

responsibilities of a navigator of a C-123 airplane during herbicide operations in Vietnam; the duties and responsibilities of a targeting officer for herbicide operations in Vietnam; the health experience of persons in Vietnam who used or were otherwise exposed to herbicides containing 2,4,5-T.

23. George C. Kempson.

Monsanto's marketing and sale of herbicides containing 2,4,5-T, both to the United States Government and to commercial customers; the health experience of persons who used or were otherwise exposed to herbicides containing 2,4,5-T.

24. Kettering Laboratory.

University of Cincinnati
Cincinnati, Ohio

Work performed for Monsanto by the Kettering Laboratory in the 1950's regarding the health experience of Monsanto workers exposed to materials formed during a runaway reaction in the manufacture of sodium trichlorophenate at Monsanto's Nitro, West Virginia plant in 1949 and/or to the 2,4,5-T process, including the treatment of affected workers and efforts to determine the toxicity of the materials formed during the runaway reaction and of 2,4,5-T and its process intermediates.

25. Paul Lacey.

117 Rosetta Court
Springdale, Ohio

The methods and procedures used to aeriually disseminate herbicides in Vietnam; the duties and responsibilities of a flight mechanic of a C-123 airplane during herbicide operations in Vietnam; the health experience of persons in Vietnam who used or were otherwise exposed to herbicides containing 2,4,5-T.

15314

26. John S. Leary, Jr.

2002 Sea Cove Court
Nassau Bay, Texas

Contacts in the 1960's between Monsanto and the United States Government regarding the toxicity of 2,4,5-T.

27. Charles F. Luecke.

12747 Spruce Pond Drive
St. Louis, Missouri

Monsanto's manufacture, marketing, and sale of herbicides containing 2,4,5-T, both to the United States Government and to commercial customers; the health experience of Monsanto workers involved in the 2,4,5-T process and persons who used or were otherwise exposed to herbicides containing 2,4,5-T; the United States Government's specifications for Agent Orange and Monsanto's compliance with them; the historical knowledge of the toxicity of herbicides containing 2,4,5-T and of the toxicity of dioxin; Monsanto's efforts to identify impurities, including dioxin, created in its manufacture of 2,4,5-T.

28. Charles E. Minarik.

P.O. Box 682
W. Harwich, Massachusetts

The United States Government's development, testing, and use of Agent Orange; the Government's specifications for Agent Orange.

29. John Mullendore.

1020 Grove
Evanston, Illinois

Monsanto's manufacture of phenoxy herbicides; contact with the United States Government regarding dioxin.

30. Verne L. Rhodes.

2120 Windport Lane
St. Louis, Missouri

Monsanto's production of 2,4,5-T in the 1960's;
Monsanto's efforts to reduce worker exposure to its
2,4,5-T process; Monsanto's efforts to reduce or to
remove dioxin in its 2,4,5-T process.

31. Frank S. Serdy.

13275 Windy Gate Lane
Creve Coeur, Missouri

The United States Government's field testing of
herbicides in Thailand; the health experience of
persons who used or were otherwise exposed to
herbicides containing 2,4,5-T.

32. Robert G. Sido.

7611 Shirley Drive
Clayton, Missouri

The United States Government's specifications for
Agent Orange and Monsanto's compliance with them;
registration of Monsanto products containing 2,4,5-T.

33. Anthony Sinclitico.

7800 William Road
Baltimore, Maryland

The United States Government's specifications for
Agent Orange.

34. Milt Smid.

#3 Zinzer Court
St. Louis, Missouri

The United States Government's specifications for
Agent Orange and Monsanto's compliance with them.

Tom K. Smith.

Monsanto's contracts with the United States Government for sale of herbicides containing Monsanto-manufactured 2,4,5-T; Monsanto's manufacture and sale of herbicides containing 2,4,5-T.

Robert E. Soden.

15998 Kettington Road
Clarkson Valley, Missouri

The health experience of Monsanto workers exposed to the 2,4,5-T process in the 1950's; Monsanto's efforts to determine the toxicity of 2,4,5-T and its process intermediates; Monsanto's efforts to reduce worker exposure to the 2,4,5-T process.

John R. Spey.

850 Tarpon Drive
Fort Walton Beach, Florida

The methods and procedures used to aeriaily disseminate herbicides in Vietnam; the duties and responsibilities of a pilot of a C-123 airplane during herbicide operations in Vietnam; the health experience of persons in Vietnam who used or were otherwise exposed to herbicides containing 2,4,5-T.

James E. Springgate.

3060 East Sunset Drive
Los Altos Hills, California

Monsanto's production of 2,4,5-T in the 1960's; Monsanto's efforts to reduce worker exposure to its 2,4,5-T process; the health experience of Monsanto workers involved in the 2,4,5-T process.

Earl Spurrier.

Madison Building, Suite 301
155 15th Street N.W.
Washington, D.C.

The methods and procedures used to apply herbicides containing 2,4,5-T for weed control in the United

15817

States; the health experience of persons who used or were otherwise exposed to herbicides containing 2,4,5-T.

40. Jack C. Strum.

712 Short Spoon Circle
Rocky Mount, North Carolina

Monsanto's production of 2,4,5-T in the 1960's; Monsanto's efforts to reduce worker exposure to its 2,4,5-T process; Monsanto's efforts to reduce or to remove dioxin in its 2,4,5-T process; the health experience of Monsanto workers involved in the 2,4,5-T process.

41. Frank E. Take, Jr.

480 Hillbrook Drive
Ballwin, Missouri

Monsanto's manufacture of 2,4,5-T at its Nitro, West Virginia plant; the United States Government's specifications and Monsanto's compliance with them; Monsanto's efforts to identify impurities, including dioxin, created in its manufacture of 2,4,5-T; Monsanto's efforts to reduce or remove dioxin in its 2,4,5-T process; the health experience of Monsanto workers involved in the 2,4,5-T process.

42. Wayne E. Vandeventer.

The United States Government's specifications for Agent Orange and Monsanto's compliance with them.

43. Richard C. Wallace.

P.O. Box 230
St. Albans, West Virginia

The health experience of Monsanto workers involved in the 2,4,5-T process.

44. Robert T. Webber.

4 Media Drive
St. Louis, Missouri

Monsanto's efforts to reduce worker exposure to its
2,4,5-T process.

45. Elmer P. Wheeler.

110 Cool Springs Drive
Camden, South Carolina

Monsanto's efforts to identify impurities, including
dioxin, created in its manufacture of 2,4,5-T;
Monsanto's efforts to determine the presence of dioxin
in its 2,4,5-T process and to reduce or remove it from
that process; the historical knowledge of the toxicity
of herbicides containing 2,4,5-T and the toxicity of
dioxin; the health experience of Monsanto workers
involved in the 2,4,5-T process and of persons who
used or were otherwise exposed to herbicides
containing 2,4,5-T; contacts with United States
Government representatives and others outside Monsanto
concerning all of the above.

46. Herbert Woodcock.

The methods and procedures used to aeriually disseminate
herbicides in Vietnam; the duties and responsibilities
of a navigator of a C-123 airplane during herbicide
operations in Vietnam; the health experience of
persons in Vietnam who used or were otherwise exposed
to herbicides containing 2,4,5-T.

47. Younger Laboratories.

Monsanto's efforts to determine the toxicity of
2,4,5-T and its process intermediates.

New York, New York
March 26, 1984

15319

TOWNLEY & UPDIKE

By: John C. Sabatka (JMS)
A Member of the Firm

Attorneys for Defendant
Monsanto Company
405 Lexington Avenue
New York, New York 10174
(212) 682-4567

CERTIFICATE OF SERVICE

I HEREBY AFFIRM THAT I am an attorney duly admitted to practice in the State of New York and in the Eastern District of New York. I HEREBY CERTIFY that on March 26, 1984 I caused to be served a true and correct copy of the Second List of Monsanto's Fact Witnesses by courier on all counsel on the attached service list.



DANIEL COBRINIK

15320

AGENT ORANGE SERVICE LIST

Wendell B. Alcorn, Esq.
Cadwalader, Wickersham & Taft
One Wall Street
New York, N.Y. 10005

Leonard L. Rivkin, Esq.
Rivkin, Leff, Sherman & Radler
100 Garden City Plaza
Garden City, N.Y. 11530

Thomas Beck, Esq.
Arthur, Dry & Kalish, P.C.
1230 Avenue of the Americas
New York, N.Y. 10020

William Krohley, Esq.
Kelley, Drye & Warren
101 Park Avenue
New York, N.Y. 10178

Paul V. Esposito, Esq.
Lewis, Overbeck & Furman
135 South LaSalle Street
Suite 1060
Chicago, Illinois 60603

PLAINTIFFS

David J. Dean, Esq.
Dean, Falanga, Sinrod & Rose
1 Old Country Road
Carle Place, N.Y. 11514

Thomas Henderson, Esq.
Baskin & Sears
Frick Building - 10th Floor
Pittsburgh, Pa. 15219

Victor J. Yannacone, Jr., Esq.
Yannacone & Yannacone
Post Office Drawer #109
62 Rose Avenue
Patchogue, New York 11772

Morton G. Silberman, Esq.
Clark, Gagliardi & Miller
The Inns of Court
99 Court Street
White Plains, N.Y. 10601

Richard Goldstein, Esq.
Shea & Gould
330 Madison Avenue
New York, N.Y. 10017

Howard Lester, Esq.
Lester Schwab Katz & Dwyer
120 Broadway
New York, N.Y. 10005

David R. Gross, Esq.
Budd, Larner, Kent, Gross,
Picillo & Rosenbaum
33 Washington Street
Newark, New Jersey 07102

Benton Musselwhite, Esq.
Law Offices of Benton
Musselwhite, Inc.
609 Fannin - Suite 517
Houston, Texas 77002

Stephen J. Schlegel, Esq.
Schlegel & Trafelet, Ltd.
One North LaSalle Street
Suite 3900
Chicago, Illinois 60602

Irving Like, Esq.
Reilly, Like & Schneider
200 West Main Street
Babylon, New York 11700

15321

GOVERNMENT COUNSEL

Arvin Maskin, Esq.
Department of Justice
Safeway Building - Room 904 D
521 12th Street, N.W.
Washington, D.C. 20530

Hon. Raymond J. Dearie
United States Attorney
By: L. Kevin Sheridan
Executive Assistant
U.S. Attorney
U.S. District Court
Brooklyn, New York 11201

OTHERS

Sol Schreiber, Esq.
Special Master
Milberg, Weiss, Bershad,
Specthrie & Lerach
One Penn Plaza Suite 4915
New York, N.Y. 10119

Clerk of Panel
Judicial Panel on
Multidistrict Litigation
1120 Vermont Avenue, N.W.
Suite 1002
Washington, D.C. 20005

Hon. Shira Scheindlin
Magistrate
U.S. Courthouse
225 Cadman Plaza East
Brooklyn, N.Y. 11201

Agent Orange Plaintiffs' Management Committee
26 Court Street, Room 905
Brooklyn, New York 11242

15322

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

In Re

"AGENT ORANGE"

MDL NO. 381

PRODUCT LIABILITY LITIGATION

FILED
IN CLERK'S OFFICE
U. S. DISTRICT COURT E.D. N.Y.
TIME AM. 1984
PM. 140

DEFENDANTS LIST OF FACT WITNESSES
SUBMITTED PURSUANT TO THE SCHEDULING ORDER
FOR THE COMPLETION OF DISCOVERY

BUDD, LARNER, KENT, GROSS,
PICILLO & ROSENBAUM, P.C.
33 Washington Street
Newark, New Jersey 07102
(201) 622-7400

15323

1944

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

_____X

In Re

"AGENT ORANGE"

MDL NO. 381

PRODUCT LIABILITY LITIGATION

_____X

**DEFENDANTS LIST OF FACT WITNESSES
SUBMITTED PURSUANT TO THE SCHEDULING ORDER
FOR THE COMPLETION OF DISCOVERY**

**BUDD, LARNER, KENT, GROSS,
PICILLO & ROSENBAUM, P.C.
33 Washington Street
Newark, New Jersey 07102
(201) 622-7400**

15324

DEFENDANTS LIST OF FACT WITNESSES
SUBMITTED PURSUANT TO THE SCHEDULING ORDER
FOR THE COMPLETION OF DISCOVERY

On behalf of all defendants, and pursuant to the Scheduling Order For The Completion Of Discovery dated January 10, 1984, counsel for Thompson Chemical Company hereby submits the following list of potential witnesses to be called at trial, attached hereto as Schedule A. These witnesses shall be called to testify as to the issue of the government contract defense.

