25 106:18 107:3 114:19 116:1 117:24 118:9,22 119:2,15 121:3 126:18 128:20 1255 [1] 100:3 1260 [5] 104:10 105:16 106:1,18 107:3 127 [1] 1:16 128 [1] 1:5 13 [7] 1:15 21:10,24 42:5 78:6,8,13 13th [1] 2:12 14 [5] 1:15 90:15,17,21 96:17 1400 [1] 3:12 15 [12] 1:16 28:3 49:10 51:7 54:22 55:2 57:9 93:20,22,25 96:17 112:11 150 [1] 127:19 16 [8] 1:16 51:7 95:13,24 127:14,24 128:5,10 162 [1] 78:11 17 [1] 45:12 19 [1] 60:12 19103-7396 [1] 3:18 1930 [1] 37:2 1958 [1] 5:23 1961 [3] 6:1,22 8:19 1962 [1] 9:21 1965 [2] 8:3,20 1966 [1] 10:14 1968 [1] 121:1 1970 [7] 10:15,22 105:8 106:7,9 121:1,14 1970s [2] 60:13 106:23 1971 [1] 121:14 1972 [1] 60:15 1973 [2] 11:5 25:4 1976 [1] 13:5 1977 [6] 12:10 13:4,5 18:22 37:2 105:12 1978 [1] 13:23 1979 [3] 18:25 65:16 111:21 1980 [10] 19:24 21:6,7 26:1 34:7 65:6,8 68:11 98:21 104:7 1981 [6] 33:19 37:16 38:4 52:19 65:8 112:11 1982 [5] 45:12 46:9 47:20 54:22 57:10 1986 [7] 78:8 83:12 87:24 89:3,12,23 127:14 1993 [2] 20:6 21:8 1997 [2] 2:13 131:14 1st [1] 20:6	-6-	6 [5] 1:11 47:16,23 49:13 49:18 6/10/86 [2] 1:15 90:16	
-4-	123 [1] 1:5 1254 [24] 100:3,8 101:17 102:13,15,25 103:13,21 103:25 104:10 105:15,25 106:18 107:3 114:19 116:1 117:24 118:9,22 119:2,15 121:3 126:18 128:20 1255 [1] 100:3 1260 [5] 104:10 105:16 106:1,18 107:3 127 [1] 1:16 128 [1] 1:5 13 [7] 1:15 21:10,24 42:5 78:6,8,13 13th [1] 2:12 14 [5] 1:15 90:15,17,21 96:17 1400 [1] 3:12 15 [12] 1:16 28:3 49:10 51:7 54:22 55:2 57:9 93:20,22,25 96:17 112:11 150 [1] 127:19 16 [8] 1:16 51:7 95:13,24 127:14,24 128:5,10 162 [1] 78:11 17 [1] 45:12 19 [1] 60:12 19103-7396 [1] 3:18 1930 [1] 37:2 1958 [1] 5:23 1961 [3] 6:1,22 8:19 1962 [1] 9:21 1965 [2] 8:3,20 1966 [1] 10:14 1968 [1] 121:1 1970 [7] 10:15,22 105:8 106:7,9 121:1,14 1970s [2] 60:13 106:23 1971 [1] 121:14 1972 [1] 60:15 1973 [2] 11:5 25:4 1976 [1] 13:5 1977 [6] 12:10 13:4,5 18:22 37:2 105:12 1978 [1] 13:23 1979 [3] 18:25 65:16 111:21 1980 [10] 19:24 21:6,7 26:1 34:7 65:6,8 68:11 98:21 104:7 1981 [6] 33:19 37:16 38:4 52:19 65:8 112:11 1982 [5] 45:12 46:9 47:20 54:22 57:10 1986 [7] 78:8 83:12 87:24 89:3,12,23 127:14 1993 [2] 20:6 21:8 1997 [2] 2:13 131:14 1st [1] 20:6	-7-	7 [3] 1:12 54:20,22 7/25/86 [2] 1:16 127:23 709 [1] 3:5 71 [1] 1:14 727-1991 [1] 3:5 7494 [1] 2:16 78 [1] 1:15	
-5-	123 [1] 1:5 1254 [24] 100:3,8 101:17 102:13,15,25 103:13,21 103:25 104:10 105:15,25 106:18 107:3 114:19 116:1 117:24 118:9,22 119:2,15 121:3 126:18 128:20 1255 [1] 100:3 1260 [5] 104:10 105:16 106:1,18 107:3 127 [1] 1:16 128 [1] 1:5 13 [7] 1:15 21:10,24 42:5 78:6,8,13 13th [1] 2:12 14 [5] 1:15 90:15,17,21 96:17 1400 [1] 3:12 15 [12] 1:16 28:3 49:10 51:7 54:22 55:2 57:9 93:20,22,25 96:17 112:11 150 [1] 127:19 16 [8] 1:16 51:7 95:13,24 127:14,24 128:5,10 162 [1] 78:11 17 [1] 45:12 19 [1] 60:12 19103-7396 [1] 3:18 1930 [1] 37:2 1958 [1] 5:23 1961 [3] 6:1,22 8:19 1962 [1] 9:21 1965 [2] 8:3,20 1966 [1] 10:14 1968 [1] 121:1 1970 [7] 10:15,22 105:8 106:7,9 121:1,14 1970s [2] 60:13 106:23 1971 [1] 121:14 1972 [1] 60:15 1973 [2] 11:5 25:4 1976 [1] 13:5 1977 [6] 12:10 13:4,5 18:22 37:2 105:12 1978 [1] 13:23 1979 [3] 18:25 65:16 111:21 1980 [10] 19:24 21:6,7 26:1 34:7 65:6,8 68:11 98:21 104:7 1981 [6] 33:19 37:16 38:4 52:19 65:8 112:11 1982 [5] 45:12 46:9 47:20 54:22 57:10 1986 [7] 78:8 83:12 87:24 89:3,12,23 127:14 1993 [2] 20:6 21:8 1997 [2] 2:13 131:14 1st [1] 20:6	-8-	8 [7] 1:12 57:7,9 78:8,17 83:11,13 80-015 [1] 56:11 807 [1] 48:2	
-6-	123 [1] 1:5 1254 [24] 100:3,8 101:17 102:13,15,25 103:13,21 103:25 104:10 105:15,25 106:18 107:3 114:19 116:1 117:24 118:9,22 119:2,15 121:3 126:18 128:20 1255 [1] 100:3 1260 [5] 104:10 105:16 106:1,18 107:3 127 [1] 1:16 128 [1] 1:5 13 [7] 1:15 21:10,24 42:5 78:6,8,13 13th [1] 2:12 14 [5] 1:15 90:15,17,21 96:17 1400 [1] 3:12 15 [12] 1:16 28:3 49:10 51:7 54:22 55:2 57:9 93:20,22,25 96:17 112:11 150 [1] 127:19 16 [8] 1:16 51:7 95:13,24 127:14,24 128:5,10 162 [1] 78:11 17 [1] 45:12 19 [1] 60:12 19103-7396 [1] 3:18 1930 [1] 37:2 1958 [1] 5:23 1961 [3] 6:1,22 8:19 1962 [1] 9:21 1965 [2] 8:3,20 1966 [1] 10:14 1968 [1] 121:1 1970 [7] 10:15,22 105:8 106:7,9 121:1,14 1970s [2] 60:13 106:23 1971 [1] 121:14 1972 [1] 60:15 1973 [2] 11:5 25:4 1976 [1] 13:5 1977 [6] 12:10 13:4,5 18:22 37:2 105:12 1978 [1] 13:23 1979 [3] 18:25 65:16 111:21 1980 [10] 19:24 21:6,7 26:1 34:7 65:6,8 68:11 98:21 104:7 1981 [6] 33:19 37:16 38:4 52:19 65:8 112:11 1982 [5] 45:12 46:9 47:20 54:22 57:10 1986 [7] 78:8 83:12 87:24 89:3,12,23 127:14 1993 [2] 20:6 21:8 1997 [2] 2:13 131:14 1st [1] 20:6	-9-	9 [4] 1:13 58:9,12 65:20 9/15/82 [1] 57:6 9/15/92 [1] 1:12 9/16/87 [2] 1:16 93:21 90 [1] 1:15 908 [1] 47:23 910 [1] 3:13 93 [1] 1:16 96 [1] 1:3 973 [1] 3:10 979-1000 [1] 3:18	
-7-	123 [1] 1:5 1254 [24] 100:3,8 101:17 102:13,15,25 103:13,21 103:25 104:10 105:15,25 106:18 107:3 114:19 116:1 117:24 118:9,22 119:2,15 121:3 126:18 128:20 1255 [1] 100:3 1260 [5] 104:10 105:16 106:1,18 107:3 127 [1] 1:16 128 [1] 1:5 13 [7] 1:15 21:10,24 42:5 78:6,8,13 13th [1] 2:12 14 [5] 1:15 90:15,17,21 96:17 1400 [1] 3:12 15 [12] 1:16 28:3 49:10 51:7 54:22 55:2 57:9 93:20,22,25 96:17 112:11 150 [1] 127:19 16 [8] 1:16 51:7 95:13,24 127:14,24 128:5,10 162 [1] 78:11 17 [1] 45:12 19 [1] 60:12 19103-7396 [1] 3:18 1930 [1] 37:2 1958 [1] 5:23 1961 [3] 6:1,22 8:19 1962 [1] 9:21 1965 [2] 8:3,20 1966 [1] 10:14 1968 [1] 121:1 1970 [7] 10:15,22 105:8 106:7,9 121:1,14 1970s [2] 60:13 106:23 1971 [1] 121:14 1972 [1] 60:15 1973 [2] 11:5 25:4 1976 [1] 13:5 1977 [6] 12:10 13:4,5 18:22 37:2 105:12 1978 [1] 13:23 1979 [3] 18:25 65:16			

allow [2] 38:5 44:22	89:23 91:12,20,22,23 92:7	authorized [5] 18:14	benefits [3] 124:13,25	Bushnell [1] 130:7
allowance [1] 29:6	92:9,11,19,20 93:2,5,8	19:2,6 128:12,19	125:17	business [8] 12:15 57:4
allowed [3] 15:9 19:4,5	95:6,13,23 96:13,21 99:21	automobile [1] 126:11	Bernstein [1] 130:14	60:8 61:7,22 92:1 122:16
along [2] 29:10,11	101:16 102:4,24 103:11	automobiles [1] 126:13	best [5] 66:3,4 85:19 94:9	123:4
alterations [1] 113:13	103:21 110:11,16 118:1	available [11] 5:16 16:4	132:12	butt [1] 68:16
always [2] 73:19 75:2	121:9 128:12,19,22 129:1	18:19 22:7 59:22 73:7,18	better [14] 100:22 101:4	buy [2] 123:6,10
American [5] 2:8,24	129:13,22 130:3,11	74:8 79:19 101:3 124:16	101:6,7,8 117:20,24 118:7	buying [1] 15:10
7:14 72:20 115:15	Armstrong's [3] 93:12	average [2] 16:7 27:24	118:9,22 119:7,14 120:20	
among [2] 104:17,18	93:13 100:7	aware [5] 95:12,22	121:2	-C-
amount [1] 37:16	Aroclor [31] 100:3,8	105:14 114:7 115:25	between [17] 2:13 4:2	C [1] 3:1
amounts [1] 42:21	101:17 102:13,15,25	awareness [2] 82:3	31:5,6 51:13 52:10 60:16	cable [1] 19:13
analogy [2] 46:22 82:12	103:13,21,25 104:9,10	116:7	86:24 89:2,12 90:8,25	calculate [1] 124:16
analysis [4] 75:4,5 125:5	105:15,16,25,25 106:18	away [1] 86:19	95:6,12 98:10 108:1	calculations [1] 111:15
125:20	106:18 107:3,3 109:24,25		119:14	Caldwell [2] 93:1,2
analytical [4] 22:5 69:8	110:6 114:19 116:1	-B-	big [5] 18:2 38:19 61:16	calls [9] 83:19 86:13,18
70:16 117:16	117:24 118:9,22 119:15	B [1] 97:8	122:17,19	87:2 88:22 89:2,4,7
analyze [1] 75:10	121:3 126:17 128:20	Babies [1] 72:23	Bigger [1] 125:10	110:12
animals [2] 43:11 62:3	Aroclors [4] 109:23	background [4] 5:21	Bill [1] 36:9	cancer [15] 40:23 41:9
ANPR [1] 56:2	114:9 115:4 128:13	58:21 60:1 79:18	billion [2] 37:2,23	46:5 51:13 54:13 82:8,11
answer [31] 4:25 5:4	arsenic [1] 6:19	Backgrounder [9] 1:13	biodegrade [1] 107:13	82:21 98:7,10 108:2,5
43:23 44:14 51:15 52:19	article [3] 64:18,20 65:2	58:8,13,17,24 74:10 79:16	biphenyls [5] 7:1 9:16	112:11 113:21 114:2
53:9 55:18 59:16 61:24	aspects [3] 7:8 17:6 24:5	80:3,8	33:8 58:14,25	capability [1] 88:17
62:21 73:16 74:9 76:9	aspirin [1] 72:24	Backgrounders [2] 59:4	bird [1] 61:18	capacitors [4] 19:12
79:13 82:9,17 84:8 85:19	assemble [1] 52:5	59:5	Bishop [15] 45:11,16,17	27:6 37:18 106:16
86:21 87:2,12,15 95:17	assembled [1] 53:15	bad [1] 42:25	45:20 46:3,14 55:5,9,14	capacity [2] 16:12 19:15
95:21 103:17 109:1,14	assessment [1] 74:13	ban [2] 18:23 19:2	57:10,15,25 63:16 65:20	Carbide [1] 28:10
110:24 112:3,18	assigned [4] 8:8 122:14	banded [1] 26:11	66:1	carbon [4] 6:14 47:2 80:6
answered [2] 21:17 89:9	122:16,20	banned [3] 18:24 19:1	Bishop's [1] 57:17	129:3
answering [2] 56:22	assist [1] 21:25	42:23	Bistline [4] 71:23,23	carboned [1] 80:9
74:19	assistance [2] 68:7	Barry [2] 54:23 55:3	92:25 95:2	carbonce [1] 57:13
answers [3] 80:1,14 82:5	94:19	based [11] 18:21 60:8	bit [1] 20:8	carcinogenic [2] 57:19
anticipate [2] 45:5 80:21	assistant [1] 77:18	61:7,23 62:2 66:5 108:2	BJ [1] 72:1	101:25
anticipated [1] 7:19	associated [6] 23:2,21	111:14 119:12 120:4	blanks [1] 75:8	cardiovascular [1]