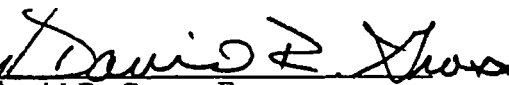
Furthermore, attached hereto as Schedule B, defendants hereby submit a list of witnesses presently scheduled to be deposed at a future date. Therefore, defendants reserve the right, after these witnesses are deposed to determine whether or not these individuals shall be called upon at trial.

Each individual defendant also reserves the right to submit an additional list of witnesses on their own behalf which they may choose to call upon to testify.

Dated February 29, 1984

Respectfully submitted,

BUDD, LARNER, KENT, GROSS,
PICILLO & ROSENBAUM, P.C.

By 
David R. Gross, Esq.

33 Washington Street
Newark, New Jersey 07102
(201) 622-7400
Attorneys for Defendant
Thompson Chemical Company

RIVKIN, LEFF, SHERMAN & RADLER
100 Garden City Plaza
Garden City, New York 11530
Attorneys for Defendant
The Dow Chemical Company

15325

TOWNLEY & UPDIKE
405 Lexington Avenue
New York, New York 10174
(212) 682-4567
Attorneys for Defendant
Monsanto Company

ARTHUR, DRY & KALISH, P.C.
1230 Avenue of the Americas
New York, New York 10020
(212) 841-9300
Attorneys for Defendant
Uniroyal, Incorporated

KELLEY, DRYE & WARREN
101 Park Avenue
New York, New York 10178
(212) 808-7800
Attorneys for Defendant
Hercules Incorporated

SHEA & GOULD
330 Madison Avenue
New York, New York 10017
Attorneys for Defendant
Uniroyal, Incorporated

CLARK, GAGLIARDI & MILLER
99 Court Street
White Plains, New York 10601
(914) 946-8900
Attorneys for Defendant
T H Agriculture & Nutrition
Company, Inc.

cc: Service List

15326

Schedule A

Andrew W. Anderson
1311 Thomas Run Road
Belaire, Maryland 21014

Gordon A. Anderson
102 Hickory Lane
Naugatuck, Connecticut

Robert J. Anderson
3624 North 36th Road
Arlington, Virginia 22207

Robert L. Andreoli
25 Eighth Avenue
Iron River, Michigan

John Angel
Box 78
Yellville, Arkansas

Kenneth Arndt, M.D.
330 Brookline Avenue
Boston, Massachusetts

Louis B. Arnoldi
512 North Overlook Drive
Alexandria, Virginia

John C. Atkinson
1222 Merchant Lane
McLean, Virginia 22101

Dr. Joseph D. Avellino
2219 South Broad Street
Philadelphia, Pennsylvania 19148

Carl Gwin Baker
19408 Charline Manor Road
Olney, Maryland

John D. Baldeschieler
619 South Hill Avenue
Pasadena, California

William F. Barthel
Route 2
Mount Vernon, Iowa

Richard R. Bates
2810 Pheasant Lane
Clarksburg, Maryland

Frank L. Bauer
600 Grant Street
Pittsburgh, Pennsylvania

*Russell H. Betts

*Weldon Bills

Peter S. Bing, M.D.
7900 W. Pico Boulevard
Los Angeles, California

Donald J. Birmingham
19811 Wedgewood Drive
Gross Point Woods, Michigan

Warren R. Bontoyan
3910 Meeting House Road
Perry Hall, Maryland 21228

Rodney William Bovey
Dept. of Range Science
Texas A&M University
College Station, Texas 77343

Lester Boyer
Edgewood Church Road
Frederick, Maryland

Harold Brown
101530 Third Street, N.W.
Washington, D. C.

Major William Andrew Buckingham, Jr.
Department of Political Science
U. S. Air Force Academy
Colorado

*At the present time, addresses on these witnesses are unavailable;
however, they will be supplied as soon as possible.

Schedule A - Page 2

John L. Buckley
P. O. Box 263
Whitnes Point, New York

Levi T. Burcham
4701 Crestwood Way
Sacramento, California

Dr. Edward James Burger, Jr.
2233 Wisconsin Avenue, Suite 324
Washington, D. C. 20007

Jack E. Burton
204 Vivian Lane
San Antonio, Texas

Charles E. Bushey
374 South Peoria Circle
Aurora, Colorado 80012

Dohrman H. Byers
12060 Lawnview Avenue
Cincinnati, Ohio

Theodore Carroll Byerly
6J Ridge Road
Greenbelt, Maryland

John F. Callahan, Sr.
2612 Green Road
Baldwin, Maryland

David M. Cawthorne
P. O. Box 293
Forest Hill, Maryland

Milton K. Christensen
1089 Clubhouse Boulevard
New Smyrna Beach, Florida

Joseph F. Coates
3738 Kanawaha St., N.W.
Washington, D.C.

*George Collins

George W. Connell
Route 2, Box 626
Warrenton, Virginia

Katherine D. Courtney, Ph.D.
Environmental Biology Division
EPA Environmental Research Center
Research Triangle Park, N.C. 27711

Nicholas H. Cox
2516 East Cass St.
Joliet, Illinois

Robert E. Cox
203 East Belerest Rd.
Bel Air, Maryland

William J. Crawford
524 Margaret Dr.
Fairborn, Ohio

William Murlin Creasy
3910 Molly Rd.
Pine Bluff, Arkansas 71603

Eugene Cutright
1474 Maplewood Dr.
Macon, Georgia 31210

Roswell G. Daniels
226 West Edgewood St.
Morton, Illinois 61550

Robert A. Darrow
7613 Baltimore-National Pike
Frederick, Maryland 21701

Thomas R. Dashiell
304 Thomas Ave.
Frederick, Maryland 21701

Delmore, BG Fred J.
1600 S. Eads
Arlington, Va.

Joseph Amadeo DiPaolo
6605 Melody Lane
Bethesda, Maryland 20034

*At the present time, addresses on these witnesses are unavailable; however, they will be supplied as soon as possible.

15328

Schedule A - Page 3

William W. Dorrell
8600 Pine Cliff Drive
Frederick, Maryland

Paul Doty
4 Kirkland Place
Cambridge, Mass.

Francis Gene Douglas
3101 South 54th St.
Kansas City, Kansas

Henry N. Doyle
5303 Augusta St.
Bethesda, MD.

Lee A. DuBridge
1730 Homet Rd.
Pasadena, California

Robert H. Duguid
107 South Lyndbrook Rd.
Bel Air, Maryland

Sigmund R. Eckhaus
4208 Colonial Rd.
Pikesville, Maryland

Fred I. Edwards
5206 Worthington Drive
Bethesda, Maryland

Dr. Kenneth Endicott
11317 Broad Green Drive
Potomac, Maryland

William B. Ennis, Jr.
1131 S.W. 74 Terrace
Plantation, Fla. 33317

Graydon Casper Essman
11 Holcomb Drive
Williamsburg, Virginia

Donald W. Falconer
115 Kline Blvd.
Frederick, Maryland 21701

*Dr. Hans Falk

William A. Fenner
2713 Roffin Road
Hopewell, Virginia 23860

David Firestone
HFF 426
200 C. Street S.W.
Washington, D.C. 20204

Henry Fischbach
5627 Bradley Blvd.
Alexandria, Virginia

Lawrence Fishbein
3203 Misty Lane
Littlerock, Arkansas 72207

Oscar G. Fitzhugh
4208 Dresden St.
Kensington, Maryland

John Stewart Foster
2737 Sinton Place
Pepper Pike, 44124

*John Frawley

Herbert G. Fredericks
2414 Diana Road
Baltimore, Maryland

Seymour L. Friess
6522 Lone Oak Court
Bethesda, Maryland

Verne C. Fryklund, Jr.
6805 Broyhill St.
McLean, Virginia 22101

Donald W. Fuhlhage
Rural Route 1
Tonganoxie, Kansas

* At the present time, addresses on these witnesses are unavailable; however, they will be supplied as soon as possible.

Schedule A - Page 4

James Gardner
1616 Arlington Drive
Salt Lake City, Utah 84103

Major Robert M. Gastineau, M.D.
2381 Rexford Drive
Pittsburgh, Pennsylvania 15241

*Perry Gehring

John H. Gerety, Jr.
North Entrance
Friendhsip Inn
P.O. Box 1885
Klamath Falls, Oregon

*Thomas Gervason

William Godel
711 Ledo Park Dr.
Newport Beach, Ca. 92660

*John Gordon

Nathan Gordon
4990 Sentinel Drive
Apartment 301
Bethesda, Maryland 20816

Dr. Herschel E. Griffin
11274 Pabellon Court
San Diego, California 92124

*David Henry Groth

General Paul Donal Harkins
65104 Northport Drive
Dallas, Texas 75230

Benjamin Harris
11323 Glenarm Road
Glenarm, Maryland

E. Ross Hart
1160 Chain Bridge Road
McLean, Virginia 22101

Wayland J. Hayes
2317 Gold Club Lane
Nashville, Tennessee

Harry W. Hays
3900 Watson Place, N.W., Apt. 2G
Building A
Washington, D.C. 20016

Albert E. Hayward
5716 Jefferson Blvd.
Braddock Heights, Maryland 21714

Robert J. Heaston
8231 Stonewall Drive
Vienna, Virginia 22180

James A. Hebbeler
821 Park Court
Palm Harbor, Florida

*Harry Heimann

Brunildo Antonio Herrero
616 Lake Hollingsworth Drive
Lakeland, Florida

Garnett Higginbotham
Division of Food and Color Additive
FDA
200 C Street, S.W.
Washington, D.C. 20204

Donald F. Hornig
16 Longfellow Park
Cambridge, Mass.

*At the present time, addresses on these witnesses are unavailable;
however, they will be supplied as soon as possible.

Schedule A - Page 5

Richard G. Horton
208 East Ring Factory Road
Bel Air, Maryland 21014

William Horwitz
9830 Cherry Tree Lane
Silver Spring, Maryland 20901

Riley D. Housewright
147 Fairview Avenue
Frederick, Maryland

Harry Otto Huss
Route 1 Box 352
Uhrichsville, Ohio 44683

Kent R. Irish
1604 Rock Creek Drive
Frederick, Maryland

Keith H. Jacobson
740 Beall Avenue
Rockville, Maryland

Dr. Bernard J. Jandorf
6017 Baywood Avenue
Baltimore, Maryland 21209

Marc Jeffries
2108 Hyden Ct.
Fallston, Maryland 21067

Dr. William Jurgelski
Office of Health Hazard Assessment
National Institute of Environmental
Health Science
Research Triangle Park, N.C. 27709

*Abram Saul Kaplan

Ronald Joseph Kassel
222 East Belcrest Road
Bel Air, Maryland

Philip Charles Kearney
Building 050 BARC-West
Beltsville, Maryland

Surgeon M. Keeny, Jr.
3600 Albermarle St., N.W.
Washington, D.C.

Dr. Marcus M. Key
University of Texas Health
Science Center at Houston
P.O. Box 20186
Houston, Texas 77025

Dr. Henry A. Kissinger
435 East 52nd St.
New York, New York

Michael Klein
1800 South East St. Lucie Blvd.
Building 10-306
Stuart, Florida

Dayton L. Klingman
2028 Forest Hill Drive
Silver Spring, Maryland 20903

Albert Christian Kolbye
4802 Fort Summer Drive
Bethesda, Maryland

Wesley Rudolph Koster
105 Northlake Dr., Apt. 215A
Orange City, Florida 32763

William George Kratz
985 North Capitol
Many, Louisiana 71449

George M. Lawton
1388 Almond Ave.
Livermore, California

* At the present time, addresses on these witnesses are unavailable;
however, they will be supplied as soon as possible.

15331

Schedule A - Page 6

John S. Leary, Jr.
2002 Sea Cove Court
Nassau Bay, Texas

Douglas H.K. Lee
421 Wood Duck Drive
Sarasota, Florida

Jane Lewis
5125 Temple Hills Road
Temple Hills, Maryland 20748

Dr. Douglas Lindsey
1501 North Campbell St.
Tuscon, Arizona

Gordon J. MacDonald
20 Occom Ridge
Hanover, New Hampshire

Harold Noble MacFarland
2320 Harrah Manner Drive
Pittsburgh, Pennsylvania 15238

Dr. Arthur H. McCreesh
1317 Saratoga Drive
Bel Air, Maryland 21014

Harold Joseph Magnuson, M.D.
12305 Fernando Drive
San Diego, California 92128

Walter W. Melvin
413 Bobolink Court
Fort Collins, Colorado 80526

Edward A. Metcalf
906 Wellington Rd.
Baltimore, Maryland 21212

Lester L. Miller
437 Blueridge Drive
York, Pennsylvania

Charles E. Minarik
P.O. Box 682
West Harwich, Mass.

Ian Alastair Mitchell, M.D.
110 Parmele Blvd.
Wrightsville Beach, N.C.

Francis W. Morthland
5602 Garrett Rd.
Durham, North Carolina

Donald W. Norberg
9153 East Stanford Ave.
Englewood, Colorado 80111

Dr. Harold T. Magnuson
12305 Fernando Drive
San Diego, Cal. 92128

Dr. Arthur H. McCreesh
1317 Saratoga Drive
Bel Air, Maryland 21014

William D. McElroy
9651 Black Gold Road
LaJolla, Cal. 92037

Robert S. McNamara
2419 Tracy Place
Washington, D.C.

Vincent McRae
12000 Old Georgetown Rd.
Rockville, Maryland

John F. O'Leary
Route 1, Box 213
Queenstown, Maryland 21658

Peter G. Olenchuk
6801 Baron Rd.
McLean, Virginia 22101

Normand E. Olivier
31 Mosher St.
South Dartmouth, Mass.

Boris J. Osheroff
13102 Camellia Drive
Silver Spring, Maryland 20906

Arthur Joseph Pallotta
601 Abbott Lane
Falls Church, Virginia

Laverne A. Parks
322 E. Garden Green
Port Hueneme, Cal. 93041

*Vernon Perone

Lawrence M. Petrucelli
5600 Cedar Parkway
Chevy Chase, Maryland

Alan P. Poland
2918 Nottingham Way
Madison, Wisconsin

Paul Aaron Possick
46 Winding Way
Woodcliff Lake, N.J.

Melvin M. Rabstein
4401 Gulf of Mexico Drive
Long Boat Key, Florida

Eberhardt Rehtin
1665 Cataluna
Palos Verdes Estates, Cal.

Kennard A. Reynard
2496 Cedarwood Drive
Adrian, Michigan

Merl Ringenberg
612 Rock Spring Road
Bel Air, Maryland

Ralph T. Ross
Room 330A
Administration Building
U.S. Department of Agriculture
Washington, D.C.

Maj. Gen. Jacquard H. Rothschild
2323 N. Central Ave.
Phoenix, Az. 85004

Dr. Jack Phillip Ruina
28 Hawthorne St.
Cambridge, Mass. 02138

Umberto Saffiotti
5114 Wissioming Road
Bethesda, Maryland

Samuel Sass
17 North Read Street
Bel Air, Maryland 21014

Bernard Schwetz
1101 30th Street, N.W.
Suite 205
Washington, D.C. 20007

Robert A. Shade
199 Rooster Drive
Eagle, Indiana

Warren C. Shaw
1907 Edgewater Parkway
Silver Springs, Maryland

Carleton G. Shead
1406 Flying W. Trail
Helotes, Texas 78023

*John R. Shoemaker

Seymour D. Silver
2920 Strathmore Ave.
Baltimore, Maryland

Dr. Van Murray Sim
1615 Toll Gate Road
Bel Air, Maryland

*At the present time, addresses on these witnesses are unavailable;
however, they will be supplied as soon as possible.

Dr. Thomas C. Simmons
2706 Bynum Hill Circle
Bel Air, Maryland

Anthony N. Sinclitico
1800 Willann Road
Baltimore, Maryland 21237

Marshall Steinberg
927 Jaysmith Street
Great Falls, Virginia

*Dr. Jesse L. Steinfeld

*Herbert E. Stokinger

William W. Stone
434 Sanahelena Drive
Solana Beach, California

Marshall Stubbs
2001 Columbia Turnpike
Arlington, Virginia

Walter Edward Sultan
1203 Springwoods Terrace
Fallston, Maryland 21047

William H. Summerson
5108 Brittany Drive South
St. Petersburg, Florida

Steve S. Szabo
20 Milrose Lane
Monsey, New York

General Maxwell D. Taylor
2500 Massachusetts Ave. N.W.
Washington, D.C.

Charles H. Townes
1988 San Antonio Ave.
Berkeley, California

John L. Traub
610 West Baker Ave.
Abingdon, Maryland

*Thomas A. Treglia

John Wilder Tukey
115 Arretton Rd.
Princeton, N.J.

William Martin Upholt
525 East Indian Drive
Silver Springs, Maryland

Cyrus Robert Vance
One Battery Park Plaza
New York City

*Wayne E. Vandeventer

Filiberto Vargas
6165 East I Lift Ave.
Apartment 308 B
Denver, Colorado 80222

Henry L. Verhulst
5917 Walton Rd.
Bethesda, Maryland

Frank J. Vocci
6009 Winthrope Ave.
Baltimore, Maryland 21206

Dorothy M. Ward
345 Homeland South Way
Baltimore, Maryland 21212

*At the present time, addresses on these witnesses are unavailable;
however, they will be supplied as soon as possible.

Schedule A - Page 9

Paul C. Warnke
Cummings, Burlington,
Rubler, Acheson & Shaw
Washington, D.C.

John T. Weimer
1500 South View Rd.
Bel Air, Maryland 21014

Frank H. Westheimer
3 Berkeley St.
Cambridge, Mass. 02138

William Childs Westmoreland
Box 1059
Charleston, S.C. 29402

Jerome B. Wiesner
61 Shattuck Rd.
Watertown, Mass.

Jerome Wilkenfeld
5757 Owensmouth Ave.
Woodland Hills, California

Donald Whittam
10308 Brookmoor Drive
Silver Spring, Maryland 20901

James H. Wills
9706 Bellevue Dr.
Bethesda, Maryland

Herbert F. York
6110 Camino De LaCosta
LaJolla, California

Dr. Mitchell Zavon
Occidental Chemical Corp.
P.O. Box 728
Niagara Falls, New York 14302

Walter Leo Zielinski, Jr.
12705 Darnestown Rd.
Gaithersburgh, Maryland 20878

15335

SCHEDULE B

DEPOSITIONS SCHEDULED AFTER FEBRUARY 29, 1984:

1. Donald Barnes
2. General Stanzwick Hay
3. Julius Johnson
4. Harold Kinney
5. Debdas Mukerjee
6. Elmer Wheeler

15386

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

15337

In Re

"AGENT ORANGE"

PRODUCT LIABILITY LITIGATION

MDL NO. 381

DEFENDANTS LIST OF FACT
WITNESSES SUBMITTED PURSUANT
TO THE SCHEDULING ORDER FOR
THE COMPLETION OF DISCOVERY

BUDD, LARNER, KENT, GROSS,
PICILLO & ROSENBAUM, P.C.

33 Washington Street
Newark, New Jersey 07102
(201) 622-7400

Attorneys for Defendant
Thompson Chemical Company

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK

FILED
IN CLERK'S OFFICE
U. S. DISTRICT COURT E.D. N.Y.
MAY 1 1984
TIME 1:00 PM
FBI
VIP

-----X
In re :
"AGENT ORANGE" : MDL No. 381
Product Liability Litigation :
-----X

DEFENDANT DIAMOND SHAMROCK
CHEMICALS COMPANY'S PRELIMINARY
LISTING OF FACT WITNESSES

Pursuant to the Special Master's Final Amended Recommended Scheduling Order, approved by the Court on January 10, 1984, defendant Diamond Shamrock Chemicals Company ("Diamond Shamrock") sets forth below its preliminary listing of fact witnesses who may give live testimony at trial in support of Diamond Shamrock's claims and defenses. This listing does not address deposition testimony that may be used at trial, which will be identified as part of preparation of the pretrial order. In accordance with the Scheduling Order and the Magistrate's Pretrial Order No. 9, Diamond Shamrock reserves the right to supplement and amend this preliminary listing.

15338

1949

Name and
Present Address

Warren C. Shaw
1907 Edgewater Parkway
Silver Spring, Maryland

F. Gordon Steward
Diamond Shamrock Agricultural
Chemicals Inc.
P.O. Box H
Tuscaloosa, Alabama 35404

Dated: New York, New York
February 29, 1984

Description of General
Nature of Testimony

Testimony concerning USDA regulation of 2,4,5-T under FIFRA in 1950's and 1960's, and USDA research and investigation concerning health effects and efficacy of 2,4,5-T.

Testimony concerning manufacturing operations at Diamond Shamrock's former Newark plant, including: the development, installation and operation of a method for removing dioxin from trichlorophenol; the U.S. Public Health Service study of the Newark workers in 1968-69; and the production and shipment of Agent Orange pursuant to contracts with the United States.

Respectfully submitted,

CADWALADER, WICKERSHAM & TAFT

By Wendell B. Brown, Jr.
A Member of the Firm *Wendell B. Brown, Jr.*
Attorneys for Defendant
Diamond Shamrock Chemicals
Company
One Wall Street
New York, New York 10005
(212) 908-7000

15340

SERVICE LIST

FOR DEFENDANTS

Leonard L. Rivkin
Rivkin, Leff, Sherman & Radler
(for DOW CHEMICAL)
100 Garden City Plaza
Garden City, New York 11530

Morton G. Silberman
Clark, Gagliardi & Miller
(for T H AGRICULTURE &
NUTRITION COMPANY, INC.)
The Inns of Court
99 Court Street
White Plains, New York 10601

John C. Sabetta
Townley & Updike
(for MONSANTO)
405 Lexington Avenue
New York, New York 10174

William Krohley
Kelley Drye & Warren
(for HERCULES, INC.)
101 Park Avenue
New York, New York 10178

John M. Fitzpatrick
Dilworth, Paxson, Kalish & Levv
(for HOOKER PLASTICS &
CHEMICALS CORP.)
2600 The Fidelity Building
Philadelphia, Pennsylvania 19109

Richard Goldstein
Shea & Gould
330 Madison Avenue
New York, New York 10017

Thomas Beck
Arthur, Dry & Kalish, P.C.
(for UNIROYAL)
1230 Avenue of the Americas
New York, New York 10020

David R. Gross
Budd, Lerner, Kent, Gross,
Picillo & Rosenbaum
(for THOMPSON CHEMICALS)
33 Washington Street
Newark, New Jersey 07102

Arvin Maskin
Department of Justice
(for THIRD PARTY DEFENDANT USA)
Safeway Building
521 12th Street, N.W.
Washington, D.C. 20530

L. Kevin Sheridan
Executive Assistant
U.S. Attorney
Eastern District of New York
United States Courthouse
225 Cadman Plaza East
Brooklyn, New York 11201

COPIES OF ALL DOCUMENTS MUST
BE SENT TO:

Clerk of the Panel
Judicial Panel on Multidistrict
Litigation
1120 Vermont Avenue, N.W.
Suite 1002
Washington, D.C. 20005

FOR PLAINTIFFS

Victor J. Yannacone, Jr.
Yannacone & Yannacone
Post Office Drawer #109
Patchogue, New York 11772

Stephen J. Schlegel
Schlegel & Trafelet, Ltd.
One North LaSalle Street
Suite 3900
Chicago, Illinois 60602

Benton Musselwhite
Law Offices of Benton Musselwhite,
Inc.
Suite 517
609 Fannin
Houston, Texas 77002

Thomas Henderson
Baskin & Sears
Frick Building - 10th Floor
Pittsburgh, Pennsylvania 15219

David J. Dean, Esq.
Dean, Falanga & Rose
1 Old Country Road
Carle Place, New York 11514

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF NEW YORK
----- X

U. S. DISTRICT COURT E.D. N.Y.
CLERK'S OFFICE
APR 11 1984
TIME A.M. P.M.
JP

In Re

"AGENT ORANGE"

MDL No. 381
(All Cases)

Product Liability Litigation
----- X

PLAINTIFFS' PRE-TRIAL ORDER

APRIL 11, 1984

PLAINTIFFS' MANAGEMENT COMMITTEE

Stephen J. Schlegel, Esq.
Schlegel & Trafelet, Ltd.
One North LaSalle Street
Suite 3900
Chicago, Illinois 60602

Thomas W. Henderson, Esq.
Henderson & Goldberg, P.C.
Frick Building, Suite 1612
Pittsburgh, Pennsylvania 15219

Benton Musslewhite, Esq.
Suite 517 - 609 Fannin
Houston, Texas 77002

Phillip E. Brown, Esq.
Hoberg, Finger, Brown, Cox & Molligan
703 Market Street, 18th Floor
San Francisco, California 94103

Stanley Chesley, Esq.
Phil Allen, Esq.
Waite, Schneider, Bayless & Chesley
1513 Central Trust Tower
Cincinnati, Ohio 45202

David Dean, Esq.
Dean, Falanga & Rose
One Old Country Road
Carle Place, New York 11514