appear [1] 34:16	40:21 58:4 112:15 126:17	122:5	blind [1] 47:2	82:22
appeared [1] 97:10	Associates [1] 2:16	basic [2] 8:23 59:19	Bob [6] 70:16,18 71:4	care [3] 87:9,11 123:13
applicable [1] 59:8	association [14] 25:10	basis [7] 29:4 33:24 39:15	78:16 83:24 92:21	career [3] 24:21 25:1,1
application [1] 120:21	26:3,5,10,13,24 27:2,3,10	57:20 96:19 118:14	bodies [2] 41:8 43:12	Carolina [1] 3:13
applications [6] 11:14	30:4,7 31:1 35:4 66:7	120:22	boilerplate [1] 105:20	Carolyn [10] 3:21 33:4
12:23,24 38:7 117:13	associations [4] 24:22	Bates [5] 33:9 47:21,23	book [1] 72:19	69:15,16,17,21 70:10 71:6
122:7	25:6,17 34:23	48:1 78:10	booklet [1] 73:1	115:13 130:21
applied [3] 7:6 109:20	assume [9] 5:5 9:21 10:8	BCC [13] 84:5,12,23	bothers [1] 106:25	carpet [1] 111:2
125:20	10:22 12:10 13:6 19:25	85:22 86:6 88:2,8 89:11	bottom [7] 33:20 49:11	case [14] 5:16 20:18 23:11
apportion [1] 20:14	44:16 80:7	91:12 93:15 94:15 95:15	51:10 55:21 63:15 78:19	24:9 46:5 59:22 80:9,19
apprised [1] 85:21	assumed [2] 9:8 18:22	95:25	82:7	82:20 96:12,23 97:20
approach [3] 42:24,25	assure [1] 18:12	became [14] 10:23 11:1	box [2] 3:12 42:22	110:9 122:21
63:3	astounded [1] 53:24	11:7 20:1,2 25:25 26:1,2	break [3] 5:8 33:1 96:5	cases [5] 23:14 24:4
appropriate [2] 44:1	atom [1] 6:14	26:9 51:20 77:18 81:21	breast [3] 54:13 72:23	29:21 38:5 41:7
79:13	Atrium [2] 3:4,4	98:20 104:6	114:1	catalyses [3] 8:15 9:1
approval [6] 88:6 91:25	atrophy [1] 113:10	become [2] 60:23 73:13	Brian [2] 3:3 96:10	10:3
92:8,12,13 128:8	attached [1] 1:17	begin [1] 8:1	brief [5] 33:2 67:4 96:6	catalysts [1] 11:17
April [24] 54:22 55:2 78:8	attendant [1] 57:2	begins [4] 43:6 60:4	99:12 123:23	catastrophes [1] 124:19
78:17 83:11,13,15,18 84:3	attended [7] 25:8,14,18	72:16 82:18	bright [1] 53:21	caught [2] 107:14,15
84:21 85:8 86:22,22 87:23	92:21 129:14,21 130:19	behalf [8] 4:11 20:22	bring [1] 83:22	causal [3] 52:10 98:6,9
89:3,12,23 90:8,25 100:11	attention [1] 129:20	29:12,13 47:8 97:5 129:14	bringing [1] 29:18	caused [3] 50:6 82:20
129:12,19 130:2,8	attitude [1] 104:22	129:22	brings [1] 13:4	112:25
area [11] 6:4 8:14 14:9,10	attorney [5] 76:3,4,8	beholder [1] 112:22	Broadcast [1] 65:14	causes [1] 113:16
14:12 15:4 17:23 18:2	96:11 132:18	beholders [1] 63:14	brought [2] 96:12,22	causing [2] 41:9 82:11
22:22 77:6,8	attributable [1] 113:6	beings [1] 109:10	Brussels [1] 47:10	caution [1] 76:5
Armstrong [72] 2:6,23	attributed [1] 46:6	belief [1] 117:22	building [3] 35:4 75:25	CC [1] 78:19
3:15 67:11,14,18,24 68:14	audiences [1] 59:13	beliefs [3] 98:5,12 107:25	103:18	cease [2] 105:7 111:25
68:17,24 71:6,20 73:8,9	authored [5] 33:14 47:25	below [1] 37:1	bulletins [2] 99:17 104:5	ceiling [29] 96:15 100:3
78:10,16 80:18 81:5 83:9	98:2 113:8 126:1	benefit [9] 124:6,7,11,16	Burlington [6] 67:7 81:2	100:8,17 101:9,12,13,17
83:11,18 85:7,21 86:5,24	authorizations [1] 18:7	125:5,24 126:5,10,13	96:16 99:23 110:10 129:7	

101:22 103:1 104:1,2 117:20 118:1,9,23 119:5 119:15,19 120:3,4,9,11 120:17 121:3,7,8 126:18 127:6 Center [2] 3:9,22 CEO [2] 67:21 68:16 certain [11] 38:6 42:23 59:19 77:11 84:17 86:18 87:3 112:14,19 113:17 124:13 certainly [2] 86:2 94:18 CERTIFICATE [1] 132:1 certify [2] 131:3 132:9 cetera [2] 117:10 124:24 chain [2] 107:14,15 chaired [2] 32:15,16 chairman [3] 27:20 32:8 32:9 Chamber [1] 34:19 chambers [1] 34:22 change [6] 9:2 12:7 44:16 44:19 87:13 106:10 changed [3] 19:18 62:18 62:22 changes [4] 10:25 113:16 131:5,9 channeled [1] 21:21 characterized [1] 118:16 charged [1] 20:21 chemical [27] 7:3,15 8:24 17:13 26:2,4,7 27:9 28:9,10,12 30:3,7 31:1 42:18 65:21 66:1,7,17,20 66:21 92:23 96:22 97:5,7 97:11 110:1 chemicals [27] 7:7,8,9 12:14,15 13:10,17 14:6 14:12,17,25 15:4,6,13,15 16:13 17:14 21:6 25:7,13 35:19 47:12 62:15 64:12 72:24 73:24 81:13 chemist [13] 9:10,12,19 9:22 10:5 22:1 69:9 70:16 77:8 102:9 117:1,6,9 chemistry [13] 5:22 6:1 6:5,6,7,8,11,12,13,13,14 6:15 8:14 chemists [1] 11:2 chloracne [1] 112:23 Christopher [1] 3:8 chronic [3] 46:6 62:3 82:21 circumstances [1] 42:7 city [9] 8:6 9:3,3 20:17 22:16 23:4,6,7 34:19 claim [1] 22:24 claims [1] 41:12 classical [1] 38:21 classified [2] 38:22 57:21 clean [2] 93:7,15 cleaned [1] 81:9 cleaning [2] 23:2 81:8 clear [3] 51:21 52:10 86:20 client [1] 24:10 clients [2] 20:20 24:17 close [1] 54:12 closed [8] 42:10 105:3 105:12 106:14,19 107:4 112:1 125:21 closers [1] 19:13 CMA [23] 26:9 28:3,7,21 29:9 30:14,15,19 31:6,6 31:12 32:8,13,17,19 35:18 50:5,6,11,15,16,21 56:1 coalition [1] 31:5 coated [1] 96:18 coating [5] 101:21 102:1 119:8 120:1,13 coatings [3] 7:9,11 119:4 college [9] 67:8 75:25 81:2,7,8 96:16 99:23 110:10 129:7 Collins [1] 130:7 combat [1] 58:3 coming [4] 8:4 16:21 84:3 87:23 comment [6] 31:24 43:3 44:2 117:19 118:13,16 comments [4] 31:25 56:2 74:4 117:21 commerce [2] 34:19,22 commercial [7] 11:7,13 11:22 12:4,8,17,18 commission [2] 131:20 132:24 commit [1] 76:1 commitments [1] 77:15 committed [2] 84:17 85:5 committee [1] 69:22 committees [1] 30:25 common [4] 39:18 46:16 57:21 82:12 communication [3] 81:3,4 88:20 communications [3] 15:2 95:5,23 community [4] 53:24 74:18 81:2 99:23 companies [8] 14:1 28:4 30:19 35:24 61:2 115:25 125:10,11 company [28] 2:8,8,24 2:25 3:7 8:5,12 12:14 13:10,17,24 14:7,12 17:2 17:13,14 21:6,14 25:5 56:13 68:12 92:24 96:22 97:5,7,11 115:15,16 company's [1] 22:25 compare [1] 124:24 compared [1] 62:14 comparing [1] 46:25 comparison [1] 63:2 completely [2] 4:25 123:12 complexes [1] 6:20 compliance [2] 24:2,3 complied [1] 21:15 compounds [2] 41:7 46:7 concern [3] 107:8,20,23 concerning [2] 102:7 129:6 concerns [5] 60:8 61:8 82:8 106:17 107:2 concluded [1] 61:6 conclusion [5] 41:6,20 44:15 48:22 52:2 conclusions [8] 48:24 49:7 50:25 51:6,23 52:12 108:15,21 conditions [1] 119:1 conferences [1] 25:15 confidential [1] 92:1 confused [1] 21:11 connection [2] 91:11 120:17 consideration [1] 125:13 considered [2] 46:17 92:1 consistent [1] 18:11 constipation [1] 63:8 construction [1] 8:11 consult [5] 76:3 86:5 87:14 88:1,4 consultancy [1] 24:2 consultant [2] 22:9 74:11 consultations [1] 86:24 consulted [1] 20:20 consulting [6] 20:8,10 22:10,13 23:11 76:2 consumed [1] 49:6 contact [18] 50:22 63:16 67:17 71:2 81:5 109:11 109:16,17 110:13,16 111:21 114:8,13 115:19 115:21 128:24 129:5,9 contacted [15] 67:13,15 68:6 79:21 80:11 91:13 91:14,16,23 97:19,21 99:21 105:14 114:22 115:1 contain [1] 99:5 contained [4] 29:19 106:14 114:9 125:25 containing [1] 102:22 contaminated [1] 20:14 contamination [1] 20:18 contemplate [2] 108:23 109:4 context [3] 40:11 108:16 108:19 continue [1] 87:3 continued [1] 19:4 continuing [2] 6:23 7:16 contractor [1] 91:9 contractors [5] 18:12 18:14 50:18,18,20 contribute [3] 93:15 94:14 95:8 control [8] 13:22 14:3 19:19,23 34:6 42:1,11 107:21 controlled [2] 105:3 107:24 controls [1] 75:8 conversation [4] 90:7 90:10,20,25 conversations [4] 76:6 89:22 100:1,6 convey [1] 116:7 cooperative [1] 60:16 coordinate [1] 17:12 copied [1] 47:6 copies [1] 80:7 copy [12] 16:18 47:2 50:9 50:10 73:2 79:16 94:3 127:18,19,21,21 129:3 corporate [3] 9:20 21:12 53:2 corporation [1] 53:6 correct [47] 34:11 39:21 39:23 40:8 48:10 49:15 50:4 71:21 78:18,24 98:7 98:8,10,11,14,15,17,23 99:1,24,25 103:13 106:7 109:8,9,12 110:13,14,21 111:6 112:7,8,11,16 113:4 117:2,11,12 124:1,19,20 124:25 125:1,21 129:16 131:8,12 correctly [3] 61:5 98:20 121:12 correspondence [3] 47:5 87:14 90:5 cost [7] 20:15 23:2 93:6 93:15 94:14,19 95:8 costs [3] 20:14 23:1 95:25 council [2] 60:21 72:20 counsel [10] 4:2,2 72:2 76:8,9,25 97:17 130:15 132:14,18 counterparts [2] 35:16 77:13 countries [3] 38:5,9,11 country [8] 9:7 15:12 18:19 34:25 52:16 53:18 53:19 104:20 County [6] 67:7 96:16 110:10 129:7 131:2 132:4 couple [14] 10:13 18:8 69:10 70:12 71:1 83:19 84:1 92:19 110:12 116:13 116:21 123:18,23 127:11 course [9] 6:21 7:3,5,14 24:21 42:18 68:3 125:20 127:17 courses [5] 6:23,24 7:7 7:12,16 court [8] 2:1,21 5:12 23:7 29:16,19 45:2 87:21 Court's [1] 20:17 Craddock [73] 2:11 4:9 4:16,18 5:20 24:21 32:21 33:7,9,10,12 36:1,20 39:13 41:24,25 42:1 45:10 45:13,14 47:20,21,22,23 48:3,5 49:13,18 50:2,3 54:22,23,24 57:9,11 58:12 58:14 59:18 64:11,13,13 64:17 65:13 67:6 71:16 71:17 77:24 78:8,12,13 80:2 90:15,19,21 91:7 93:24,25 96:10 109:14 115:13 117:1 120:18 121:11 123:24 127:15 128:3,4,5,10 129:18 130:14 131:3,24 Craig [1] 3:17 creation [1] 44:24 credible [1] 53:17 crude [1] 25:11 cry [1] 104:17 customarily [2] 47:6 80:13 customary [1] 47:3 customer [16] 67:24 68:3 68:4 80:11,12 91:24 92:5 106:4,5 122:6,7,17,17,19 122:22 125:9 customer's [1] 91:24 customers [17] 21:18 35:8 82:14,16 83:3 92:4 105:15,21,24 111:22 114:14,15 121:18 122:15 122:24 123:5 125:3 customers' [1] 121:15 cut [1] 20:14 cutoff [2] 29:6 116:4 -D- D [1] 3:3 daily [1] 63:4 damage [1] 124:24 Dan [10] 45:17 55:5,9,14 55:16 57:10,15 63:16 65:20,25 Darby [1] 7:23 dash [1] 40:14 data [16] 15:19 16:3,4 28:20 30:19,21,22 38:25 39:2 46:24 50:16 62:13 91:10 92:14,16 128:23 date [4] 33:20 65:5,9 88:25 dated [22] 1:9,10,10,12 1:12,14,15,15,16,16 41:21 41:25 45:7,12 54:19 57:6 71:13 78:5 90:8,16 93:21 127:23 Davidson [6] 3:11 106:21 107:5 116:19 126:20,22