2447

15343

John O'Quinn, Esq.
O'Quinn, Hagans & Wettman
3200 Texas Commerce Tower
Houston, Texas 77002

Gene Locks, Esq. &
Neal R. Peterson, Esq.
Greitzer & Locks
1500 Walnut Street, 22nd Floor
Philadelphia, Pennsylvania 19102

Newton B. Schwartz, P.C.
Houston Bar Center Building
723 Main, Suite 325
Houston, Texas 77002

Irving Like, Chairman, Law Committee
Reilly, Like & Schneider
200 West Main Street
P.O. Box 218
Babylon, New York 11702

Aaron Twerski, Esq.
Hofstra University School of Law
Hempstead, New York 11550

V. Donald Russo, Esq.
7 Bonnie Drive
Northport, New York 11768

Albert J. Fiorella, Esq.
1565 Franklin Avenue
Mineola, New York 11501

TABLE OF CONTENTS

I. INTRODUCTION. I - 1

II. SUPPLEMENTATION OF THE PRE-TRIAL ORDER. II - 1

III. STIPULATION AS TO ADMITTED FACTS. III - 1

IV. PLAINTIFFS' EXHIBITS (Per Paragraph IV of Magistrate's
Pre-Trial Order No.17). IV.A.1

 A. Separate document list per Paragraph IV (E) (1)
 of Pre-Trial Order No. 17. IV.A.1

 B. Separate Document list per Paragraph IV (E) (2)
 of Pre-Trial Order No. 17. IV.B.1

 C. Separate Document list per Paragraph IV (E) (3)
 of Pre-Trial Order No. 17. IV.C.1

 D. Demonstrative Evidence per Paragraph IV (H)
 of Pre-Trial Order No. 17. IV.D.1

V. WITNESS LISTS

 A. Live Witnesses V.A.1

 B. Deposition Witnesses V.B.1

VI. ISSUES TO BE PROVED VI - 1

 With respect to:

 A. Dow Chemical Company

 B. Hercules Incorporated.

 C. Monsanto Chemical Company.

 D. Diamond Shamrock Corporation

 E. T H Agriculture & Nutrition Company.

 F. Uniroyal, Inc.

 G. Thompson Chemical Company.

 H. The United States Government

VII. DISPUTED ISSUES OF FACT AND LAW VII - 1

INTRODUCTION

Plaintiffs submit this Pre-Trial Order dated April 11, 1984 in response to the Magistrate's Pre-Trial Order No. 17.

Wherever possible, plaintiffs have attempted to follow the format set forth in that Pre-Trial Order. The table of contents and numbering of Exhibits attempt to follow the Order as closely as possible. Where "Bates" numbers appeared on the documents produced by the defendants or by the United States Government, or where the defendants or the Government used other designations in identifying the documents produced previously, plaintiffs have designated such documents by those numbers as a "Pretrial Identification Number" or "PIN" number in the text of the exhibit lists comprising portions of this order.

Where portions of the Pre-Trial Order are to be completed at later dates pursuant to the terms of Pre-Trial Order No. 17, the plaintiffs have simply made general statements to that effect, so as to allow the format to remain in conformity with the numbering system contained in the Magistrate's Pre-Trial Order.

Plaintiffs reserve the right, in view of the Magistrate's cognizance of the fact that discovery is continuing in these causes, to supplement this Pre-Trial Order on the terms set forth in Pre-Trial Order No. 17.

The medical records of the individual plaintiffs are not being tendered at this time as exhibits to this Pre-trial Order. Plaintiffs and defendants continue to assemble those records and plaintiffs presume that discussions will take place between counsel for all parties attempting to reach a stipulation regarding a common set of exhibits of that kind.

Plaintiffs have not in this submission copied and tendered the

voluminous contracts of each defendant relative to the sale of Agent Orange herbicides to the United States Government. Those contracts are on file with the Clerk of the District Court in the defendants' several responses to Pre-trial Order No. 33. Plaintiffs have likewise not copied the defendants' answers to various interrogatories as exhibits with this submission. They, too, are all on file with the Clerk.

Time constraints have made it literally impossible to either review all of the documents produced through the course of discovery or to completely paginate deposition testimony references and plaintiffs respectfully request the opportunity to continue doing so for the purpose of including relevant documents and testimony in their amended submissions to be filed hereafter.

II

SUPPLEMENTATION OF THE PRE-TRIAL ORDER

Pursuant to the terms of the Magistrate's Pre-Trial Order No. 17, specifically paragraph "II" thereof, plaintiffs will supplement their Pre-Trial Order in conformity with those terms from time to time hereafter.

III

STIPULATION AS TO ADMITTED FACTS

In Supplements to this Pre-trial Order, plaintiffs will set forth any stipulations achieved with respect to facts admitted in this litigation. Thus far, no such stipulations have been entered into.

IV. A. Plaintiffs hereby submit the following list of identified Exhibits in response to requirements of Paragraph IV (E) (1) of the Magistrate's Pretrial Order No. 17.

Due to the fact that discovery in the form of depositions and document production to date has been so voluminous, plaintiffs believe that they should be allowed to supplement this list at the time that both the amendatory and final form Pretrial Orders are filed without regard to whether or not a specific document has been previously produced. Time constraints imposed in connection with the requirement of filing this Pretrial Order have been such that it has been physically impossible to review every document produced in this litigation despite the fact that plaintiffs' counsel have deployed many of themselves and their assistants on a round-the-clock basis to attempt to compile important documents for the purpose of including them in this list.

The voluminous copies of the individual plaintiffs' medical records are purposefully not being submitted at this time. Plaintiffs' and defendants' counsel have been attempting to reconcile and exchange such records in order to be certain that all parties have identical and complete sets of those records. Plaintiffs presume that it would be in all parties' best interests to attempt to stipulate as to a common set of such exhibits. Plaintiffs will attempt to achieve such stipulation prior to the time that the amendment to this Pretrial Order is due.

Plaintiffs also have purposefully not recopied each of the government contracts involved in this litigation for the reason that defendants have appended each of the contracts they claim to have fulfilled in each of their responses to Pretrial Order No. 33, all of which such copies are on file with the Clerk of this Court. Plaintiffs intend to rely upon those contracts as filed and further intend to rely upon statements contained in the defendants' filed answers to interrogatories from time to time throughout the course of this trial or of the trial of these

cases.

The plaintiffs' Exhibits are, as follows:

Exhibit #P0001

PIN # DOE120911
Date
Author HELEN KRIZEK
Addressee JONES, LINN
Description Bibliography - A Technicque for Testing
Acnegenic Potency in Rabbits.

Exhibit #P0010

PIN # 120224-26
Date
Author MARK WILTSE
Addressee BRYANT, CLYDE
Description memo entitled "tordon Chronology" bearing
Dow Document No. 120224.

Exhibit #P0011

PIN # A&G 500206
Date
Author LABEL LABEL
Addressee
Description SAMPLE OF COMMERCIAL HERBICIDES LABEL.

Exhibit #P0012

PIN # 005867-9
Date
Author ELMER P WHEELER
Addressee
Description MEMO OF ELMER P. WHEELER.

Exhibit #P0013

PIN # 005995
Date
Author ELMER P WHEELER
Addressee DUNLAP, W. P.
Description LETTER FROM ELMER P. WHEELER TO W. P.
DUNLAP.

Exhibit #P0014

PIN # 006002
Date
Author R EMMET KELLY MD
Addressee EAKIN, FRANK
Description LETTER FROM R. EMMET KELLY, M.D. TO FRANK EAKIN, NITRO.

Exhibit #P0015
PIN # DOW1568528
Date
Author NONE DOW
Addressee NOONE
Description Handwritten description Boehringer process redacted.

Exhibit #P0016
PIN # DOW120791-2
Date
Author R A HICKMAN
Addressee BEUTEL, A.P. & OTHERS AT DOW
Description MONTHLY MARKETING REPORT

Exhibit #P0041
PIN # DOW278613
Date 01-Aug
Author V K ROWE MD
Addressee UNINTELLIGBLE & SMITH, H L
WILLIAMS, G J & OTHERS
Description Letter denying the causal relationship between an exposed womans illness and her exposure to 245-T.

Exhibit #P0042
PIN # DOW980428-41
Date 04-Apr-40
Author UNKNOWN UNKNOWN
Addressee PHENOXY ACETIC ACID
Description This report goes through the different stages on how to make Phenoxy Acetic Acid.

Exhibit #P0045
PIN # DOW0614560
Date 24-Feb-49
Author UNKNOWN UNKNOWN
Addressee WARD, JUSTUS C. & USDA
WASHINGTON, D.C.
Description Incomplete (p7) memo re health precautions to be used with 2,4,-D and 2,4,5-T

15970

Exhibit #P0047
PIN # 042221
Date 16-Aug-49
Author LOUIS SCHWARTZ MD
Addressee NELSON, DR.
Description CONFIDENTIAL LETTER OF 08-16-49 FROM LOUIS SCHWARTZ M.D. TO DR. NELSON AT MONSANTO.

Exhibit #P0054
PIN # DOW32707-13
Date 23-Aug-50
Author VERALD K ROWE
Addressee AGPROJCOMM. & DOW LYNN, GEORGE E. & IRISH,D.D.

Description Results of Toxicological Tests on 2,4,5-Trichlorophenoxyacetic Acid reported by V.K. Rowe,"moderate acute oral toxicity"-rat most resistant of four species;Material markedly irritating to the eyes";"slightly to moderately irritating to the skin upon prolonged exposure."

Exhibit #P0061
PIN # 006006
Date 06-Oct-52
Author C O KOCH
Addressee KELLY, DR.
Description MEMO TO DR. KELLY FROM C. O. KOCH.

Exhibit #P0067
PIN # DOW767092
Date 27-Oct-53
Author F OYEN
Addressee BOUNDY, R.H. & DIRECTOR OF RESEARCH GAY, H.H. & ALLINSON, R.L. SUNDERLAND,W.W. & LYNN, GEORGE E.
Description Reply to 060970 letter to R. Maybury re residue methodology re phenoxyacetic acids. Refers to Yip's method1111extraction procedure5ction procedure. Quantitation by GLC. Refers to Pesticide Methodology Manual, Food and Drug Directorate. Also, "Analytical Methods for Pesticide Residues in Foods"

Exhibit #P0071
PIN # DOW874256-7
Date 09-Mar-54
Author WW SUNDERLAND
Addressee WHITE, R.O. & PESTICIDES SECTION U.S.D.A. & PLANT PEST CONTROL WASH., D.C.
Description Letter provides revised label copy for

Kuron to U.S.D.A.; gives information regarding similarities of herbicide to 2,4-D and 2,4,5-T formulations.

Exhibit #P0077

PIN # DOW278614
Date 18-Jul-55
Author HAROLD H GAY MD
Addressee ROWE, V K. & CRANDALL, R A
SMITH, H L & WILLIAMS, G J
UNINTELLIGABLE, MD
Description Letter expanding upon Dr Rowe's letter of 7/12/55 which supports claim that Esteron 245 has not caused injury to man.

Exhibit #P0078

PIN # DOW278609
Date 24-Aug-55
Author HAROLD GAY MD
Addressee TAYLOR, HAROLD & SMITH, H L
ROWE, V K & YOST JR, F N
Description Letter in which Dow's Medical Director denies causal relation between human illness and 24-D Esteron Weed Spray.

Exhibit #P0079

PIN # DOW645090
Date 26-Aug-55
Author A WIDIGER
Addressee CENTRAL RESEARCH & MIDLAND RES.INDEX
A. GRISWOLD & W.H. WILLIAMS
E.C.BRITTON & F.N. ALQUIST
Description Letter from E. Wanless, Head, Drug Section, Canadian Department of National Health and Welfare, to H.A. Thomson outlining recommended methodology for detection of unnamed substances in phenoxy herbicides including ...
SUILVEXZ . MENTIONS ENTIONSentions 1 ppm standard. [A

Exhibit #P0083

PIN # 16349
Date 07-Dec-55
Author R E SODEN
Addressee DURLAND, DR. J. A.
Description CONFIDENTIAL MEMO FROM R. E. SODEN TO DR. J. A. DURLAND DATED 12-07-55.

Exhibit #P0087

PIN # DOW782178-98
Date 01-Apr-56
Author T R TORBLAN
Addressee MCCOLLISTER D.D.

Description results of range finding toxicological test on M-531. the report states the problem, conclusions, hazards, precautions for safe handling and first aid meausres such as ingestion, eye contact, skin contact-irritation, skin absorbption and the forms that go along with these tests.

Exhibit #P0088

PIN # DOW782202-20
Date 11-Apr-56
Author MARK A WOLF
Addressee MCCOLLISTER, D. D.
Description results of range finding toxicological tests on 2-formulations of reddon. this states the problem, conclusions and first air measures for the areas of ingestion, eye contact, skin contact - irritation, skin contact - absorption, and form with the results from the tests.

PIN # DOW568814 18
Date 22-Feb-57
Author WALTER TRAPP
Addressee GOERGEN & ROWE, V.K.
OTHERS AT DOW
Description Dow Chemical International Ltd. writes letter to Boehringer Sohn thanking it for information re preparation of TCP to avoid chloracne but notes 1955 skin irritation problem Givaudan Corporation, Geneva and New Jersey with cover note distributing to trap from Goergen directing return of information to Lueck.

Exhibit #P0099

PIN # DOW278591-92
Date 21-Jun-57
Author V K ROWE
Addressee PLETCHER & CONNER, D.L.
GAY, H.H & ASHWORTH, R.H.

Description The pilot experienced eye, nasal, and throat irritation when applying Esteron 44. This suggests that the operation was being carried out with little regard for safety.

Exhibit #P0102

PIN # DOW767184
Date 06-Aug-57
Author MARK WOLF
Addressee BOUNDY, R.H. & MCINTYRE, H.H.
LYNN, G.E. & BARRONS, K.
MUSSELL, D.R. & SCOLLES, G.

Description Mark Wolf of Dow Writes report of Results of Range Finding Toxicological Tests an M-1086 (a 2,4,5T and 2,4-D Alkyl Amine Formulation checked by D.D. McCollister and Distributed to many other at Dow. Shows material in undiluted form is markedly irritating and damaging to the eye, causing marked internal effects, with little healing in 7 days. Chemical workers goggles must be worn where eye contact likely and protective clothing

Exhibit #P0107

PIN # DOW767243
Date 20-Dec-57
Author K OLSEN
Addressee MCINTYRE, H.H. & WOLF, MARK A.
BIOCHEM RES. LAB. & MCCOLLISTER, D.D.
BOUNDY R.H. & LYNN, G.E.

Description Results of Range Finding Toxicological tests on Inverton Brush Killer showing that the undiluted material is severely damaging to the eye, resulting in conjunctivitis with extensive sweg and moderate corneal damage and internam capillary infiltration.

Exhibit #P0109

PIN # DOW728167
Date 14-May-58
Author MARK WOLF
Addressee MCCOLLISTER, D.D. & HOYLE, H.R.
BIOCHEM RES. LAB.

Description Data Sheet of Properties, Health hazards, and Precautions for Safe Handling of Materials of Veon Brush Killer M-1086; corrosive to metals but apparently safe to man.

Exhibit #P0110

PIN # DOW767213

15356

Date 21-May-58
Author K OLSEN
Addressee COULTER, L.L. & MCCOLLISTER, D.D.
BOUNDY, R.H. & MCINTYRE, H.H.
PERKINS, R.P. & HART, A.
Description Results of Range Finding Toxicological tests on weed killer formulation M-1094 containing a 2,4,5T ester; the undiluted material is moderately irritating to the eye, with direct contact likely to produce conjunctival swelling and corneal damage

Exhibit #P0111

PIN # DOW728101
Date 16-Jun-58
Author MARK WOLF
Addressee MCCOLLISTER, D.D. & HOYLE, H.R.

Description Data Sheet of Properties, Health Hazards, and Precaution for safe Handling of Materials re; Dowanol 97B70 ester of 2,4,5T acetic acid 64.4%

Exhibit #P0112

PIN # DOW727967
Date 30-Jun-58
Author MARK WOLF
Addressee MCCOLLISTER, D.D. & HOYLE, H. R.

Description Data Sheet of Properties, Health Hazards, and Precautions for Safe Handling of Materials; May cause some permanent loss of vision; single prolonged exposure may cause reddening of the skin

Exhibit #P0113

PIN # DOW728103
Date 30-Jun-58
Author MARK WOLF
Addressee MCCOLLISTER, D.D. & HOYLE, H.R.
BIOCHEM RES.LAB.

Description DATA SHEET OF HEALTH HAZARDS OF REDDON CONCENTRATE

Exhibit #P0116

PIN # DOW123584-95
Date 01-Jan-59
Author F BAHRBOHM
Addressee READER'S OF & DEUTSCH, GESUNGH,
WES. VOLUME 14

Description AN ARTICLE ON THE DANGERS INVOLVED IN BEING ASSOCIATED WITH CHLORINATED PHENOLS AND NINETEEN FATAL CASES ARE REPORTED IN THE LITERATURE OF WORKING WITH

15357

PENTACHLOROPHENOL AND SODIUM
PENTACHLOROPHENOL. A SURVEY WAS ALSO
PROVIDED.

Exhibit #P0124

PIN # 005693
Date 16-Jun-59
Author ELMER P WHEELER
Addressee WEGER, L. C.
Description LETTER FROM ELMER P. WHEELER TO L. C.
WEGER, NITRO, WEST VIRGINIA, DATED 06-16-59
REGARDING THE "CHLORACNE PROBLEM - GERMAN
ARTICLE."

Exhibit #P0126

PIN # DOW728049
Date 02-Jul-59
Author K OLSON
Addressee OYEN, FRITZ & HOYLE, H.R.
BIOCHEM.RES.LAB
Description Data Sheet of Properties, Health Hazards,
®and Precautions for Safe Handling of
Materials re; M-1459 formulation of Dowanol
Ester 24D and 2,4,5T

Exhibit #P0139

PIN # DOW1123078
Date 09-Jun-60
Author CHEMICAL DOW
Addressee
Description THE LABEL FOR 2,4-DICHLOROPHENOXY-ACETIC
ACID, BUTYL ESTER FOR MANUFACTURING
PURPOSES. CAUTION MAY CAUSE SKIN
IRRITATION.

Exhibit #P0154

PIN # DOW1123026
Date 09-Jan-61
Author CHEMICAL DOW
Addressee
Description THE DOW CHEMICAL COMPANY LABEL FOR DOW
BUTYL 265 A 2,4-D WEED KILLER. FOR
CONTROLLING MOST BROAD-LEAVED WEEDS ON
FARMS. CONTAINS 3 1/3 LBS PER GALLON OF
THE BUTYL ESTERS OF 2,4-D. 2,4-D ACID
EQUIVALENT 2 2/3 PLBS PER GALLON.

Exhibit #P0157

PIN # DOW1122109-0
Date 22-Sep-61
Author CHEMICAL DOW
Addressee
Description THE DOW CHEMICAL COMPANY LABEL FOR TIPPON
2-2 BRUSH AND WEED KILLER. CAUTION: MAY

15352

CAUSE SKIN IRRITATION.

Exhibit #P0194
PIN # DOW728053
Date 08-Jan-63
Author KENNETH OLSON
Addressee OYEN, FRITZ & HOYLE, H.R.
BIOCHEMRESLAB
Description Data sheet of Properties, Health Hazards,
and precautions For Safe Handling of
Dowanol PIB ester of 2,4,5-T (91%)
-relatively no problems noted, except skin
irritation, and slight eye irritation

Exhibit #P0196
PIN # DOW816874
Date 15-Jan-63
Author DEPT OF DOW BIOPRODUCTS
Addressee
Description TABLE OF CONTENT - CONTAINING TOXICOLOGICAL
PROPERTIES OF TORDON AND TOXICOLOGICAL
PROPERTIES OF TORDON 101 MIXTURE. A
PRIVATE COMMUNICATION NOT FOR PUBLICATION
REPRODUCTION, OR GENERAL DISTRIBUTION.

Exhibit #P0199
PIN # DOW650469
Date 01-Feb-63
Author GEORGE DOWNARD
Addressee DOW CHEMICAL & FALSEY, BILL
U.S.D.A.
Description Notice of Registration under FIFRA issued
over sig. of G. Downard, Head of
Registration Section, Pesticides Regulation
Division re; Esteron 2,4,5-T concentrate on
the basis of information "furnished by the
registrant"(Dow)

Exhibit #P0203
PIN # DOW816959-60
Date 07-Mar-63
Author CHEMICAL DOW
Addressee
Description THE DOW CHEMICAL COMPANY COPY OF A LABEL
FOR TORDON 101 MIXTURE WITH USE DIRECTIONS,
USE PRECAUTIONS AND WARNING STATED.

Exhibit #P0204
PIN # DOW816955-56
Date 07-Mar-63
Author CHEMICAL DOW
Addressee
Description THE DOW CHEMICAL COMPANY LABEL FOR TORDON
101 MIXTURE. THE LABEL CONTAINS USE

15359

DIRECTIONS, USE PRECAUTIONS, AND WARNING.
(SEE EXHIBIT 207)

Exhibit #P0205

PIN # DOW818958
Date 12-Mar-63
Author MARK WOLF
Addressee MCINTYRE, M. M.
Description SUBJECT: SUGGESTED PRECAUTIONARY LABELING FOR TORDON 101 MIXTURE. STATES WHAT EFFECTS THE CHEMICAL HAS AND WHAT TO DO IF CONTACT OCCURS. THIS IS A SAMPLE LABEL.

Exhibit #P0207

PIN # DOW820879
Date 27-Mar-63
Author CHEMICAL DOW
Addressee
Description CONFIDENTIAL: COMPLETE INGREDIENT STATEMENT FOR TORDON 101 MIXTURE M-2439, THIS STATES ACTIVE AND INERT INGREDIENTS AND HOW MUCH OF EACH.

Exhibit #P0213

PIN # DOW119118-21
Date 19-Apr-63
Author MARK A WOLF
Addressee MNNAMARA, BERNARD & LYNN. G. E.
Description A TABLE CONTAINING A SUMMARY OF ACUTE ORAL TESTS (BY INTUBATION) ON 2,4-D AND 2,4,5-T AND A NUMBER OF THEIR DERIVATIVES PREPARED BY BIOCHEMICAL RESEARCH LABORATORY.

Exhibit #P0215

PIN # 0402786
Date 22-Apr-63
Author GEORGE LYNN
Addressee DELMORE, GEN. FRED & SHAW, DR. WARRENC.
U.S. ARMY & U.S. DEPT. DEFENSE
U.S.D.A. & ARMY CHEMICAL CENTER
Description LYNN LETTER TO DELMORE RE 24D&245T TOXICITY

Exhibit #P0216

PIN # D 802819-20
Date 22-Apr-63
Author G E LYNN
Addressee DELMORE, GEN. FRED J & SHAW, DR. WARREN C.
Description G. E. lynn's letter dated 04-22-63 to Brigadier General Fred J. Delmore.

Exhibit #P0220

15360

PIN # DOW650079-83
Date 29-Apr-63
Author MILT HUNT
Addressee LYNN, GEORGE & JOHNSON, JULIUS
COULTER, L.L. & WOLF, MARK
MCINTYRE, H.H. & FALKENSTEIN, W.J.
Description limited release for sales directed to many
at Dow relating to Vertron CE with Diesel
Fuel Oil and with sample label attached
refers to meeting customer (AT&T)
specifications

Exhibit #P0221

PIN # DS 17940-41
Date 02-May-63
Author R J MARRESE
Addressee CECIL, LARRY & GUIDI, R. A.
KING, J. O. & CHANDLER, E. L.

Description diamond alkali co. confidential interoffice
correspondence from R. J. Marrese to Larry
Cecil dated 05-02-63.

Exhibit #P0226

PIN # DOW650262-70
Date 17-May-63
Author JULIUS JOHNSON
Addressee LYNN, GEORGE & BARRON, K.C.
WOLF, MARK & MCINTYRE, H.H.
FALKENSTEIN, W.J. & COULTER, L.L.

Description limited release to sales of a 2,4,5-T
formulation known as Vertron T, with notes
of Julius Johnson and George Lynn, H.H.
McIntyre and others relating to use,
labeling, and fact that product had to be
registered to be sold to to customers
identified and with reference to competing
against Amchem for business.

Exhibit #P0232

PIN # DOW820874
Date 12-Jun-63
Author M W DUNDERLAND
Addressee DOWNARD, C.M. & LOARY, J. S.
LYNN, G. E.

Description LETTER FROM M.W. DUNDERLAND, STAFF
ASSISTANT, BIOPRODUCTS DEPARTMENT TO C.M.
DOWNARD REGARDING TORDON 10 MIXTURE AND A
ADDITIONAL INVESTIGATION OF THE EFFECTS.

Exhibit #P0233

PIN # DOW820866
Date 28-Jun-63
Author G M DOWNARD

Addressee SUNDERLAND, W. W.
Description LETTER DATED 06-28-63 FROM G. M. DOWNARD
HEAD, REGISTRATION SECTION TO MR. W. W.
SUNDERLAND OF DOW C CHEMICAL COMPANY.
CONTAINING A REGISTRATION NOTICE UNDER THE
FEDERAL INSECTICIDE, FUNGICIDE, AND
RODENTICIDE ACT FOR TORDON 101 MIXTURE.
REGISTRATION NUMBER IS 464-306.