--

days [4] 18:16 70:12 71:1 97:25 Dayton [2] 34:19 35:2 deadly [4] 41:10 43:12 64:12 82:11 deal [3] 14:20 16:2 68:12 dealing [3] 14:13,14 51:12 dealings [2] 35:15 99:20 dealt [3] 14:15 16:12 64:1 decade [1] 52:1 deceased [1] 54:17 decide [1] 23:1 decided [4] 61:20 104:14 105:7 111:25 deciding [1] 86:6 decision [10] 60:7 61:6 61:13 88:16,17 104:9,15 105:5,10 125:13 decisions [6] 88:2,7,13 88:14,17,18 declare [1] 131:11 defendant [6] 3:7,15,20 4:3,11 96:23 DEFENDANT'S [1] 1:7 defendants [3] 2:9,25 22:20 Defense [3] 31:7,16 32:13 defensive [1] 73:19 define [3] 102:9 124:10 124:12 defined [1] 105:1 definition [1] 99:13 degree [2] 5:22 6:2 degrees [1] 56:22 deleted [2] 79:1,4 deliberate [1] 109:19 department [32] 9:20 11:4 14:16 15:2 16:10 22:4,4,5 25:4 36:5,6,11 36:14 38:24 39:4,7,8,11 45:18 49:3,23,25 53:8 59:3,6,8 63:19 71:24 77:13 78:23 80:13 130:11 departments [4] 43:21 44:9,13 59:9 depending [1] 20:15 deposed [6] 4:19 97:1,2 97:4,23,24 deposition [11] 1:7 2:11 4:3 97:20 98:1 131:4,6,10 132:8,10,16 depth [1] 70:11 derived [2] 8:17 98:12 dermatitis [1] 112:25 describe [1] 99:17 described [3] 68:5 89:4 102:5 describes [2] 110:5 113:9 DESCRIPTION [1]	1:8 design [1] 8:12 designed [1] 101:5 detail [4] 55:20 56:22 59:2 113:22 detailed [3] 51:6 55:13 55:17 details [4] 70:7 91:3,3 108:17 Detroit [4] 48:8,11,12 83:7 developed [2] 11:16 12:2 developing [1] 81:17 development [8] 11:7 11:13,22 12:5,9,17,18 130:11 developments [2] 85:22 86:3 devious [1] 123:5 dibenzyl [7] 102:3,7,8,9 102:11,12,14 Dick [4] 67:19,20,21 68:13 DICKER [1] 3:21 differ [1] 6:11 different [14] 22:8 25:17 35:23,24 48:22,24 56:18 69:2 81:23 86:14 87:5,8 87:10 109:19 difficult [1] 75:9 digress [1] 70:18 DiMuro [67] 1:5 3:8 23:23 24:6 43:22 44:11 45:1,4 46:19 51:2,5,14 53:1 54:4 59:10 61:10 62:7,20 65:22,24 66:8,13 73:10 74:6 76:5 77:23 78:25 79:3 80:15 82:15 82:25 83:17 84:13,24 86:7 86:9,16 87:7,11,21 88:3,9 93:16 94:16 95:16 102:6 108:25 109:13 110:22,24 112:17 114:24 115:9 116:13,17 118:11,15 119:16,23 120:7,23 121:4 122:23 126:25 127:11 128:2 130:24 dioxin [1] 20:18 direct [1] 129:20 directing [1] 53:12 direction [2] 51:17 132:14 directly [5] 6:25 72:14 92:5 113:6 118:20 director [10] 36:15 45:17 45:20 49:24 53:6,7,8 55:6 55:16 72:9 disagree [1] 44:17 disagreed [1] 44:15 disclose [1] 76:6 discovered [3] 61:18 67:7 81:10 discovery [1] 127:17 discuss [3] 48:17 76:12	130:2 discussed [7] 77:5,12 79:7 89:18 102:4 128:21 128:25 discussing [3] 36:21 64:18 76:24 discussion [7] 47:18 53:10 100:13,23 103:15 103:20 120:16 discussions [8] 51:6 73:7 74:24 95:12 100:9 100:16,18 101:20 dispel [1] 20:22 disposal [13] 7:9 16:24 18:9,12,17,18 20:15,21 22:2 28:15 30:23 53:5,20 dispose [2] 18:15,19 dispute [1] 29:14 disseminated [2] 33:23 64:23 dissemination [1] 57:4 dissertation [1] 6:16 distributing [1] 104:9 distribution [8] 19:11 37:1 90:13 94:1 104:20 105:8,11 112:1 distributor [3] 123:6,9 123:13 distributors [4] 115:19 115:21 116:3,9 district [5] 2:1,1,21,21 23:8 divide [1] 72:3 division [14] 9:18,24,25 11:9,11,25 12:1,3,20 13:15 25:13 27:5 35:19 35:23 divisions [1] 27:8 Doctor [1] 124:5 doctoral [1] 6:16 document [39] 33:6,7,11 33:14,24 39:9,13 42:1 43:25 47:19,24 48:4 49:13 49:16,18 50:11 54:24 58:11,12,15,21 64:11,13 64:16 65:13 71:16 73:3 78:12 79:17 93:24 94:24 123:25 124:7 126:1 127:16 128:4,17,21 documentation [1] 102:16 documented [3] 46:5 82:20 130:23 documenting [1] 18:1 documents [12] 37:5 47:15 50:6,9 59:20 97:13 97:17 98:2,3,13 108:14 doesn't [3] 87:7 119:17 123:13 Dolly [2] 48:7 83:5 domain [1] 17:21 done [30] 5:13 6:21 20:10 20:12,12 22:13 23:11 49:5 50:17 51:17 52:18,25 53:4 53:11,25 54:2,10,10 60:12	72:22 74:15 75:6,20,22 99:2,6 119:12 124:10 129:24 130:24 door [1] 123:14 Dow [2] 28:9 66:25 down [15] 5:12 15:22 16:1 37:1 49:11 52:17 55:21 63:15 72:18 78:19 79:12,14 82:7 104:19 124:21 dozen [6] 18:8 25:17 51:25,25 56:6 97:3 Dr [67] 4:16 5:20 24:21 33:10 36:9,13 39:25 40:1 40:2,3,4,24,25,25 41:16 41:16,16 42:1 45:10,13 45:16 48:22,23,25 49:21 51:10,17 52:5 53:10,16 54:6,7,17,24 64:12,13 67:6 70:21 71:16,19 73:6 74:4 75:18 77:17,20,24 77:25 78:9,11,15 80:2 89:5,22 90:10 91:7 93:24 96:10 108:4 109:14 112:6 113:12 117:1 120:18 121:11 128:3,4 129:19 drafted [1] 123:25 drive [1] 126:14 Drug [1] 14:15 drum [2] 123:11,12 DUANE [1] 3:16 due [1] 23:12 dues [1] 25:20 duly [1] 132:10 Dupont [2] 28:9 67:1 duration [2] 111:6,7 during [6] 9:15 21:3 31:2 45:23 115:18 127:17 duties [1] 21:2 -E- E [2] 3:1,1 eagles [1] 61:19 early [9] 18:16 27:15 34:14 60:13 100:11 105:17 106:22 107:6 111:13 easier [1] 124:12 easily [1] 62:24 easy [1] 40:9 eating [1] 63:1 Ecology [2] 50:19 55:24 EDELMAN [1] 3:21 Edison [3] 26:18,19 29:10 editor [2] 57:10 64:25 educate [1] 17:1 educated [1] 37:24 education [2] 6:24 7:16 educational [1] 5:21 Edwards [1] 31:19 EEI [4] 26:17,21,22,23 effect [2] 14:11 90:4	effects [14] 24:8 36:4,10 43:10 50:7 55:13 60:10 61:9 62:3,25 64:19 73:1,4 98:17 efforts [4] 15:16 114:7 114:13 116:6 eggs [1] 61:19 eight [4] 2:13 27:25 34:15 70:23 either [9] 31:21 37:14 67:14 69:19 70:9 86:1 92:13 109:8,11 electric [9] 26:18,19,24 29:10 35:11,16,17,18 104:19 electrical [20] 18:7 19:7 19:9 26:12 27:1,4 28:12 28:13,14,15 29:7 34:20 37:17 38:1,18 57:11 81:12 104:18 105:4 106:15 elementary [1] 56:20 elements [2] 6:15 120:2 ELSER [1] 3:21 employed [3] 8:22 132:15,18 employee [4] 35:15,17 66:6 132:18 employees [2] 35:12 100:7 employment [4] 8:1 19:21 108:11 115:18 enclosed [1] 29:7 enclosure [1] 55:22 enclosures [3] 49:11 78:11 79:5 encompassing [1] 42:16 encountered [1] 58:5 end [4] 40:13 48:22 56:9 97:22 endeavor [1] 111:21 ends [1] 82:18 Engineer [1] 8:24 engineering [2] 8:11 22:4 entered [1] 29:9 entering [1] 107:21 entire [2] 21:23 22:3 entitled [4] 33:7 47:24 58:12 64:12 environment [6] 44:6 50:19 55:25 61:18 107:12 107:22 environmental [34] 13:11,12,14,19 14:1 16:15 19:17,19,22 20:3,25 21:9 31:7,16 32:2,3,13 34:5,9 60:9,22 61:8,24 72:2,4,13 76:2,4,7 104:22 107:9,10 124:23 130:15 environmentally [1] 61:14 EPA [31] 20:21 28:23 29:22 30:19,19 31:8,14 31:16,20 32:1 37:14,19 37:20 38:17 42:1,4,9,15
---	---	--	---	---

44:19 52:3 56:6 60:18 63:23,24 64:1 74:15 82:24 83:4 91:9,10 128:23 epidemiological [8] 49:17 51:1 54:3,9 108:2 112:5,9 113:19 epidemiologist [3] 48:25 49:21 53:18 epidemiology [8] 1:11 36:9 40:20 47:24 49:14 49:24 52:7 53:8 equation [1] 124:11 equipment [17] 18:8 27:4,7 28:12,13,14,15 29:7 30:23,23 34:21 38:2 38:6,18 66:3 105:4 106:15 equivalent [1] 46:16 errors [1] 40:9 especially [1] 75:10 essential [1] 124:14 essentially [14] 6:15 10:24 12:1,7,18 18:20,25 20:2 31:25 33:17 44:21 46:24 92:24 93:5 established [5] 53:16 119:18,19,25 120:2 establishing [1] 29:5 Estate [1] 2:3 estimate [1] 37:19 et [4] 2:4,22 117:10 124:24 Ethel [1] 2:16 Europe [10] 38:16 45:23 45:24 46:1,2 47:4,8,10 55:6 57:15 European [4] 38:5,9,10 38:16 Evans [1] 70:4 evaporate [1] 36:24 event [3] 73:14 80:20 81:22 events [2] 89:11 95:14 eventually [1] 107:17 everybody [2] 14:10 73:22 evidence [1] 41:11 exact [3] 20:1 72:8 88:24 exactly [5] 33:16 40:10 64:24 113:17 127:20 exaggerated [2] 58:4 82:10 EXAMINATION [6] 4:14 96:8 115:11 116:24 123:21 128:1 examined [2] 2:12 4:11 example [3] 35:10 79:6 82:24 exceeded [3] 111:9,11 111:12 except [4] 10:25 19:1 78:22 91:4 excused [1] 130:25 Executed [1] 131:13 Executive [1] 55:25 Executrix [1] 2:2	Exhibit [14] 32:23 41:22 45:8 54:20 57:7 58:9 64:9 65:11 71:14 78:6 90:17 93:22 127:14,24 Exhibits [3] 1:7,17 47:16 exist [1] 125:19 existed [4] 60:17 73:9 96:17 112:10 existence [3] 27:12,15 27:16 existing [1] 11:15 expectation [3] 125:2,3 125:8 expected [4] 4:25 84:10 84:22 87:1 expensive [1] 93:19 experience [3] 14:20 40:20 66:5 expert [6] 20:16,17 22:15 24:11 98:9,16 expertise [1] 58:2 experts [2] 39:19 40:6 expires [2] 131:20 132:24 exposed [1] 43:11 exposure [17] 23:13,15 23:18,21 38:21 40:22 51:12 96:14 110:21,25 111:3,6 112:15,20 113:1 113:10,12 expressly [1] 4:7 extent [4] 17:19 84:10,22 85:2 extractions [1] 8:17 eye [2] 112:22 127:20 eyes [1] 63:14 -F- F [1] 3:17 facilities [4] 14:6 18:5 18:10,18 fact [5] 29:4 50:18 97:4,8 111:16 factor [1] 88:15 facts [3] 58:23 59:19 74:20 