Exhibit #P0234

PIN # H28114
Date 03-Jul-63
Author JOHN FRAWLEY
Addressee ROWE, V.K. & DUNN, C.L.
HUNT, WM.H., PH.D.
Description George Lynn, then Director of Registration,
Bioproducts Department of Dow, writes Brig.
General Fred J. Delmore, U.S. Army at the
request of Dr. Warren C. Shaw of U.S.D.A.
and encloses toxicity data re 2,4,5T and
2,4D, stating "We would like to also
mention that we have been manufacturing
2,4-D and 2,4,5-T for over ten years and
...to the best of our knowledge, none of
the workmen in these factories have shown
any ill effects as a result of working with
these

Exhibit #P0235

PIN # H28114-15
Date 03-Jul-63
Author JOHN P FRAWLEY
Addressee ROWE, V.K. & HUNT, W. H.

Description john p. frawley's letter to V. K. rowe of
07-03-63.

Exhibit #P0239

PIN # JUS215 1947
Date 19-Jul-63
Author ARMY ARMY
Addressee
Description 1963 MILITARY SPECIFICATIONS.

Exhibit #P0240

PIN # DOW981607
Date 19-Jul-63
Author ARMY ARMY
Addressee
Description MILITARY SPECIFICATIONS FOR HERBICIDE
N-BUTYL 2,4,5-TRICHLOROPHENOXYACETATE.

Exhibit #P0253

PIN # DOW816941

15362

Date 18-Nov-63
Author MARK G WILTSE
Addressee LYNN, G. E. & HAMMER, O.N.
RITTY, P. M. & BRYANT, C. A
FALSEY, W. P. & OTHERS
Description LETTER DATED 11-18-63 FROM MARK G. WILTSE,
MANAGER, TORDON PRODUCT PALNNING TEAM TO G.
E. LYNN, BIOPRODUCTS DEPT. REGARDING THE
CORRECTION OF TORDON 101 LABEL.

Exhibit #P0256
PIN # DOW820863
Date 04-Dec-63
Author CHEMICAL DOW
Addressee
Description CONFIDENTIAL: A LISTING OF INGREDIENTS
CONTAINED IN TORDON 101 MIXTURE AND THE
AMOUNT OF EACH

Exhibit #P0257
PIN # DOW820861-63
Date 05-Dec-63
Author N W MCINTYRE
Addressee MR. GEORGE M BERNARD & BIOPRODUCTS
WASHINGTON OFFICE
Description Revisions in labeling due to new findings
regarding purity of product.

Exhibit #P0263
PIN # DOW820833
Date 13-Jan-64
Author G M DOWNARD
Addressee SIDNEY B SACHS
Description U.S. Department of Agriculture is advising
Dow Chemical Company that the proposed new
labeling is not acceptable due to implied
change in weight.

Exhibit #P0274
PIN # DOW620859
Date 09-Mar-64
Author ILLEGIBLE ILLEGABLE
Addressee DR/MR LEARY
Description This memorandum is totally illegible.

Exhibit #P0293
PIN # DOW816938
Date 18-May-64
Author WP FALSEY
Addressee C.A. HIGHHILL & C. A. BRYANT
G.E. LYNN & L.L. COULTER
R. C. DOSSER & OTHERS
Description Because there is evidence that there is a
large amount of Tordon Acid below the 65%

15363

purity level, specifications are given on how to blend it with other materials going into Tordon 101 to achieve an AVERAGE of 65% purity. Mention is made that normally, this impure Tordon Acid would not be used.

Exhibit #P0308

PIN # DOW816937
Date 29-Jun-64
Author MR FALEDY
Addressee A.L. HOLIDAY & G.E. LYNN
J.A. TELLY & D. B. FLETCHER
GLENN SHAW

Description Request for written statements on waste disposal and statement that product is not being placed in water, streams, etc. They wish to avoid adverse publicity.

Exhibit #P0313

PIN # A&G85-87DOW
Date 30-Jul-64
Author RAY HOLMES
Addressee HOYLE, H.R.

Description 3 page letter giving history of process changes in 199 bldg. by holmes, supervisor of plant, and which documents high production and beginning of outbreak of chloracne in February, 1964 with dated summary of events on last page.

Exhibit #P0314

PIN # DOW 766762-4
Date 30-Jul-64
Author RAY HOLMES
Addressee HOYLE, H. R.

Description Ray holmes' letter to H. R. hoyle dated 07-30-64.

Exhibit #P0319

PIN # DOW132506
Date 08-Sep-64
Author L WESTOVER
Addressee HOLMES, RAY

Description Westover reports that Lab tests in 5 sample of caustic insoluble oil from TCP process estimates TCDD level at .2% and refers to the presence of other halogenated mamaterials detected as well.

Exhibit #P0320

PIN # DOW 132506
Date 08-Sep-64
Author L B WESTOVER
Addressee HOLMES, R

15364

Description 09-10-64 westover report to holmes re: results of analysis of dioxin in certain samples.

Exhibit #P0323

PIN # DOW568604-5
Date 15-Sep-64
Author DR HANS MERTZ
Addressee DOW CHEMICAL CO.
Description Dr. Mertz related visit of Trapp, Lueck, and Silverstein and encloses confidential paper re isolation of chloracne excitors and production of 2,4,5-T acid dated 12/09/56.

Exhibit #P0325

PIN # DOW132504-5
Date 05-Oct-64
Author RAY HOLMES
Addressee GOERGEN, G.G. & HUTCHENREUTHER,C.O.
DYLEWSKI, S.W. & HABERSTROH, W.H.

Description Holmes writes others at Dow re chloracne producing material, and states attempts to reduce the TCDD type materials made in our process have not been encouraging; and "I am not confident that we have done or are doing enough at 199 Bldg. to overcome the chloracne trouble" but "number of people are encouraging me..to continue" at capacity

Exhibit #P0326

PIN # DOW 132504-5
Date 05-Oct-64
Author R D HOLMES
Addressee GOERGEN, G. G. & HUTCHENREYTHHER, C
DYLEWSKI, S. W. & HABERSTRCH, W. H.

Description Ray holmes' letter of 10-05-64 to G. G. Goergen and others.

Exhibit #P0331

PIN # DOW766704-8
Date 20-Nov-64
Author RAY HOLMES
Addressee UNKNOWN
Description Ray Homes, Supervisor of 199 bldg.at Dow, writes Report (which has been re-dacted, in pertinent part),re; Hydrolysis of Tetra-Chlorobenzene using Flake Caustic In (redaction);describes differences is process from '46-52 and '55-62

15365

Exhibit #P0334
PIN # DOW119502-3
Date 03-Dec-64
Author DAVID H GROTH
Addressee E.T. UPTON
Description Author speculates on root of skin an liver toxicity in 2,4,5-T is due to some by-product. Asks for samples of purest 2,4,5-T and commercial 2,4,5-T and product before the emulsifiers have been added for testing.

Exhibit #P0336
PIN # A&G 500040-1
Date 04-Dec-64
Author DR DAVID GROTH
Addressee UPTON, EDWARD T.
Description 12-04-64 LETTER FROM DR. DAVID GROTH TO MR. UPTON.

Exhibit #P0338
PIN # DOW33304-17
Date 08-Dec-64
Author N E SKELLY
Addressee BRADLY, K.B. & COULTER, K.E.
 DELISLE, N.G. & GILL, H.M.
 GOERGEN, G.G & OTHERS
Description Isolation and Identification of possible Acnegens from the Caustic-Insoluble Portion of the products from the 2,4,5-T Process. Skin sensitivity tests on rabbits have positively shown 2,3,7,-T to be by far the most severe skin irritant among the group of compounds identified.

Exhibit #P0339
PIN # 00000000
Date 11-Dec-64
Author LINDLEY S DEATLEY
Addressee DOSSER, P. C.
Description 12-11-64 LETTER FROM MR. DEATLEY TO DOSSER OF DOW.

Exhibit #P0341
PIN # DOW568606-8
Date 15-Dec-64
Author DR HANS MERTZ
Addressee DOW CHEMICAL CO.
Description Same exhibit as 370 except third page attached which shows molecular drawing of TCDD.

Exhibit #P0342
PIN # DOW568609-13

15366

Date 17-Dec-64
Author DR HANS MERTZ
Addressee SILVERSTEIN, LARRY
Description Boehringer informs Silverstein of Dow of rabbit testing data done in 1955 showing death, liver damage, kidney and lung failures.

Exhibit #P0343
PIN # DOW820336
Date 20-Dec-64
Author NONE NONE
Addressee
Description General Memorandum regarding materials of 3,5,6-T Chemical Tordon and directions for use. Back panel with caution shown.

Exhibit #P0344
PIN # DOW14050-57
Date 22-Dec-64
Author HAROLD GILL
Addressee COULTER, K.E. & GOERGEN, G.G.
 HOLMES, RAY D. & HOYLE, H.R.
 KEY, M. & SILVERSTEIN, L.
Description Harold Gill of Dow writes Analytical Method to determine TCDD in caustic insolubles of 2,4,5-TCP process and distributes it to 19 others at Dow

Exhibit #P0345
PIN # DOW 14050-57
Date 22-Dec-64
Author HAROLD GILLS
Addressee COULTER, K. L. & YRBLE, R.
 ERLEY, D. S. & GREENE, L. M.
 GOARGEN O. C. & HABERSTRCH, W. H.
Description Harold gill's gas/liquid chromatographic procedure to analyze caustic insolubles for compounds capable of causing chlorance, principally 2,3,7,8-tetrachlorodibenzo-p-dioxin.

Exhibit #P0346
PIN # 00000000
Date 28-Dec-64
Author LINDLEY S DEATLEY
Addressee DOSSER, P. C.
Description 12-28-64 LETTER OF DEATLEY TO DOSSER OF DOW.

Exhibit #P0351
PIN # 00000000
Date 12-Jan-65
Author L S DEATLEY

15367

Addressee THOMPSON, BOB & HOWARD, HAROLD

Description 01-12-65 T-H INTEROFFICE MEMO.

Exhibit #P0352

PIN # DOW766687-94

Date 12-Jan-65

Author N POFFENBERGER

Addressee SAUERS, R. & TRAPP, W.B.
POFFENBERGER, N. & WIDIGER, A.
LUECK, A & OTHERS

Description This information consists of diagrams and formulas which are difficult to interpret.

Exhibit #P0355

PIN # 00000000

Date 14-Jan-65

Author EDWIN T UPTON

Addressee GROTH, DR. DAVID

Description 01-14-65 LETTER FROM MR. UPTON TO DR. GROTH.

Exhibit #P0356

PIN # DOW1120903

Date 14-Jan-65

Author EDWIN T UPTON

Addressee GROTH, DR. DAVID M.

Description letter dated 01-14-65 from edwin t. upton to Dr. David M. Groth regarding the samples that were requested for the study of the chloracne problem.

Exhibit #P0357

PIN # DOW568569-72

Date 26-Jan-65

Author WALTER B TRAPP

Addressee CHAMBERLAIN, L.C. & COULTER, K.E.
HABERSTROH, W.H. & GOERGEN, G.G.
SAUERS, R.C.

Description Three page summary attached to cover letter admits TCDD chloracne exciter shows conditions which minimize TCDD formation and shows conditions which favor TCDD formation "the disadvantage of the non-aqueous solvent system is . . . which can plug a tube reactor."

Exhibit #P0358

PIN # DOW569137-38

Date 27-Jan-65

Author WALTER TRAPP

Addressee DOW CHEMICAL CO.

Description Graphs show Dow discovered increase in production of TCDD at higher temperature;

15368

2nd page initialed A.H.W. and dated January 28, 1964; A.H.W. is Dow's Widiger.

Exhibit #P0359

PIN # DOW568535-7
Date 28-Jan-65
Author WALTER B TRAPP
Addressee MERTZ, DR. HANS
Description This letter contains a report of a telephone conversation between four Dow people and Dr. Merz with recitation of questions and answers.

Exhibit #P0360

PIN # DOW1120905
Date 31-Jan-65
Author DAVID H GROTH
Addressee KRAUS, GUNTHER E.
Description reports stating people developing chloracne and liver damage from over exposure to 2,4,5t in industry.

Exhibit #P0361

PIN # DOW766309-36
Date 03-Feb-65
Author N POFFENBERGER
Addressee LUECK, AL & COULTER, K.
STAEHLING, E. & TRAPP, WALTER
HABERSTROH, W.H. & OTHERS
Description Preliminary process design for the manufacture of 245-Trichlorophenol using 100% NaOH distributed to manufacturing personnel at Dow, and designed at Dow

Exhibit #P0362

PIN # DOW766309-36
Date 03-Feb-65
Author N POFFENBERGER
Addressee
Description A process design is presented, that advantage be taken of the high reaction rates. This document goes into detail about various Recycle, Reaction, and Analysis Profiles.

Exhibit #P0363

PIN # DOW569168-92
Date 03-Feb-65
Author N POFFENBERGER
Addressee TRAPP, W. & COULTER, K.
LUECK, A. & OTHERS AT DOW
Description Poffenberger of Dow prepares and distributed processed design to prepare

15369

2,4,5-TCP using 100 percent sodium hydroxide.

Exhibit #P0364

PIN # UNKNOWN
Date 05-Feb-65
Author KY HANSON
Addressee SPALDING, J.L. & PATENT DEPARTMENT
566 BUILDING & DOW CHEMICAL

Description Letter shows Dow sold surplus 245-T and surplus 2,4-D, to which was added 481,500 pounds iso-butyl ester 2,4,5-T and sold to Army procurement at price of \$229,338. in November, 1961; Letter also refers to other sales, and bids and sales of Monsanto, Hercules & Diamond, and royalties due Dow on such sales.

Exhibit #P0365

PIN # DOW569105-12
Date 09-Feb-65
Author SAME ILLEGIBLE
Addressee ANDERSON & LUCEK
WOLF & WEST
TRAPP & OTHERS

Description This document provided by Dow Chemical are the Safety Techniques suggested.

Exhibit #P0366

PIN # 00000000
Date 10-Feb-65
Author LINDLEY S DEATLEY
Addressee WILLIAMS, G. J & GRANT, L .B
CORBIN, W. L. & HARRIS, T. W.
TUCKER, J. C. & THOMPSON, R. S.
Description MEMO OF DISCUSSIONS AT DOW CHEMICAL CO.
HELD 2/10-11/65, SIGNED BY MR. DEATLEY AND
DATED 2-15-65.

Exhibit #P0367

PIN # DOW568549
Date 15-Feb-65
Author WALTER B TRAPP
Addressee DOLL, DR. O.

Description Trapp thanks Boehringer for help, says restriction in communication because of our secrecy agreement and because of this, Koopmann not fully informed of seriousness of Dow health problem.

Exhibit #P0369

PIN # 0000000
Date 17-Feb-65

15370

Author EDWIN T UPTON
Addressee GROTH, DR. DAVID M
Description 02-17-65 LETTER TO MR. UPTON TO DR. GROTH.

Exhibit #P0370

PIN # DOW107810-11
Date 17-Feb-65
Author FRANK S DAVIS
Addressee GIBSON, JOHN
Description letter dated 02-17-65 from frank S. davis, research plant physiologist to Mr. John Gibson of dow and a paper on moisture stress based on an article given at WSA (on the Mechanism of inhibition of KAD-linked dehydrogenese Systems by Piclorax.

Exhibit #P0371

PIN # DOW129844-6
Date 22-Feb-65
Author DONALD PLETCHER
Addressee ROWE, V.K. & FALSEY, W.P.
HOYLE, H.R. & GILL, W.M.
Description SILVERSTEIN, LARRY & LYNN, GEORGE E.
minutes of meeting held at Dow among Dow employees; notes Dow knows rabbit ear tests sensitive to 4 ppb and "agreed that Rowe should move ahead with contact with U. S. Public Health Service and Department of Agriculture representatives as soon as our data is better corrolated." "contacts to be made with other" manufacturers; "Rowe to serve as Dow contact for any inquiries"

Exhibit #P0372

PIN # DOW 129844-6
Date 22-Feb-65
Author D E PLETCHER
Addressee ROWE, V. K. & FALSEY, W. P.
BARRON, K. C. & CORBIN, W. L.
HOFF, R. C. & HOYLE, H. R.
Description D. E. pletcher report dated 2-22-65 of the "exciter problem" meeting which took place 2-18-65.

Exhibit #P0374

PIN # 5972-3
Date 24-Feb-65
Author EMMET KELLY
Addressee FILE & MONSANTO
Description Emmet Kelly, M.D. of Monsanto writes memo to file of his Telephone conversation with V.K. Rowe of Dow concerning Dow's analysis of Monsanto's 2,4,5-T at 3-10 ppm TCDD;

15371

together with customer complaint references and meetings to be held.

Exhibit #P0375

PIN # 005972-3
Date 24-Feb-65
Author R EMMET KELLY MD
Addressee
Description MEMO FROM R. EMMET KELLY, M.D. REGARDING HIS DISCUSSIONS WITH V. K. ROWE OF DOW, DATED 02-24-65.

Exhibit #P0376

PIN # MON 005972-3
Date 24-Feb-65
Author EMMET KELLY
Addressee FILE
Description DOW HAS 20 CASES OF CHLORACNE. DOW HAS ANALYSES SAMPLES FROM MONSANTO AND FOUND OUR 2,4,5-T AHS 3-10 PPM OF TCDD WHICH KELLY SAYS ROWE IS SURE IS THE CHLORACNE CAUSING AGENT. DOW WILL HAVE MANAGEMENT MEETING TODAY; ROWE WANTS CRASH MEETING WITH ALL PRODUCERS TO REACH A SPEC LEVEL IN ORDER TO ELIMINATE THIS PARTICULAR CONTAMINANT BEFORE THE PUBLIC HEALTH SERVICE GOT INTO THE ACT.

Exhibit #P0378

PIN # 00000000
Date 26-Feb-65
Author DR DAVID H GROTH
Addressee UPTON, EDWIN T.
Description 02-26-65 LETTER OF MR. UPTON TO DR. GROTH.

Exhibit #P0379

PIN # DOW 19294-5
Date 01-Mar-65
Author J D DOEDENS
Addressee ROWE, V. K.
Description TRICHLOROPHENOL SUMMARY DATED 3-1-65, BY J. D. DOEDENS OF DOW.

Exhibit #P0380

PIN # DOW19294-5
Date 01-Mar-65
Author J D DOEDENS
Addressee ROWE,V.K. & UNKNOWN
Description J.D. Doedens of Dow writes a very descriptive summary of the trichlorophenol producers, his personal knowledge of toxicology, V.K. Rowe's contacts (and those of others at Dow) with other producers, the

15372

scheduled meeting in March, 1965;"most toxic materials known"..."positive action at 40 parts per billion" ..."equivocal results at 4 ppb"..identifies symmetrical dioxin as the agent.

Exhibit #P0381

PIN #

DOW569221-33

Date

02-Mar-65

Author

J L CORNELL

Addressee

COULTER, K. E. & DELISLE, N. G.
DYLEWSKI, S. W. & GOERGEN, G. G.
HUTCHENREYTH C O & OTHERS

Description

this contains the following information: authorization request, project schedule - projected targets, manpower, process review, reactor procurement, plot plan and site, research program and figures.

Exhibit #P0382

PIN #

DOW129925

Date

02-Mar-65

Author

V K ROWE

Addressee

BARRONS, K.C. & CORBIN, W.L.
HOYLE, H.R.

Description

This meeting was called to discuss the disposition of the Monsanto 2,4,5-T which contains from 3 to 7 ppm.

Exhibit #P0383

PIN #

DOW569221-33

Date

02-Mar-65

Author

S J HARRIS

Addressee

LUECK, A F & COULTER, K E
DELISLE, N G & GOERGEN, G G
HUTCHENREUTHER, C O & OTHERS

Description

This project deals with Authorization Request, Project Schedule - Project Targets, Manpower, Process Review, and Discussion. Questions were raised regarding many "if's" involved with this project.

Exhibit #P0385

PIN #

DOW1111-1127

Date

10-Mar-65

Author

LARRY SILVERSTEIN

Addressee

LYNN, GEORGE & HUTCHENREUTHER
GOERGEN & STAEHLING
BAILEY & UNIT INDEX

Description

Early History of the Chloracne Problem - Biochem's Contribution authored by Larry Silverstein of Dow and distributed to other Dow Employee's; Describes at length the

15373

chloracne outbreak, the disease, the identification of TCDD, liver damage, european experience, rabbit ear testing, german problems in '55, and '57 active samples from 199 Bldg. at Dow.

Exhibit #P0386

PIN # DOW129927
Date 10-Mar-65
Author LARRY SILVERSTEIN
Addressee ROWE, VERALD K. & LYNN, GEORGE
HUTCHENREUTHER, C.O. & GILL, W.M.
PLETCHER, DONALD & OTHERS
Description DOWNUMEROUS
Memo to 23 Dow employees relating the hazard found in Dow's analyses of lots of Monsanto's 2,4,5-T acid; "Material represents a definite hazards requiring all the precautions used in 199 building.."

Exhibit #P0387

PIN # DOW129927
Date 10-Mar-65
Author L G SILVERSTEIN
Addressee RILEY, P. H. & TUCKER, J.C.
SMILEY, R.N. & HARRIS, J. W.
GRANT, L.B. & OTHERS
Description Rabbit ear tests on twelve lost of Monsanto 2,4 T acid have shown moderate to severe response in eight to 20 percent concentration in ethanol. This material presents a definite hazard which would require all the precautions used in 199 Bldg and 349 Bldg.

Exhibit #P0388

PIN # DOW172136-37
Date 10-Mar-65
Author G SILVERSTEIN
Addressee RILEY, F.H. & TUCKER, J.C.
SMILEY, R.N. & HARRIS, J.W.
GRANT, L.B. & OTHERS
Description Rabbit ear tests have shown moderate to severe response in eight cased as 10% concentration in ethanol. This material presents a definite hazard which would require all precautions used in 199 Bldg and 349 Bldg to prevent injury. Shipping this material to Riverdale and Woodbury is a definite risk to their employees, especially since they are probably unaware of the problem and are probably taking no precautions.

Exhibit #P0389

15374

PIN # DOW569141-42
Date 10-Mar-65
Author A H WIDIGER
Addressee TRAPP & DOW CHEMICAL CO.

Description Widiger of Dow prepares graphs showing time--temperature, factors in reaction to produce tetrachlorobenzene.

Exhibit #P0390

PIN # DOW 1111-27
Date 11-Mar-65
Author LARRY SILVERSTEIN
Addressee

Description "EARLY DOW HISTORY OF THE CHLORACNE PROBLEM--BIOCHEM'S CONTRIBUTION" DATED 03-11-65 OVER INITIALS OF LARRY SILVERSHEIN OF DOW.

Exhibit #P0391

PIN # DOW1111-27
Date 11-Mar-65
Author LARRY SILVERSTEIN
Addressee BAILEY & HUTCHENSUTTEN
GOERSEN & LUCEK
OTHER ILLEGIBLE

Description An outbreak of chloracne in the trichlorophenol process has resulted in approximately 40 cases of chlora in Dow people. Chloracne is a skin disorder characterized by the appearance of black heads and small bumps.

Exhibit #P0393

PIN # DOW569239-43
Date 15-Mar-65
Author R E ANDERSON
Addressee DELISLE, N. G. & COULTER, K. E.
WOLF, R. W. & GOERGEN, G. G.
LUSCK, A & OTHERS

Description this reports states the reason for building a new facility.

Exhibit #P0394

PIN # DOW569239-43
Date 15-Mar-65
Author R E ANDERSON
Addressee COULTER, K.E. & WOLF, R
LUSCK, A. & TRAPP, W.
OTHERS

Description The major consideration in the design of the new plant is to prevent the production of chloracne compounds but to minimize operator contact with process streams and

15375

equipment.

Exhibit #P0395

PIN # DOW569251-4
Date 17-Mar-65
Author UNKNOWN REA
Addressee UNKNOWN
Description Dow document, evidently internal, composed by "R.E.A." describing the Trichlorophenol Reactor cycle.

Exhibit #P0398

PIN # DOW569247-50
Date 18-Mar-65
Author J S HARRIS
Addressee ANDERSON, R. E & LUECK, A. F.
DELISLE, N .G & WEHN, W. E.
CORNELL, J. L. & OTHERS
Description discussed were preliminary/drying flow sheets, steel shell and tube phenate colers with temperature controls, etc.

Exhibit #P0399

PIN # DOW569247-50
Date 18-Mar-65
Author J S HARRIS
Addressee COULTER, K.E. & GRAVES, H.E.
WOLF, R.R. & HABERSTROH, W.H.
DYLEWSKI, S.W. & OTHERS
Description The purpose of the meeting was to review the preliminary reactor and neutralization/drying flow sheets.