faculty [1] 7:20 failed [1] 42:16 fair [3] 67:3 95:20 110:19 fall [1] 88:25 familiar [5] 4:23 99:9 102:19 114:18,21 familiarity [2] 99:11 115:15 family [1] 11:17 far [10] 29:3 64:7 76:21 93:11 96:20 101:4,9 108:15 111:2 126:16 FDA [3] 15:2 16:10 60:21 fears [1] 74:20 feathers [1] 61:19 February [3] 20:6,7 21:7 federal [4] 20:16 23:7 56:5 81:19	feeding [1] 72:23 felt [2] 22:22 93:14 few [5] 9:5 46:18 54:9,10 115:14 field [7] 9:4,6 19:12 39:20 40:10 53:17 74:14 file [3] 90:5 95:10,19 filed [4] 28:22,22,25 42:9 final [3] 56:7,8 104:24 financially [1] 132:19 fine [10] 5:7 12:14 13:8 14:12,25 15:4 16:13 25:13 81:10 121:11 finish [1] 45:1 fire [8] 20:20 23:3,4,6,9 81:6,8 99:22 fires [1] 124:17 first [24] 9:8 13:22 16:16 16:18 52:18 55:5 60:6 67:6,11,17 68:19 69:3,17 70:9,11 71:22 76:24 79:6 82:4,6 97:19,21 127:1 129:12 fish [2] 49:5,6 five [3] 6:20 10:17 71:23 five-gallon [1] 123:11 flame [1] 103:18 fledged [1] 15:14 flies [1] 126:12 Flip [1] 55:21 focal [3] 21:12 53:3 56:12 folks [1] 7:23 follow-up [2] 83:21 85:12 follow-ups [1] 123:19 followed [3] 54:11 95:6 113:23 following [3] 60:5 85:8 85:12 follows [1] 4:12 food [18] 12:14,25 13:7 14:12,14,15,17,24 15:4,5 15:8,11 16:13 25:12,14 25:15 107:14,15 force [3] 60:14,24 61:3 foregoing [4] 131:4,12 132:8,10 forenoon [1] 2:14 forget [1] 72:8 forgot [1] 48:19 forgotten [1] 20:1 form [45] 23:23 24:6 43:22 44:11 46:19 51:14 53:1 54:4 59:10,13 61:10 62:20 66:9,10,14 73:10 74:6 80:16 82:16,25 84:13 84:24 85:12 86:7 87:16 88:3,10 93:17 94:17 95:16 102:6 108:25 109:13 110:22,23 112:18 114:25 118:2,12 119:16 121:4 122:23 126:25 128:15 131:5 format [1] 108:18	formed [6] 13:9 14:19 27:14 31:5,6 42:21 former [4] 21:18 35:8 58:1 68:4 forming [1] 8:25 formula [1] 119:17 formulation [3] 102:1 117:25 118:4 formulations [6] 7:9,11 99:18 101:21 102:22 122:25 forth [3] 22:18 61:16 86:18 forward [1] 94:7 found [7] 40:23 70:11 82:1 102:12,15 111:2,9 four [4] 27:19 56:9 69:1 71:22 fourth [1] 83:16 frame [4] 12:16 67:12 106:8 112:13 Free [2] 48:8,11 French [1] 38:12 frequently [5] 15:25 16:7 34:12 122:21,24 friend [1] 29:16 front [3] 50:10 73:16,21 full [7] 4:17 15:14 71:8 77:9 84:10,22 85:2 full-time [2] 64:3,6 function [17] 11:19,23 11:24 13:19 15:12 17:12 21:23 30:18 39:21 40:5,6 53:2,6 55:15 56:12 59:12 69:9 functions [1] 113:17 fund [4] 20:13 31:7,16 32:13 funding [1] 93:11 funny [1] 123:4 furans [7] 102:3,7,8,9,11 102:12,15 -G- G-A-F-F-E-Y [1] 48:1 Gaffey [20] 36:9 39:25 40:1,25 41:17 47:25 49:12 49:21 52:5,21,21 53:10 53:16 54:6,7,17 112:7,7,8 113:12 Gaffey's [4] 50:1 51:1 51:11,17 GARY [1] 3:3 Gateway [1] 3:22 GE [3] 35:10,12,21 gear [1] 68:16 geared [1] 98:24 gearing [1] 13:24 general [22] 7:2,7 21:20 22:21 30:24 35:11,16,16 35:17 48:17 55:16 60:1 76:15,20 79:18 100:13,15 100:23 101:10 102:7 122:1 125:16	generally [12] 6:13 24:9 29:22 44:1 47:11,13 59:13 79:19 80:17 104:10 119:9 121:23 generated [3] 47:8 103:24 109:22 generic [1] 120:11 gentleman [1] 130:13 George [2] 36:11,13 Gerard [2] 3:11 97:9 Gilhousen [1] 72:1 GINSBERG [1] 3:3 given [6] 17:5 39:3 68:20 98:5 126:20,21 giving [3] 35:13 92:12 92:13 God [3] 19:18 70:22 126:11 goes [3] 116:17 121:24 123:8 gone [4] 47:13,14 52:12 104:4 good [10] 4:16 9:4 39:18 53:22 74:13,16,17,18 75:15 119:3 Gossage [2] 92:25 95:2 government [4] 37:6 52:3 60:16,19 government's [1] 104:17 governmental [1] 14:20 grade [2] 10:24 12:8 graduate [1] 5:24 graduated [1] 5:25 grain [1] 114:20 grandfather [1] 63:7 grappling [1] 101:14 great [1] 126:13 greatly [1] 82:10 green [1] 72:19 Greene [1] 3:12 Greensboro [1] 3:13 grossly [1] 58:3 group [36] 8:25 10:9,10 10:11,12,23 11:1,2,3 12:15 13:9,11,12,14,18 13:20 14:2 16:16 19:17 26:9,13,14 28:25 29:11 31:11 32:8,9,11,15 35:21 35:22 61:6,12,13 72:21 117:10 groups [13] 25:19 26:10 26:15 31:13,13,25 32:2,4 34:1,23 35:15,17 72:10 guess [17] 5:2 7:2 20:24 23:14,24 29:15,22 37:24 38:3 66:15 72:4 75:2 77:24 82:5 97:21 100:23 -- 101:10 guidelines [1] 31:8 guy [6] 69:7,23 70:3,13 70:15 91:5 -H-
---	---	--	---	---

H [12] 2:11 3:11 4:9 12:1 12:9,13,20 13:3 33:9 64:13 131:3,24 half [3] 25:16 37:16 97:3 hand [1] 90:11 handed [1] 127:20 handle [3] 21:23 26:8 73:12 handled [1] 47:11 handling [1] 109:23 handouts [1] 57:3 happening [1] 85:15 happy [3] 5:3,9 84:6 Harbison [3] 74:12,17 74:18 hard [1] 25:7 Harvey [1] 4:18 hats [1] 35:23 hazard [4] 61:15 112:21 124:23 126:19 hazards [6] 23:20 82:9 82:18 112:15,19,21 head [2] 36:10,13 heading [1] 57:14 health [23] 23:20 24:8 36:4 40:5,21 41:5 43:10 50:7 51:11 55:13 60:9 61:9,15 64:19 72:20 73:1 73:4 82:21 98:17 112:15 112:19 124:23 126:19 hear [2] 5:3 95:1 heard [10] 5:5 69:13 93:19 102:3,11,12 112:23 112:25 113:3,5 hearing [1] 68:13 hears [1] 68:15 HECKSCHER [1] 3:16 hell [2] 53:20 123:10 HELMS [1] 3:11 help [3] 68:1,2 93:6 hereby [4] 4:1 131:3,10 132:9 hew [1] 104:17 hiatus [1] 18:17 high [10] 27:25 28:2 56:19 68:16 69:5 73:13 80:19 91:5 92:20 93:1 highest [1] 89:25 highly [1] 57:18 hindsight [1] 125:7 history [2] 19:21 104:8 hold [4] 25:22 59:23 65:22 98:16 hollering [1] 11:20 homogeneous [3] 8:15 9:1 10:3 honored [1] 77:16 horrid [1] 54:15 hour [1] 126:14 hours [1] 2:13 house [1] 35:9 human [12] 40:19 41:9	46:5 51:12 52:11,11 61:15 62:25 82:21 109:10 124:23 126:19 humans [6] 40:24 57:20 82:10 107:17 108:24 109:3 Humprey [3] 48:23,23 48:25 hydrocarbon [5] 8:17 11:8 25:5,7,12 hydrocarbons [3] 7:1 11:10,25 hygiene [1] 36:14 hygienist [2] 68:22 69:6 hygienists [1] 36:16 -I- IBT [3] 108:7,9,14 ICF [9] 91:8,13,15 92:9 127:15 128:9,14,20 129:5 idea [3] 53:22 110:19 126:4 identification [14] 32:24 41:23 45:9 47:17 54:21 57:8 58:10 64:10 65:12 71:15 78:7 90:18 93:23 127:25 identify [1] 75:11 II [2] 3:4,4 ill [2] 40:21 41:5 illness [2] 46:6 52:11 ills [1] 52:11 imagine [2] 94:22 129:2 immediate [1] 72:6 immediately [1] 59:24 impact [1] 44:6 implement [3] 13:25 14:4 32:5 implications [2] 74:25 76:14 important [1] 60:5 importantly [1] 40:22 improper [1] 20:21 in-house [3] 35:7,9 76:24 inaccurate [1] 130:20 inadvertent [2] 109:17 109:18 Inc [7] 2:7,16,23 3:15 65:14 91:8 128:9 Inc. [1] 128:20 incident [2] 110:10,17 incidental [2] 42:11 44:22 incidentally [1] 42:18 include [3] 11:14 19:9 111:17 included [7] 11:10 26:12 27:5 41:18 58:22 80:3 111:18 includes [1] 52:2 including [4] 27:4 82:21 93:1 105:11 incorporated [1] 36:1	independent [4] 43:11 50:17 72:21 74:11 independently [1] 51:22 INDEX [2] 1:1,7 indicated [1] 130:14 indicates [2] 40:20 129:21 indicating [1] 102:16 individually [1] 2:4 industrial [13] 12:13 13:10,16 14:6 17:14 20:19 20:19 21:5 36:14,16 68:21 69:6 109:25 industries [7] 2:6,23 3:15 29:13 96:13,21 124:14 industries' [1] 29:21 industry [9] 26:7 31:24 32:3 65:21 66:2,17,20,21 74:16 inflammatory [1] 82:2 information [75] 16:5,6 16:23 23:20 24:15 35:25 36:3,7,17,19 37:3 39:3,22 39:24 50:12 55:13 56:14 56:17,18 57:2,3,5 58:21 58:22 59:12,14,22 60:1,6 60:11,25 61:1 62:9 63:16 65:14 68:1,2,7 73:17,20 73:23,23,24 74:8 76:20 76:20 79:9,18 82:13 84:7 84:9,18 86:1,2 87:4 88:15 89:21 91:13,14,16,24 92:2 92:3,8 110:4 116:7 121:5 125:23 126:3 128:9,13,13 128:20,22 129:4 ingest [1] 109:5 ingested [3] 108:23 109:2,21 ingestion [3] 38:23 40:17 109:6 inhalation [2] 109:7,18 initial [1] 71:1 injury [2] 22:24 23:12 inorganic [7] 6:6,7,8,9 6:10,11,14 input [5] 30:15 44:2 59:1 59:7 98:3 inquiries [3] 21:17 47:13 58:19 inside [1] 76:8 insignificant [1] 44:7 instance [2] 100:20 118:5 Institute [6] 25:14,15 26:18,20 29:11 108:5 instruct [1] 52:23 insurance [1] 22:25 intend [2] 109:2,10 intended [5] 105:25 109:6,7,15 119:1 inter-agency [1] 60:14 interest [2] 34:23 61:2 interested [1] 132:20	interesting [1] 7:17 interim [1] 12:12 intermediates [1] 14:18 interpretation [2] 36:12 41:2 interpretations [1] 36:4 intervened [1] 28:21 intervenor [1] 29:10 intervention [2] 30:11 31:10 intriguing [1] 7:17 introduced [1] 72:17 inventory [1] 18:4 investigate [1] 9:1 invited [1] 52:15 involved [27] 7:24 8:14 22:25 23:12,14,15,16 24:22,25 25:17,25 26:1,9 26:15,19 28:9,18,20 30:14 30:16 31:2 60:20,21 73:24 75:5 98:20 104:6 involvement [6] 31:2,3 76:17 84:5,11,23 involving [1] 20:18 issuance [1] 28:23 issue [16] 18:25 22:23 23:5 29:6,8 44:20 57:18 60:23 61:16 81:19 91:12 95:7,24 124:8 125:24 126:5 issued [1] 61:13 issues [11] 21:13 26:11 29:9 34:8,13 55:15 58:19 62:16 63:22 68:12 72:22 item [1] 60:6 items [2] 18:9 64:4 itself [4] 23:9 39:3 111:23 113:9 -J- J [3] 63:17,17,18 Jackie [1] 28:25 January [4] 33:20 41:12 41:14 124:1 Japanese [1] 15:11 JBS [1] 2:4 Jefferson [1] 7:4 Jersey [11] 2:1,21 3:5,9 3:22 8:7 81:15,16,20,24 96:11 JH [1] 72:12 Joan [3] 2:2,3,22 job [11] 10:25 12:12 14:4 21:14 30:21 34:2 53:4 64:3,6 68:9,11 jobs [1] 9:2 John [10] 2:11 4:9,18 33:9 41:25 59:18 64:12 72:16 131:3,24 Join [1] 51:16 joined [3] 25:19 63:24 70:17 journal [1] 65:1	journals [1] 8:23 Jr [1] 3:11 judge [2] 22:18 31:19 judgment [1] 39:19 July [1] 127:14 jump [1] 28:2 jumped [1] 20:24 Jumping [1] 16:15 June [2] 19:24 21:7 justification [1] 31:21 -K- K-I-L-G-O-U-R [1] 78:10 Kaley [23] 70:16,18,21 71:4,19 73:6 74:4 75:18 77:17,20,25 78:9,16 89:5 89:22 90:2,3,10 129:9,14 129:19 130:6,22 Katz [3] 48:8,16 83:6 keep [3] 11:20 85:21 95:20 kccping [2] 16:22 18:10 Kellogg [4] 8:5,10,11,19 Kent [5] 69:15,16,17 71:7 130:21 kept [1] 113:20 key [3] 124:8,14 126:6 kids [2] 56:19,20 Kilgour [8] 69:10,19 70:10 78:9,16 89:15,18 130:5 kill [1] 63:9 killed [1] 126:12 Kimbrough's [1] 108:4 kind [6] 43:1 75:3 80:21 108:18 119:10 121:6 kinds [3] 56:14 77:9 91:10 knew [8] 46:1 58:23 63:3 75:5 101:9,12 115:3,4 knowing [2] 80:22 86:17 knowledge [15] 24:16 27:17 30:3 37:22 59:1 63:21 80:1,4 94:9 102:7 102:14 119:11 120:22 121:5 122:13 knowledgeable [2] 22:17,21 known [7] 22:21 39:22 53:16,18 59:19 76:21 115:15 knows [8] 65:21 66:2,17 66:25 67:1 76:14 120:1 120:12 Kuncaitis [3] 2:17 4:4 132:5 -L- L-95-CV [1] 2:4 L.L.P [1] 3:11 lab [1] 8:9
---	--	---	--	--

label [1] 57:19 labeled [1] 41:7 labels [1] 110:3 laboratory [4] 8:7,8 11:18 75:7 LAE [1] 3:3 Lancaster [3] 68:17 70:13 71:2 large [1] 27:22 Larry [5] 63:17,17,18 78:22 80:7 last [7] 41:6 57:25 75:23 78:21 94:6,7 129:21 late [2] 27:14 110:15 latest [1] 65:9 LATHAM [1] 3:8 Laurel [1] 3:5 lawful [1] 4:10 lawsuit [7] 28:21,22 29:9 30:11,16 31:11 96:19 lawsuits [1] 31:15 LD [2] 46:25 109:4 leader [6] 10:9,12,23 11:1 11:3 117:10 learn [2] 17:23 67:6 learned [1] 80:12 least [1] 37:16 led [1] 15:1 left [5] 11:4 25:3 38:11 63:24 70:22 legal [4] 71:24 76:13 77:10,13 legislation [1] 18:21 legislative [1] 41:8 less [1] 38:3 letter [52] 1:9,10,10,12 1:12,14,15,16,16 41:21 41:24 42:2,4 43:1,5,15,17 43:17,20 44:10,20 45:7 45:10,13 47:20 48:7 54:19 54:23 55:2,7,11,21 56:25 57:6,10,12,17 64:25 78:5 78:9,15,22 79:5,24 80:5,6 93:21 94:12 95:7 97:25 127:14,23 letters [11] 47:3,8 82:14 82:16,24 83:1,2,3,4 95:22 105:20 level [6] 40:17 69:5 89:25 91:5 92:21 93:1 levels [4] 56:18 110:20 110:20 111:8 Levinskis [5] 36:13 40:3,4,25 41:16 Liberty [1] 3:17 line [1] 51:10 lines [1] 72:18 lineup [3] 78:21 119:13 121:1 link [1] 51:13 list [8] 18:13 19:3 63:5 80:9,14 90:13 94:1 130:18 listed [3] 47:2 50:19	78:19 listing [2] 63:7 71:22 lists [2] 22:20 124:18 literature [12] 36:5 43:10 50:8 54:11 102:24 103:4 103:6,10,24 105:19 109:22 113:8 litigation [2] 23:16 72:3 liver [4] 113:3,10,13,17 lives [1] 124:17 LLP [1] 3:16 lobbied [1] 30:10 lobbying [2] 28:18 30:5 lobbyists [3] 28:19 30:4 30:8 location [1] 47:7 logical [1] 14:21 long-term [1] 46:6 look [14] 39:25 40:7 49:9 53:21 56:5 74:12 94:7 95:19 104:8 108:12 124:6 126:16 128:10 129:23 looked [12] 7:17 40:1,2 51:18 52:12 53:13 56:16 81:11,12,13 99:16 108:20 looking [6] 9:2 14:19 74:22 80:6 100:15 108:17 looks [2] 55:12 127:20 lost [1] 127:1 Lothar [1] 2:3 lots [3] 20:12 35:15 80:22 Louis [6] 2:16 45:21,25 46:2 59:18 132:4 low [2] 36:22 62:4 -M- M [1] 3:8 MAE [8] 33:9 45:12 47:21,23 48:1 78:10 127:18,18 Macrtin [4] 2:2,3,3,22 magazine [1] 65:1 magazines [2] 8:24,24 magistrate [2] 20:17 22:16 Mahoney [4] 67:19,20 67:21 68:13 major [11] 8:6 28:10 37:13,15 48:12,13 56:12 66:19 67:24 74:1 99:15 majors [1] 66:21 makes [3] 46:3,14 121:24 man [1] 74:16 Management [1] 35:4 manager [13] 11:7,13,22 12:4,18 14:2 19:19,22 20:3,25 21:9 34:5,10 managers [1] 59:15 manner [1] 22:23 manufacture [10] 11:17 15:11 25:6 42:11 104:23 105:2,7 106:14 109:19 112:1	manufactured [6] 17:16 17:17 42:17 46:7 116:1 118:8 manufacturer [6] 28:16 58:1 60:19 99:15 114:23 115:2 manufacturers [14] 26:3,4,13 27:1,3,5,10 28:11 30:4,7 31:1 38:10 66:7 114:19 manufacturing [11] 11:24 12:3,20 14:5 15:15 18:5 38:13,14 104:16 105:10 106:13 March [6] 45:12 46:9 47:20 48:8 55:8 60:15 mark [4] 71:12 90:14 93:20 127:15 marked [35] 1:8 32:20,23 33:6 39:13 41:22 45:8,14 47:16,19 48:5 49:13 50:3 54:20 57:7 58:9,11 64:9 64:16 65:11 71:14,17 78:6 78:13 90:17,20 93:22,25 98:4 123:24 127:13,22,24 128:5 129:18 market [1] 125:10 marking [1] 123:15 master's [1] 6:2 mastering [1] 17:6 material [2] 103:19 107:21 materials [1] 108:4 matter [10] 10:1,19 17:25 24:1 76:19,23 77:2 91:22 91:25 111:16 may [22] 4:3 8:3 18:25 45:25 54:10 69:24,24,25 83:19 89:14,15 90:5 91:21 100:25,25 107:15,16,18 109:5 111:11 116:22 118:20 McCarville [2] 72:5,14 mean [13] 17:7 35:9,10 36:23 52:22 77:11 88:4 101:7 102:8 107:11 114:14,17 126:2 means [1] 36:24 measurable [1] 42:20 measure [1] 124:22 media [9] 21:19 41:9 43:13 73:14 80:20 81:15 81:22 82:3 126:8 medical [18] 7:4 22:3 24:5,11 36:5,6,10,11 38:24 39:4,7,8,11 40:5 49:22 53:7 59:7 72:22 meet [2] 15:23,25 meeting [45] 7:15 34:20 69:3,4,5 70:12 71:2,9 72:17 77:1 83:12,13,13 83:15,18 84:3,14,16,20 85:9 86:11 87:24 88:23 89:3,3,12,13,24 91:1 92:18,20,21 93:4 94:10 100:10 129:12,13,13,19 129:22 130:2,7,8,10,19	meetings [5] 25:9,18,20 69:7 90:9 member [9] 25:13 27:9 27:18,19 30:17 35:18 55:4 63:18 83:5 members [2] 21:25 26:6 membership [2] 27:23 27:24 memo [5] 1:15 71:13,19 90:16 129:18 Memphis [1] 5:23 mentioned [4] 7:11 28:18 96:25 130:4 met [9] 18:2,12 31:13,13 31:14 61:3 86:11,12 102:4 methodology [3] 75:6 75:15,16 methods [1] 16:24 Michigan [4] 48:12,20 49:1,5 mid [2] 67:11 99:23 middle [1] 72:15 might [14] 23:21 63:8 67:18 69:23 76:7 112:12 119:20 122:9,9,11 125:19 128:8,25 131:7 mildly [2] 46:17 57:22 miles [1] 126:14 million [1] 29:5 mind [4] 51:20 103:14 112:21 119:25 Mine [1] 72:10 mineral [9] 2:8,24 62:5,8 62:18 63:1,7,12 115:16 minimum [1] 111:9 minute [1] 12:11 misrepresented [1] 43:13 Missouri [5] 2:17,19 132:2,7,23 misunderstand [1] 118:19 misunderstood [1] 118:20 Mitchell [1] 130:13 molecule [1] 42:24 moment [1] 70:18 moments [1] 46:18 monitoring [1] 106:4 Monsanto [145] 1:13 2:8 2:24 3:7 7:20 8:2,4,22,23 9:9 12:13 13:16 17:1 22:10,13 24:18 33:9 35:8 36:6 37:5,11,12,12,15 38:12,24 45:18,21,23 46:6 47:4,8,9,10,11 49:23,24 50:14,16 53:3 54:5 55:6,9 56:13 57:15 58:8,13,17 59:3 60:18,24 61:20 63:19 63:24 64:2,3,5 66:6,23 67:14,21 68:4 71:4 76:7 77:14 79:16,21 84:11 85:8 85:21 86:5,23,25 87:3 88:1,6 92:7 93:9,14 94:13 94:21 95:6,8,13 96:22	97:5,6,11 98:3,22 99:2,15 99:22 102:20,21 103:25 104:7,13,25 105:6,14,23 106:12,17 107:2,8,19 108:11,22 109:2,10,23 111:21,25 113:9 114:7,13 114:22 115:1,3,4,18,20 115:22 116:1,6 117:14 118:8 119:13 121:1,14,17 121:23 122:3,4,8 125:2 125:12,13,17 126:16 128:8,12,19 129:15 Monsanto's [18] 22:3 24:15,16 35:9 36:5 58:18 60:7 61:6,12 73:15 76:13 84:4,23 85:2 88:11 104:8 104:15,21 month [1] 16:8 months [3] 84:1 88:24 91:6 MOORE [1] 3:11 morbidity [1] 40:21 morning [5] 4:16,24 98:4 98:20 116:8 MORRIS [1] 3:16 MOSKOWITZ [1] 3:21 most [9] 12:24 28:10 37:25 51:18 57:13 62:12 73:3 87:20 90:22 motivates [1] 125:9 motor [7] 62:6,7,8,19 63:2 63:9,13 move [3] 12:3 61:21 63:8 moved [8] 12:1,13,19,25 13:9,11 14:1 19:16 moving [1] 123:14 MP [3] 54:24 55:3,4 Ms [9] 1:4 33:5 48:7,16 66:10 115:8,12 116:11 127:9 Mt [1] 3:5 MULLISS [1] 3:11 MW [4] 8:5,9,11,19 -N- N [1] 3:1 NaCL [1] 40:14 name [9] 4:17 22:19 29:1 69:9,12 90:13 96:10 115:13 131:10 named [1] 130:13 names [3] 25:21 68:20 129:23 Nancy [3] 2:17 4:4 132:5 Nashville [1] 5:25 National [4] 25:9 26:12 27:1 108:5 Natural [1] 49:4 nature [1] 19:20 NBC [1] 114:6 necessarily [1] 81:18 necessary [3] 24:12 76:3 131:7 need [4] 5:8 51:5 75:22
---	---	--	---	---

119:21 needed [4] 36:3,7,17 67:25 neither [1] 132:14 NEMA [5] 29:11 31:6 32:12 35:21,22 neurological [1] 82:22 never [8] 35:17 46:4 82:19 102:16 108:11 117:6,10 123:9 new [42] 2:1,21 3:5,9,22 8:6,7,14,25 9:2,3,4 11:14 12:23 13:9 14:9,10,22 15:12,16 16:3,4,20 20:17 22:16 23:4,6,7 28:1 31:8 31:22,23 32:1 44:21,22 56:8 81:15,16,20,24 96:11 113:25 Newark [3] 3:9,9,22 news [9] 1:11 8:25 21:19 43:13 47:22 50:2 80:20 81:15 114:6 newspaper [3] 48:12 65:1 67:10 next [3] 11:6 86:11 88:20 NIOSH [6] 39:9 111:9 111:11,12,17,18 nobody [4] 44:15 52:17 53:11 63:1 nods [1] 92:17 non [1] 24:3 non-technical [1] 59:13 nonacute [1] 62:14 none [2] 40:23 51:11 nonflammable [1] 124:13 nor [2] 132:15,19 normal [1] 99:4 North [2] 3:12,13 Nos [1] 47:16 Notary [5] 2:18 4:4 131:18 132:6,23 note [2] 60:5 79:22 notes [2] 74:23 113:12 nothing [8] 7:18 61:12 88:13 111:3,5 127:7,9 130:24 notice [2] 42:9 56:3 Nova [3] 1:14 65:10,15 November [2] 2:13 42:5 now [23] 2:20 10:15,17 12:20 13:2 21:5 29:1 30:3 44:5 47:19 48:14,19 49:9 52:13 70:5 71:12 87:17 90:23 98:2 114:14 116:20 116:22 124:6 noxious [3] 110:6,7,7 number [3] 47:23 89:7,8 numbered [5] 33:9 46:4 47:21 48:1 78:10 numbers [2] 111:1 127:18	O [1] 3:12 o'clock [2] 2:14,14 O'Connor [30] 1:3,4,5 3:3,21 33:5 51:16 66:10 68:23 83:15 96:4,9,10 103:3,5 106:22 107:6 115:6,8,12,13 116:11 118:2 123:18,22 126:21 126:23 127:2,7,9 O'Neill [5] 63:17,17,18 78:22 80:8 object [34] 23:23 24:6 43:22 44:11 46:19 51:14 53:1 54:4 59:10 62:20 66:8,10 73:10 74:6 80:15 82:15,25 84:13,24 86:7 87:16 88:9 93:16 94:16 95:16 109:13 110:22,23 112:17 114:24 118:11,16 119:16 126:25 objecting [1] 66:14 objection [22] 44:13 51:16 61:10 86:8,9 87:15 87:17 88:3 102:6 103:2,3 103:8 106:20 107:7 108:25 118:2 119:22 121:4 122:23 125:6 126:24 128:15 objectionable [2] 86:15 86:17 objective [1] 22:23 obligations [1] 17:2 occasion [2] 4:21 97:10 occasionally [1] 43:13 occurred [2] 90:25 99:22 occurrence [1] 42:20 October [3] 65:15 94:8 94:10 odd [1] 6:23 off [4] 6:24 41:17,19 47:18 offer [1] 74:4 office [6] 21:16,22 47:10 47:14 67:19 122:1 officer [2] 42:1 132:7 offices [4] 2:15 3:3 8:6 25:22 official [1] 19:16 Ohio [2] 34:19 35:2 oil [16] 8:17 19:12 25:11 62:5,6,7,8,8,18,19 63:2,2 63:7,9,13,13 once [5] 12:21 25:25 56:15,23 89:15 one [47] 3:9,17 4:21 6:9 6:10 8:25 9:5 14:22 29:6 30:13 32:12 35:2 36:17 37:7,14 41:1 42:12 43:2 46:4 49:22 51:23 53:19 54:12 55:25 59:14 63:11 63:25 64:4 68:5 72:10,25 73:21 75:2,11 76:15 80:1 85:23 87:13,20 89:7,8 90:1 92:20 97:10 121:13 123:3 130:5 ones [3] 24:25 38:13	39:20 open [12] 61:22 104:11 105:2,8,16 106:13,19 107:4,8,19 125:20 126:18 operating [4] 13:1,25 14:5 17:9 operations [9] 13:11,12 13:14,17,20 14:2 16:15 19:17 53:3 opinion [5] 43:18,19 98:5 98:12 120:24 opinions [1] 108:1 opportunity [5] 9:4 76:12,25 104:7 105:19 opposed [1] 89:5 optically [1] 6:19 option [3] 73:15,21 74:1 options [3] 73:7,9 74:5 oral [4] 33:25 38:23 40:16 46:15 order [3] 16:8 53:4 62:4 ordinary [1] 68:3 organic [3] 6:11,13 102:23 organizations [6] 24:23 25:23 28:4,17 34:16,25 original [2] 28:23 104:15 originally [2] 34:18 35:1 OSHA [4] 69:22 70:3 111:12,18 otherwise [2] 75:17 132:20 ought [2] 74:11 80:23 ours [1] 67:25 outcome [1] 132:20 outlining [1] 18:1 output [1] 15:14 outside [4] 39:15 47:12 76:8 130:15 outstanding [1] 5:10 overall [3] 17:13 52:1,6 overview [3] 50:5,15,17 own [5] 2:4 21:19 51:20 81:17 88:12 Owners [1] 35:4	27:18,19,20,22 28:6,7 30:18 32:17,18,19 35:19 50:21 paper [10] 46:22 49:9,12 52:15 53:23 54:17 58:20 81:23 114:5,6 papers [7] 49:8 52:6,9 53:15 56:20,21 126:8 paragraph [11] 43:5 46:3 46:14 48:21 57:17,25 60:4 60:6 62:1 72:16 75:23 parallel [2] 38:16 81:18 parameters [1] 124:10 Pardon [1] 62:8 parenthetical [1] 40:13 Parliament [2] 55:4 83:5 part [12] 11:19 26:21 31:9 34:2 43:15 68:9 77:5,7 79:15 113:14 127:1 130:3 participant [1] 60:25 participate [1] 75:24 participated [2] 50:14 73:7 particular [21] 6:4 7:21 39:12 40:5 57:2 58:24 60:2,2 63:21 76:22 86:6 86:11 97:20 106:6 110:9 117:25 118:1,3 119:4 122:14,17 particularly [3] 44:4 68:6 119:3 parties [2] 132:15,19 parts [1] 29:5 passage [2] 112:2 114:9 passed [3] 13:22 107:17 111:20 past [2] 49:18 54:13 patently [1] 51:20 pathologists [1] 98:14 pay [3] 25:20 93:6,9 PCB [44] 18:3 20:18 21:13,13,15 25:1 26:3,8 26:15 27:12,18 28:5,7,13 28:23 29:3 32:19 34:8,13 34:20 35:19 38:6 46:7 55:15 56:7,9 60:7 61:7,21 62:3,16 63:22 67:25 68:5 68:12 80:12 81:17,21 100:12 112:20 120:4 123:24 124:9 126:6 PCBs [171] 1:11 11:10 17:15,17,20,24 18:4,15 18:15,18,19,20,23,24 19:1 19:2,3 20:4,14,21 21:1,18 21:21 22:22 23:13,15,22 24:8,10,16 25:25 26:1 29:25 30:2,23 31:3,3 33:18 34:1,24 36:21,22 37:3,8,13 38:10,14,15,22 39:22 40:22,23 42:11,16 42:17,21,24 43:11,12 44:6 44:24 46:15,22,25 47:5,9 47:25 48:17 49:14 50:7 50:15,22 51:1,12,13 52:7 52:10,11 53:3 54:13,14 55:13 56:12 57:19 58:1,5 60:3,14,19,23 61:3,13,14	61:16 62:4 63:23 64:2,3,7 64:12,19 65:3 67:6 70:6 72:25 73:1,4 75:10 79:19 79:21 81:10,12,15 82:1,8 82:9,20 84:7 91:17 96:14 96:18 98:6,10,17,21 99:5 100:13,16 101:8,11 104:6 104:10,16,22,23 105:1,8 105:11,16 106:10,13,14 107:8,12 108:1,22,23 109:2,11 110:20 111:22 112:1,10,15 113:1,7,12 113:21 114:2 115:20,22 124:8,10,13,18 125:4,14 125:15,15 126:5 127:5 penalty [1] 131:11 pending [1] 2:20 Pennsylvania [1] 3:18 people [37] 9:5 11:19 16:1 17:10,11 22:20 24:13 44:1 49:6 52:16 53:19,24 56:14 59:11 62:25 63:3 66:4 69:1,11 71:8,23 74:17,19 75:3 77:6,9 80:10 81:23 93:1 100:2 101:16 104:18,18 111:15 126:12 130:1,19 per [2] 29:5 104:2 percent [1] 38:2 perceptions [1] 58:4 performed [2] 98:13 113:20 perhaps [1] 124:11 period [7] 31:24 45:19 56:7 66:13 105:9 106:12 107:5 periodically [2] 83:9 84:1 perjury [1] 131:11 persistence [5] 60:9 61:8,24 107:9,10 persistent [1] 61:14 person [7] 62:16 64:3,5 69:17,21 70:1 90:1 personal [2] 22:24 23:12 personally [1] 30:13 perspective [6] 1:9 32:22 33:8,18 73:19 123:25 petrochemical [2] 8:13 11:18 petrochemicals [1] 8:16 petroleum [2] 8:12 25:9 Ph.D [2] 5:25 6:22 Ph.D. [1] 70:19 pharmaceutical [1] 14:18 phasing [2] 38:9,11 Phil [1] 129:2 Philadelphia [2] 3:18 7:4 phone [9] 86:13 87:1 88:22 89:2,7,8,9 91:5 110:12 phosphate [2] 102:19,21
--	--	--	--	--

-O-

-P-

phosphates [1] 102:23 phrasing [1] 106:25 piece [1] 58:22 piecemeal [1] 73:20 place [9] 3:17 42:19 48:18,19 93:3 95:14 96:16 105:23 111:20 placed [1] 114:20 Plaintiff [2] 3:2 4:2 plaintiffs [4] 2:5,22 22:19 96:12 plant [5] 15:14 23:3,10 28:13 59:15 plants [6] 14:7 16:20 17:11 21:15,19 25:12 plastic [4] 100:23 101:6 119:3,8 plasticizer [13] 101:5,6 101:18 102:25 104:1 118:25 119:3,5,13,17 120:20,25 121:16 plasticizers [23] 99:4,9 99:14,16 100:21,22 101:3 101:4,8 102:20,22 117:7 117:11,14,17,20,23 118:7 118:22 119:7,9 121:6,7 plastics [1] 119:9 plastisol [6] 101:21 102:1 117:25 118:4 120:1 120:13 player [1] 37:15 players [1] 66:19 plus [1] 119:8 point [14] 13:8,21 21:13 25:2 31:22 32:9 45:24 53:3 54:8 56:12 61:20 62:16 68:22 88:23 points [1] 86:15 policy [9] 58:18 76:19 76:23 77:2,3,5 91:25 92:2 106:10 political [1] 81:19 polychlorinated [5] 7:1 9:16 33:8 58:13,25 polymers [4] 11:9,11,25 25:12 populace [1] 41:9 portfolio [1] 15:6 position [19] 9:8,21 10:8 10:22 12:10 13:6 16:17 18:22 19:25 20:5 21:1,4 22:15 29:18,21 72:7 93:12 93:13,18 positions [1] 116:6 possible [2] 57:5 79:9 Possibly [1] 63:5 potassium [1] 15:7 Potter [6] 92:21 93:5 94:13,18,23 95:1 pounds [2] 37:2,23 power [6] 19:11,14 27:6 35:23 104:20 105:4 PR [1] 80:13 practical [1] 42:25	practice [1] 11:21 precise [1] 19:23 prepared [2] 18:13 79:8 present [4] 3:20 16:5 35:8 52:15 presentation [2] 35:5 35:12 presentations [7] 33:25 34:1,13 35:7,13,14 39:15 presented [1] 33:11 preservative [1] 15:5 preservatives [2] 12:25 15:8 president [3] 71:7 72:13 92:23 press [5] 48:8,11 50:1 54:12 83:7 pressed [1] 25:7 pressure [1] 36:22 pretty [1] 69:4 prevent [1] 124:19 preventing [1] 124:17 previously [4] 43:25 65:3 77:12 129:17 primarily [15] 8:7,12 17:25 18:7 19:7,11 28:14 33:24 37:5 50:17 59:5,11 74:2 105:3 106:15 primary [2] 15:4 21:11 principals [1] 40:12 principles [1] 7:6 private [1] 74:16 problem [20] 67:18,25 68:5 70:5,7,12 73:12,14 73:22 76:23 80:12 81:1,6 102:5 104:23,24 121:9 124:9 126:6 129:6 problems [4] 80:17 82:21,22 125:19 procedure [1] 105:23 proceed [1] 88:2 process [1] 15:10 processes [3] 8:13 26:6 42:23 procuring [1] 25:11 produced [6] 2:12 4:10 37:3,8 79:23 127:17 producer [1] 37:13 producing [1] 8:16 product [15] 12:21,22,23 13:1 20:2,25 21:8 34:9 106:3,6 109:20 123:7 125:9 126:9,9 production [1] 16:24 products [21] 11:15,18 13:2 58:18 64:1 66:2,18 66:22,23,25 67:2 99:18 114:8,15 119:13 121:1,16 121:18 122:8 123:4 125:16 Professional [3] 2:18 4:5 132:6 profile [1] 73:13 program [3] 65:15 75:13	75:15 programs [1] 75:1 progression [1] 14:22 projects [1] 22:10 promising [1] 12:24 prompted [3] 42:7 81:2 81:5 promulgated [1] 13:23 proper [3] 73:18 75:8,16 properly [1] 75:14 properties [2] 36:21 117:17 propose [4] 31:8,21,22 31:25 proposed [10] 30:6,11 31:23 32:1 42:9,13 43:3 44:19 56:3 82:4 proprietary [2] 122:25 123:3 provide [18] 23:19 24:14 30:18,22 35:25 39:21 57:4 59:12 60:1 68:6 79:8 84:7 84:8,17 87:3 88:14 92:3,8 provided [10] 28:20 37:6 50:13,16 60:25 76:19 92:14,15 102:24 103:12 providing [1] 128:23 provisions [1] 17:20 PTAs [1] 34:22 public [15] 2:19 4:4 21:20 39:1 45:17,20 55:6,16 59:6 63:19 78:22 116:7 131:18 132:6,23 published [19] 33:21 39:8 46:24 50:6 51:19,22 51:25 56:4 60:13,15 61:4 62:13 65:2 72:25 76:20 110:4 111:1,13 114:3 purchased [1] 105:15 purchasing [1] 121:25 pure [1] 109:25 purposes [1] 103:22 put [23] 11:20 51:9 52:9 52:17 56:17,24 58:20 59:3 59:5 60:23 73:18 74:9 79:10,17 80:8,13 82:23 83:1 101:21 111:20 118:4 119:22 125:9 putting [2] 50:15 126:17	80:17,22 82:4 84:8,19,20 85:16,18 87:2 95:21 96:3 96:9 100:24 115:12,14 116:12,14,20,21,25 118:25 123:17,22,23 127:12 128:2 quick [2] 32:25 96:4 quite [3] 23:24 52:7,16 quote [1] 98:21 quoted [1] 65:20 quotes [1] 66:1 -R- R [1] 3:1 racemization [1] 6:19 raised [2] 81:14 82:2 ramifications [1] 77:10 ran [1] 8:23 range [1] 40:17 ranged [1] 34:21 rather [4] 60:9 61:8 63:13 126:15 Ray [1] 74:12 reaction [1] 120:5 reactions [1] 42:19 read [22] 16:19 41:1 44:2 49:17,19 51:2,4,5,7 65:16 80:5 87:22 90:23 108:14 108:15,20 114:2 119:2 127:2,4 128:3 131:4 readable [2] 50:24 59:12 readily [2] 36:25 124:15 reading [2] 17:25 65:24 ready [1] 16:17 real [1] 96:5 really [7] 7:18 29:17 52:7 70:11 73:11 106:4 118:24 reason [4] 5:15 80:24 103:12 130:18 receive [2] 47:3 83:10 received [3] 53:23 58:19 89:21 receiving [2] 6:22 94:3 recent [2] 73:3 87:20 recess [4] 33:2 67:4 96:6 103:14 recognize [1] 42:17 recollection [11] 39:6 73:8,11 74:24 77:25 89:10 89:17 90:24 114:11 128:11,18 recommendation [1] 24:10 recommendations [1] 75:19 recommended [1] 120:8 recommending [1] 52:24 record [18] 4:17 16:22 18:10 33:3,6 41:24 45:10 47:18,19 54:22 57:9 58:11 64:11 67:5 78:8 79:22 103:9 119:22	recurring [1] 56:16 reduced [1] 132:13 refer [2] 17:7 122:6 reference [23] 36:22 46:21 48:21 49:12 50:1,5 55:24 56:1 62:17,18,23 63:12,15 72:18 73:5 75:23 79:24 94:6 105:20 109:24 112:6 113:25 114:1 references [1] 108:4 referred [7] 22:8 31:15 32:18 49:17,22 91:2 92:19 referring [4] 32:11 70:3 73:5,6 refineries [2] 8:13 25:9 refining [2] 8:18 25:11 refresh [3] 90:24 128:11 128:18 refute [1] 20:22 regard [10] 24:16 29:19 74:5 75:19 77:21 98:5 99:4 112:10 113:21 123:24 regards [4] 106:10 107:19 110:9 111:5 Register [1] 56:5 registered [5] 2:18 4:5 28:19 30:8 132:5 regs [1] 28:13 regularly [1] 16:12 regulated [2] 15:9 28:14 regulating [1] 14:17 regulation [2] 28:24 42:14 regulations [31] 13:25 14:5 16:19,21 17:19 18:1 18:3,11,24 21:16 24:3 26:8 28:1,24 29:3,19,24 30:1,6,10 31:9,22 32:1,5 38:16,17 81:17,19,21 98:25 111:16 regulatory [12] 14:13,21 14:22,23 16:2 21:19 28:21 41:8 52:3 60:24 72:9 104:17 relate [4] 6:25 7:2,12 90:9 related [13] 7:8 14:3 17:20,24 20:13 21:21 29:25 30:1 47:5,11 58:25 74:25 132:15 relates [2] 40:4 91:20 relating [6] 21:18 43:10 47:9 50:7 95:14 111:3 relations [6] 45:18,21 55:17 59:6 63:19 78:23 relationship [4] 52:10 98:6,10 108:1 relative [1] 132:17 release [10] 1:11 47:22 50:2,2 67:10 128:9,12,19 128:22 129:4 remain [8] 9:12 10:4,12 11:3 12:4 19:22 20:5 107:12 remained [1] 20:7
--	--	--	---	--

remains [1] 41:14	resolution [1] 104:24	44:19 52:4 56:6,10	send [2] 57:1,1	site [3] 20:19 23:3 100:10
remand [1] 28:24	resolved [1] 31:19	run [2] 28:12 43:20	sending [1] 43:21	sites [1] 20:13
remediation [2] 94:14	resources [5] 22:3,5		sends [1] 122:1	sitting [1] 120:24
95:24	36:18 49:4 53:5	-S-	Senger [3] 72:12 78:25	situation [2] 73:25 130:3
remember [36] 19:18	respect [5] 23:17 30:5,10	S [1] 3:1	senior [5] 9:22 10:4,23	situations [1] 124:18
29:1 49:7 62:17,22 64:22	124:8 126:5	S-C-H-O-F-I-E-L-D	11:3 117:9	six [3] 2:14 10:17 34:14
64:24 65:5 67:13 68:20	respected [1] 74:15	[1] 45:12	sense [2] 38:22 39:18	sketch [1] 5:21
69:11 70:10 74:1,21 83:21	respond [5] 55:7,14,15	S-E-N-G-E-R [1] 72:12	sent [4] 43:25 50:10 59:15	skin [4] 109:11,16,17,20
87:18 88:21 89:21 91:7	55:19 84:19	safety [4] 20:3,25 21:9	59:24	slight [1] 44:6
91:11 92:13,14,15 93:2	responded [5] 64:5 76:1	34:10	sentence [5] 40:13,19	slightly [1] 38:22
94:3,5 95:18 100:24	94:21,23,24	sake [1] 45:2	55:5 82:19 94:7	slowly [3] 45:6 61:21
103:15 113:11 129:5	response [4] 26:8 56:25	salary [2] 10:24 12:8	separate [2] 34:8 51:24	107:13
130:1,7,13,16,17	65:2 74:18 83:2,3 94:22	sale [1] 25:7	separately [2] 31:13	small [4] 18:9 42:20
reminder [1] 50:23	95:3	sales [5] 61:22 92:8 128:9	32:17	75:10 123:8
render [1] 131:7	responsibilities [5]	128:13,19	September [5] 57:9 94:4	smaller [1] 125:11
reoccurs [1] 103:17	15:1 21:1,2 34:2 43:2	salesman [3] 121:24	95:13,24 112:11	SMITH [1] 3:11
repeat [2] 5:4 106:24	responsibility [8] 14:17	122:10,21	sequence [1] 20:24	so-called [2] 97:4 125:24
rephrase [3] 5:4 107:1	15:5 17:6 20:3 21:12 58:3	salesmen [1] 122:16	series [1] 4:24	Society [1] 7:15
118:6	68:9,11	salesperson [1] 122:20	serious [2] 82:20 107:2	sold [3] 102:22 106:3
replacements [1]	responsible [7] 11:1	salespersons [1] 122:14	services [2] 22:6 65:14	111:22
124:15	17:10,11 23:1 34:8 77:17	salt [12] 40:14,15,16 46:16	set [6] 19:3 26:4,5,6 32:6	Solid [1] 26:14
report [12] 61:4,5,13	88:18	46:21 47:1 57:21 62:18	98:1	someone [2] 24:11 62:10
71:10 90:7,20 114:1,3	restricted [1] 19:3	62:23 63:1,13 82:13	sets [1] 81:17	sometime [1] 12:12
121:20,22,23 122:1	results [1] 53:14	sample [3] 79:25 80:14	setting [1] 18:9	sometimes [4] 22:1
Report/J. Craddock [2]	retained [4] 23:19 24:14	123:6	settled [1] 31:18	25:18 122:6,24
1:13 64:8	24:17 50:21	samples [2] 75:4,13	settlement [1] 31:10	somewhere [5] 12:16
reported [1] 72:14	retardancy [1] 103:18	sampling [2] 75:5,14	several [8] 19:7 29:8	13:13 39:5 71:10 103:14
reporter [7] 2:18 4:5 5:12	retired [3] 20:6,7 27:11	saving [1] 124:17	43:11 49:8 50:6 88:24	sorbates [1] 15:8
45:2 87:21 132:1,6	retiring [1] 38:1	saw [4] 46:18 56:1 67:9	91:6 124:18	sorry [3] 6:21 65:23 79:2
reporting [1] 16:22	review [9] 50:21 52:6	114:5	shares [1] 20:15	sort [7] 7:10 26:10 51:19
reports [5] 37:14 108:14	57:11 105:19 108:7,13,16	says [7] 33:17 40:14 55:5	Sheerman [4] 54:23 55:3	72:8 73:14 82:2 95:23
122:2,4,5	108:19 112:9	65:25 74:7 82:5 124:21	55:8,9	sorts [5] 20:12 26:14 27:7
represent [2] 96:11	reviewed [12] 39:7,12	Schofield [1] 45:11	sheet [1] 74:9	30:20 51:22
127:16	39:14,16,18,19 46:23	school [4] 5:24 7:4 56:19	shells [1] 61:18	soul [1] 124:9
representations [1]	51:23 53:15 73:3 97:13	111:9	short [3] 38:21 64:18	sound [1] 87:7
58:23	108:3	science [4] 56:19,21	115:14	source [4] 58:2 60:10
representative [2] 97:6	reviewer [1] 108:16	72:20,22	shortly [1] 68:17	81:12 93:10
97:11	reviewing [1] 18:11	scientific [7] 29:4 41:11	show [3] 43:12 124:3	sources [1] 100:12
representatives [3]	reviews [1] 43:9	43:9 53:23 55:18 58:2	129:17	speak [2] 45:6 89:18
28:5 32:12 76:13	revisit [1] 31:20	108:16	showed [6] 41:4 44:10	speaking [1] 89:10
Reputation [1] 22:17	revolves [1] 24:9	scientist [1] 53:17	44:12 51:13 79:9 83:4	special [1] 80:19
request [4] 56:15,16	right [21] 2:4 8:21 31:17	sc [1] 104:2	shown [4] 61:15 65:13	specialist [3] 9:11,13,22
94:21 95:7	32:14 33:22 66:25 71:1,5	searching [1] 124:9	97:14,17	specialization [3] 6:4
requested [4] 16:5,6	71:12 78:4,20 83:8 96:24	Seattle [1] 35:5	shut [1] 104:19	63:22,25
35:14 116:10	99:7 104:3 105:13 108:6	second [10] 14:24 48:21	side [2] 29:14 124:11	specific [15] 7:8 18:14
requests [1] 56:13	115:23 116:20,22 121:19	57:17 60:4 65:22 69:4	sides [1] 29:17	21:2 56:22 59:25 75:18
require [3] 15:17 38:6	risk [13] 58:4 74:13 124:6	72:15 79:15 89:3 94:6	signature [2] 4:6 128:4	77:24 80:4 84:4 100:1,6
80:18	124:7,22,22,23 125:4,24	secretaries [1] 22:1	signed [3] 41:17,19,24	100:17,24 101:5 120:14
required [7] 15:19 16:20	126:5,10,15,19	secretary [1] 56:25	significance [1] 63:12	specifically [15] 17:20
18:4,16,17 22:6 31:20	risks [2] 125:17 126:17	section [4] 40:4 55:22	significant [2] 40:22	17:23 29:24 30:9 43:24
requirement [2] 39:17	Robert [2] 45:11 78:9	82:17 125:25	106:17	77:20 82:17 83:20 91:11
85:25	Rocky [1] 93:2	see [11] 12:11 21:14 52:1	silos [5] 114:20,20,23	91:19,21 92:12 94:5
requirements [3] 16:22	role [1] 32:6	55:11 56:6 65:5 75:21	115:2,3	107:23 112:6
18:2,13	roughly [8] 11:4 12:9,12	94:24 103:20 107:1	similar [3] 40:14 62:5	specifics [4] 74:21 76:16
reread [1] 113:15	12:15 17:18 27:14 46:15	125:18	125:4	76:22 78:3
research [22] 9:10,10,12	72:15	seek [2] 36:7 88:6	simple [3] 7:14 54:1	specter [1] 81:14
9:18,20,22,22 10:1,4,9,12	round [1] 19:21	select [1] 123:3	103:6	speculate [1] 5:1
10:19 11:4,14,19,23 25:3	Roush [4] 36:12 40:2,25	sell [3] 12:21,22 15:13	simplify [1] 56:23	speculation [1] 122:9
99:3 117:1,6,9 130:10	41:16	selling [3] 13:2 105:1	single [2] 46:4 82:19	speech [1] 35:2
researcher [2] 117:14	rule [12] 42:9,10,11,16	123:13	sit [3] 52:17 79:12 119:11	speeches [1] 33:25
121:25	43:3 44:21,22 56:3,6,8,8	seminar [1] 7:21		Spirits [3] 2:8,24 115:16
reselling [1] 15:7	91:23	semiretired [2] 20:8,9		spoke [1] 69:18
reserved [1] 4:7	rules [7] 13:22 31:21,23			
resin [1] 120:4				

spoken [2] 89:14,15 spot [1] 59:17 SS [1] 132:3 St [6] 2:16 45:21,25 46:2 59:18 132:4 staff [4] 13:17 21:25 63:18 70:17 standard [3] 39:10 40:18 58:22 standards [9] 26:7 75:8 75:16 111:10,12,14,18,18 111:19 stapled [1] 79:22 start [1] 25:3 started [1] 16:16 startling [1] 52:8 state [11] 2:19 4:17 5:23 49:1,4 81:20,23 131:1 132:2,7,23 state's [1] 81:21 statement [15] 37:20 38:20,23 43:8 46:3,9,11 46:14,18 57:23 60:11 62:2 66:12,20 120:6 statements [2] 40:7 81:25 states [8] 2:1,20 37:1,13 57:25 82:9 124:7 128:21 statistical [2] 42:20 75:14 still [17] 13:7,16 17:15 27:16 33:4 37:17,23 38:3 38:5,7,13,14,15,18,19 43:18 46:11 stint [1] 21:3 STIPULATED [1] 4:1 stop [5] 61:22 104:9,16 105:1,10 stopped [1] 106:12 store [1] 18:15 stored [1] 18:20 storeroom [1] 81:13 straightforward [1] 74:21 Street [1] 3:12 stress [1] 28:1 strictly [1] 30:1 61:23 102:8 126:7 stringent [1] 111:14 studies [10] 40:23 41:1,4 49:5,6,18 51:12,18,21,24 53:13 54:9,16 62:3,13,14 98:13 108:2,3,4,7,15,19 108:20 109:4 112:5,10 113:14,15,19 study [14] 18:21 51:1,17 52:21,23,24 53:15 54:3 54:16 60:12,16,16 108:18 112:6 stuff [6] 11:20 71:11 75:9 91:10 108:18 119:10 subchronic [1] 62:2 subgroup [1] 26:21 subject [7] 6:18 10:1,19	24:1 60:2,3 76:9 subjects [2] 7:13 22:8 submission [1] 16:23 submissions [3] 15:17 15:21,21 submit [1] 22:20 submitting [1] 15:19 subpoenaed [1] 97:23 subscribe [1] 131:10 subsequent [3] 89:13 90:9 91:1 subsequently [1] 54:3 substance [8] 29:2 42:13 67:23 82:23 83:1 120:9 120:16 131:6 Substances [2] 13:21 14:3 substantive [1] 35:25 successor [1] 70:23 such [8] 53:25 72:24 126:9,18 128:16 131:5 131:9 suggest [2] 44:15 74:10 suggested [1] 74:12 suggesting [1] 103:25 suggestion [3] 128:7,16 128:17 suggestions [2] 119:22 119:23 suggests [1] 94:13 suitable [1] 124:15 Suite [2] 3:4,12 suited [1] 121:2 summaries [1] 50:8 summarizing [2] 71:19 73:1 summary [4] 55:25 60:14 128:9 129:18 summer [2] 13:23 97:22 super [1] 20:13 supervisor [1] 72:6 supplied [2] 103:6 116:1 support [2] 41:11 54:17 supporting [1] 29:22 supposed [1] 56:9 surprised [2] 52:16 53:11 surprising [1] 52:14 surveys [1] 30:22 suspected [1] 101:25 switches [1] 19:13 sworn [3] 2:12 4:10 132:11 symposium [1] 48:18 system [2] 32:5 123:12 systems [3] 8:16 18:10 19:12	62:25 63:13 82:12 tailor [1] 81:20 taking [6] 29:17 42:19 46:24 48:18 95:14 128:10 talks [1] 57:19 task [3] 60:14,24 61:3 Taylor [1] 2:15 technical [5] 30:17,18 43:9 99:16 104:5 technically [1] 124:14 Technologists [1] 25:14 technology [4] 11:23 12:2,19 25:16 telephone [2] 90:7,19 Telephonically [1] 3:20 telling [2] 86:20 87:17 ten [3] 27:25 70:23 97:25 Tennessee [1] 5:25 tenure [1] 125:16 term [3] 38:21 110:7 112:23 terms [1] 121:23 test [2] 43:10 62:3 testified [6] 4:11 21:8 86:17,25 99:20 116:8 testifying [1] 5:18 testimony [6] 5:11 59:21 98:19 120:8 132:9,11 testing [9] 7:6 15:19 38:25 39:1,2 75:1,13,19 125:18 tests [1] 108:12 Texas [1] 25:10 text [1] 40:18 textbook [1] 99:13 Thank [2] 116:12 127:10 theoretical [1] 111:14 thereafter [3] 4:5 68:18 132:13 thereon [1] 131:9 thereto [1] 132:19 thinks [1] 122:10 third [2] 43:5 60:5 third-party [1] 96:23 thought [10] 21:10 53:22 53:22 62:23 79:14 81:9 81:24 101:10 130:4,21 three [3] 21:3,10 27:19 69:1 72:10,18 79:6 86:25 126:15 through [17] 12:23 28:5 33:10 39:11 43:8 47:13 47:14,22 48:2 63:5 78:11 92:4 95:19 104:4 118:8 123:8 128:3 throughout [3] 27:12,15 37:8 thumbnail [1] 5:20 ties [1] 88:11 tile [5] 101:12 119:5 120:3 120:4,10	tiles [28] 91:18 96:15 100:4,8,12,14,17 101:9 101:14,15,17,22 103:1 104:2 117:21 118:1,4,10 118:23 119:15,19 120:11 120:17 121:3,7,8 126:18 127:6 times [8] 27:25 69:2,10 86:25 92:19 97:1 98:1 123:5 title [10] 9:23 12:7 19:16 19:18,23 20:1 33:17 72:8 92:22 104:1 TM [1] 71:23 today [22] 4:19 5:11 19:5 27:16 37:23 38:8,15 41:15 42:2 46:12 48:5 54:25 57:12 58:15 64:14 78:13 83:4 90:21 97:14,15 119:11 120:25 together [18] 26:11 31:14 32:4 50:15 52:9,18 56:17 56:24 58:20 59:4,5 60:23 74:9 79:10,18,23 80:8,14 Tom [5] 70:4 71:23 72:2 92:25,25 too [1] 27:8 took [7] 12:2 52:8 63:8 90:2 93:3 108:12 125:12 top [4] 53:19 57:14 82:5 92:25 total [3] 25:1 37:8 40:19 totally [3] 29:7 44:7 104:16 toward [1] 98:24 town [2] 34:21 126:14 toxic [8] 13:21 14:3 38:22 46:17 57:18,20,22 109:24 toxicities [1] 63:6 toxicity [7] 38:21 46:15 62:5,13,14 64:18 72:24 toxicological [2] 7:6 24:5 toxicologist [2] 24:11 74:14 toxicologists [1] 98:14 toxicology [3] 7:3 36:12 36:14 toxins [3] 41:10 43:12 82:12 trace [1] 42:21 traced [1] 100:12 tracked [1] 37:25 trade [8] 8:24 24:22 25:5 25:17 26:10,24 27:3 34:23 training [4] 70:17 77:6,7 77:17 transcribed [1] 4:6 transcript [6] 1:14 5:13 5:17 50:24 65:10,15 transfer [1] 11:22 transferred [1] 11:21 transformers [6] 19:10 19:11,12 27:6 37:17 106:15	transmission [4] 19:14 27:6 35:23 105:4 transmitted [1] 79:20 trial [2] 5:16 23:6 trip [1] 71:10 truc [4] 38:8 117:9 131:7 131:12 try [7] 16:19 26:6 30:21 73:18 84:18,19 85:18 trying [9] 12:21,22 22:25 32:4 42:15 51:19 93:10 98:1 101:14 TSCA [28] 14:3,11,18 17:7,8,10,12 18:3,11,13 18:15,17,21,23,24 19:20 21:16 26:8 29:20 34:24 92:3 98:24 111:20,22 112:2 114:10,12,13 Turret [45] 1:3,4 3:17 4:15 32:20,25 33:3 45:6 51:4 54:6 65:23,25 67:5 68:25 78:1 79:2 86:8,14 87:5,9 90:14 93:20 96:2 97:14 103:2,4,8 106:20 107:7 110:23 116:15,21,25 118:13 119:21 120:5,15 123:16 125:6 126:24 127:19,22 128:7,15 130:24 turn [3] 48:4 115:8 124:5 twice [1] 56:16 two [11] 3:22 10:6,16 37:14 42:12 51:25 56:6 69:24 72:10 124:12 127:15 type [5] 28:1 100:22 101:11 105:23 125:4 types [6] 8:9 14:25 20:10 34:16 72:21 125:19 typewriting [2] 4:6 132:13 typographical [1] 40:8
-U-				
U.S. [8] 14:7,16 16:10 37:6 37:10 38:17 47:12 52:2 ultimate [5] 107:20 114:8,15,16,17 ultimately [5] 11:21 26:9 31:6,19 32:2 unbiased [1] 22:17 under [9] 16:20 17:21 18:6,14 21:16 37:1 52:22 131:11 132:13 undergraduate [1] 5:22 understand [17] 5:2,11 5:15 16:19 23:24 31:4 62:25 63:1 78:15 81:7 85:7 89:1 92:9 93:12,13 96:21 121:13 understandable [1] 62:24 understood [2] 5:5 121:12 unfair [2] 119:24 120:10 Unger [6] 83:21 89:25				

90:3 94:13 129:2 130:6 uniform [1] 26:6 uniformly [1] 21:15 Union [1] 28:9 unit [1] 13:1 United [3] 2:1,20 37:13 units [2] 17:9 122:16 university [3] 5:23,24 49:3 unless [1] 95:9 unquote [1] 98:21 unrivalled [1] 58:1 up [24] 10:15,17 13:4,24 18:9 19:3 23:2 26:5,6 54:8 81:8,9 85:8,12 93:7,15 98:1 100:9 107:14,15 120:16 123:15 125:23 126:4 up-to-date [2] 39:24 83:22 update [2] 54:18 90:3 updates [2] 54:2,7 usage [2] 20:15 91:17 USDA [2] 15:9 60:20 used [34] 15:10 18:6 19:4 19:5 33:24 38:15 59:14 62:22 63:4,23 75:7,9,16 99:14 100:13,14,16 101:11,17 102:25 103:13 103:25 110:7 115:3,5 118:1 119:5,9 121:6,8,18 122:12 123:10 user [3] 107:20 114:16,17 users [2] 114:8,15 uses [27] 12:23 15:16 19:2 19:6,7 36:21 101:13 104:11 105:2,3,8,12,16 106:13,14 107:3,4,4,9,19 112:2 121:15 122:6,22 125:21,21 126:18 using [4] 122:8,10 123:8 124:13 Usually [1] 27:24 USWA [6] 26:13,21,21 29:11 31:6 32:12 utili [1] 26:25 38:1 utility [1] 26:14 125:5 utilized [1] 103:22 124:19 utilizing [1] 125:4	vice [2] 71:7 72:13 view [6] 41:12,14,15 44:5 44:9 118:6 Virginia [2] 23:10,10 visibility [1] 80:20 visit [1] 71:20 volatilize [1] 36:24 volumes [1] 16:24 VP [1] 69:6 vs [2] 2:5,7 -W- Wagner [3] 127:15 129:6 129:10 Wait [1] 12:11 walk [1] 126:15 walk-through [1] 75:25 warning [1] 110:3 Warren [1] 28:25 Washington [4] 15:22 30:5,8 35:5 Waste [1] 26:14 WATKINS [1] 3:8 ways [2] 15:13 69:24 week [3] 7:5 54:13 97:25 weeks [1] 34:15 weighed [1] 125:17 well-known [1] 74:14 West [2] 23:10,10 Westinghouse [2] 35:20 35:21 whatnot [4] 15:20 38:2 83:5 111:2 wherein [1] 2:22 wherever [1] 58:5 whole [4] 11:16 32:6 124:9 126:6 William [1] 47:25 WILSON [1] 3:21 withdraw [4] 60:7 61:7 83:10 95:11 within [19] 2:19 6:5 9:24 10:10 11:10 13:15,25 17:1 17:2 21:13 25:22 26:7 29:20 53:5 56:13 59:3 67:14 101:25 131:6 without [5] 28:13 76:2 76:24 91:24 120:12 witness [13] 4:7 20:16 22:16 45:3 76:6 92:17 97:5,8 119:24 120:12 130:25 132:9,11 WJ [1] 72:5 woman [3] 68:21 69:5,12 wondering [1] 73:12 word [6] 6:9,10 24:2 65:17,17 87:13 words [2] 97:6 106:3 workable [1] 32:5 worked [10] 8:5 31:7,11 31:12 49:2,3 70:13,15 117:6,10	workplace [1] 96:14 world [8] 2:6,23 3:15 37:9 46:8 77:9 96:13,21 worry [1] 65:17 write [3] 42:8 56:25 79:14 writes [1] 121:25 writing [4] 48:16 52:4 56:19,21 written [18] 5:13 15:21 33:18 34:18 35:2 41:3 42:15 43:15,18 49:8 55:9 59:20,21 65:4,7 77:3 111:17 129:19 wrong [1] 106:24 wrote [10] 41:2 42:4 43:14,17,20 44:21 48:7 55:2 64:20 71:19 -Y- Yea [1] 121:21 year [5] 9:14 10:6,16 21:3 100:11 years [15] 10:13,16,17 21:10,11,24 27:20,21 37:25 49:10 51:8 54:14 56:9 70:23 96:17 yellow [1] 113:10 York [8] 8:6 9:2,3 20:17 22:16 23:4,6,7 young [1] 68:21 yourself [4] 21:23 97:13 98:9,16		
-V- Vanderbilt [1] 5:24 vapor [1] 36:22 varied [4] 27:24 34:14 35:1,6 variety [1] 20:23 various [8] 21:25 33:25 56:22 72:24 74:25 81:25 105:21 116:6 Verbally [1] 103:12 versus [3] 106:19 107:4 126:19				