Exhibit #P0400

PIN # DOW119084-5
Date 19-Mar-65
Author CH BOEHRINGER SOHN
Addressee DOW CHEMICAL & BRANCH, C.B.,V.P.
Description C.H. Boehringer Sohn of Germany writes Dow letter form agreement calling for the payment by Dow to the German firm for disclosure of processes aimed at the prevention of chloracne arising out of the production of sodium 2,4,5-trichlorophenate; Calls for payment of \$35,000 (sic?)(copy # not clear).

Exhibit #P0401

PIN # 19193-8
Date 19-Mar-65
Author LARRY SILVERSTEIN
Addressee ROWE, V.K. & LYNN, GEORGE
HUTCHENREUTHER C.O. & WILTSE, MARK

15376

Description PETERSEN, JACK & OTHERS
Larry Silverstein of Dow writes detailed report concerning the discussion held at Dow on 3-24-65 among representatives of Dow, Hooker, Diamond Alkali and Hercules; document references the presentations that were made by Dow employees at the meeting, together with extensive knowledge of the toxic properties of dioxin.

Exhibit #P0402

PIN # 379-80
Date 19-Mar-65
Author VERALD ROWE
Addressee KELLY, EMMET, M.D. & WILKENFELD, DR.J.
VERHOEZE, RAYMOND & KENNEDY, FRANCIS
CHANDLER, ED & FRAWLEY, DR. JOHN P.

Description 3-19-65 letter from V.K. Rowe of Dow to various manufacturer's representatives, describing conversations he has had with them, and setting up meeting to be held 3-24-65 at Dow, Midland, MI.

Exhibit #P0403

PIN # DOW 119084-5
Date 19-Mar-65
Author C H BOEHRINGER SOHN
Addressee BRANCH, C. B. & DOW CHEMICAL CO.

Description LETTER FROM AGREEMENT BETWEEN C. H. BOERINGER SOHN AND DOW CHEMICAL COMPANY, DATED 3-19-65.

Exhibit #P0404

PIN # DOW19200-1
Date 19-Mar-65
Author V K ROWE
Addressee KELLY, EMMET & WILKENFELD, DR. J
VERHOEZE, RAYMOND & KENNEDY, FRANCIS
CHANDLER, DR. ED & OTHERS

Description letter inviting each to Midland to dicuss the toxicological problems caused by the presence of certain highly toxic impurities in 2,4,5-t and related materials.

Exhibit #P0405

PIN # DOW568796-7
Date 19-Mar-65
Author SOHN BOEHRINGER
Addressee DOW CHEMICAL
Description English translation of an agreement letter.

Exhibit #P0415

15377

PIN # DOW 19193-98
Date 29-Mar-65
Author L Q SILVERSTEIN
Addressee RILEY, F. H. & SMILEY, R. N.
GRANT, L. B. & HUTCHENREUTHER, C.O.
AMSTUTZ, F. C. & FALSEY, W. P.
Description 03-29-65 "REPORT ON THE CHLORACNE PROBLEM
MEETING ON 03-24-65" BY L. G. SILVERSTEIN
OF DOW TO V. K. ROWE AND MANY OTHERS.

Exhibit #P0416

PIN # DOW019193
Date 29-Mar-65
Author V K ROWE
Addressee RILEY, F.H. & SMILEY, R.N.
GRANT, L.B. & LYNN, O.
PLETCHER, D & OTHERS
Description illegible

Exhibit #P0417

PIN # DOW29959-64
Date 29-Mar-65
Author V K ROWE
Addressee RILEY, F.H. & SMILEY, R.H.
GRANT, L.B. & HUTCHENREUTHER, C
AMSTUTZ, F.C. & OTHERS
Description Dr. Holder reviewed the medical side of the
Dow and said that we now have approximately
60 to 70 cases of individuals with
chloracne ranging from severe cases to mild
cases. The limit is 1 ppm for 2,4,5-T and
for 2,4,5-T Acid, either acetic or pro-
pionic.

Exhibit #P0424

PIN # DOW568583
Date 09-Apr-65
Author WALTER B TRAPP
Addressee MERTZ, DR. HANS & FRANKFORT OFFICE DOW
AMOS DOW INT'L
Description Trapp reports results of Dow studies on
Boehringer TCP samples including rabbit
tests and analyses of TCBD content.

Exhibit #P0427

PIN # DOW751869
Date 15-Apr-65
Author HAROLD L GORDON
Addressee FLAMMANG & DIVISION MANAGER
MAGNA CORP. & ROWE, V.K.
OTHERS AT DOW
Description Medical Director of Dow writes Division
Manager of a customer giving complete
assurance that impurity present in Dovicide

15378

2 could not cause chloracne even with gross overexposure and says Dow imposed standard on finished product of zero using an analytical method to 1ppm.

Exhibit #P0428

PIN # DOW568577-8
Date 22-Apr-65
Author CH BOEHRINGERSOHN
Addressee DOW CHEMICAL & RE245TCONTRACT

Description Letter in german from C.H. Boehringer Sohn to Dow Chemical Company, Midland, Michigan, re; 2,4,5-T"KontraKt"

Exhibit #P0431

PIN # DOW012036-37
Date 04-May-65
Author L C WHITE JR
Addressee AMSTUTS, F.C. & HOFF, R. C.
SOULATI, J. J. & SILVERSTEIN, L.
DOSSER, R. C. & SMITH, K. A.

Description a conference to discuss the dioxin addition to the specification.a tentative program of testing for the dioxin was set up.

Exhibit #P0433

PIN # DOW765918
Date 19-May-65
Author JS HARRIS
Addressee COULTER, K.E. & LUECK, A.F.
TRAPP, W. & HABERSTROH, W.H.
WIDIGER, A.H. & OTHERS

Description 2,4,5-trichlorophenol process data and physical properties summary showing heats of reaction data "assembled to assist those working on the trichlorophenol process problem"

Exhibit #P0434

PIN # DOW765918-19
Date 19-May-65
Author J S HARRIS
Addressee COULTER, K.E. & GRAVES, H.E.
ANDERSON, R.E. & LUECK, A.F.
WEHN, W.E. & OTHERS

Description Existing and generated raw material, intermediate and byproduct, and product data are herein assembled assist those working on the trichlorophenol process problem.

Exhibit #P0436

PIN # DOW107740-45

15379

Date 01-Jun-65
Author UNIVERSITY COLORADO STATE
Addressee
Description an article by colorado state university,
"how safe are chemical weed killers". it
states the steps of testing that is done
before a chemical goes on the market.

Exhibit #P0438
PIN # DOW 004
Date 02-Jun-65
Author EDWIN T UPTON
Addressee GROTH. DR. DAVID H
Description 06-02-65 LETTER OF MR. UPTON TO DR. GROTH.

Exhibit #P0441
PIN # 21745-48
Date 22-Jun-65
Author UNKNOWN DOWCHEMICAL
Addressee NOT SHOWN
Description Dow's Method for the Determination of
2,3,7,8 TCDD in 2,4,5-T by GLC dated June
22, 1965

Exhibit #P0442
PIN # DOW12986061
Date 24-Jun-65
Author VERALD ROWE
Addressee MULHOLLAND, ROSS & SILVERSTEIN, LARRY
HOLDEMAN, GRADY & GOERGEN, G.
HOYLE, H. & FALSEY, W.
Description Dow's V.K. Rowe writes, Ross Mulholland of
Dow of Canada, and describes the concern
arising out of the contamination of tcp and
245-t; he describes the "exceptional
toxicity" of dioxin; and "P.S. Under no
circumstances may this letter be repro-
duced, shown, or sent to anyone outside of
Dow

Exhibit #P0443
PIN # DOW 129860-1
Date 24-Jun-65
Author V K ROWE
Addressee MULHOLLAND, ROSS & SILVERSTEIN, L.
OTIS, C. & HOLDEMAN, ORADY
AMSTUTZ, F. C. & GOARGAN, O
Description V. K. ROWE'S LETTER TO ROSS MULHOLLAND
DATED 06-24-65.

Exhibit #P0445
PIN # DOW568533-34
Date 07-Jul-65
Author WALTER B TRAPP

15380

Addressee MERZ, DR. HANS & BOEHRINGER, SOEN

Description Germans ask Dow for information re analytical methods using GLC to determine TCDD; encloses copy of method for analysis for dioxin in 2,4,5-T acid (MLW 65.11).

Exhibit #P0452
PIN # DOW547077-82
Date 24-Aug-65
Author UNKNOWN DOW
Addressee UNKNOWN
Description Description of EWsteron T2 formulation with labeling information on Dow letterhead refers to patent and recommendations for use.

Exhibit #P0454
PIN # DOW547074
Date 02-Sep-65
Author SIDNEY SACHS
Addressee DOWNARD, GEORGE M. & USDA
HAMMER, O.H. & SUNDERLAND, W.W.
Description Letter from Dow to USDA enclosing materials to review to issue registration for Esteron T2 formulation

Exhibit #P0455
PIN # DOW547074
Date 02-Sep-65
Author SIDNEY B SACHE
Addressee DOWNARD, GEORGE M. & HAMMER, O. H.
SUNDERLAND, W. W.
Description letter dated 09-02-65 from sidney B. sache to Mr. George M. Downard on the subject: Initial registration of Est???? t2.

Exhibit #P0457
PIN # 001564-69
Date 14-Sep-65
Author W R UDELL
Addressee TAKE - NITRO, E.F. & DUNLAP, W. P.
STEPHENS, J. A. & SHARP, D. B.
Description REPORT FROM W. R. UNDELL OF AGRICULTURAL RESEARCH DATED 09-14-65.

Exhibit #P0459
PIN # DOW19800-2,4
Date 15-Sep-65
Author DR KEITH C BARRONS
Addressee
Description final contract report covers the laboratory

15381

and greenhouse testing of new chemical structures synthesized as potential herbicides.

Exhibit #P0461

PIN # DOW816919-20
Date 20-Oct-65
Author CONFIDENTIAL DOW
Addressee
Description a dow confidential statment on the ingredients in TORDON 101 mixture (active and inert ingredients and the amount of each).

Exhibit #P0462

PIN # DOW201091
Date 20-Oct-65
Author W R DIXON
Addressee BOSSCHER, H. & HENSKE, J.M.
PLETCHER, D.E.
Description Decision has been made on the Midland Division Trichlorphenol Plant.

Exhibit #P0480

PIN # DOW124400-01
Date 03-Mar-66
Author BILL GILL
Addressee WILTSE, MARK & HANSON, K. Y.
OTIS, C. E. & BRYANT, C. A.
MCCOY, W. J. & RYAN, W. J.
Description Questions asked by Olmstead airforce and answered by dow chemical regarding the quantity of tordon 101 and 2,4,5-t.

Exhibit #P0484

PIN # DOW1120842
Date 14-Apr-66
Author JACK MATHES
Addressee BILLS, WELTON & COLLINS, GEORGE
BARBARINE, AUGUST & BRUCE, JAMES
HENDLEY, M. J. & OTHERS
Description form regarding the quantities of orange.

Exhibit #P0485

PIN # DOW009037
Date 22-Apr-66
Author RICHARD G CARLSON
Addressee MR. HAROLD BOSSCHER
Description Memo is "blanked" in parts of text, but describes the two steps and overall plan being used to produce tetrachlorobenzene. Memo cites exposure to tetrachlorobenzene fumes presently exceed the long-term Industrial Hygiene Standard in exisiting

15382

facility.

Exhibit #P0486

PIN # DOW0201033
Date 22-Apr-66
Author J D VANARSDALE
Addressee R.G. CARLSON
Description Memo to Phenol Section from Production Planning and Control which projects the demand for 2,4-ST acid equivalent from 1966 to 1970 and, the portion attributed to government bid business.

Exhibit #P0487

PIN # DOW765248
Date 22-Apr-66
Author FD AXE
Addressee ROWE, V.K. & HOYLE, H.R.

Description F.D. Axe, Safety Department, Dow Chemical writes Rowe and Hyle of Dow to report that "we have just seen the first new cases of chloracne in the Tordon plant in more than six months." Since "the Pittsburg Tordon Plant (picoline process) will continue to operate to two or three years..we won't let up on the chloracne problem."

Exhibit #P0489

PIN # DOW120843-46
Date 13-May-66
Author R A HICKMAN
Addressee ARNOLD, C. W. & BEUTEL, O. E.
BRYANT, C .A & HANES, J. H.
MAASBERG, A. T. & OTHERS

Description subjects covered in the Report of call tordon/orange herbicide - defoliants, trichloroethylene, anti-freeze, methylene chloride, and dursban.

Exhibit #P0490

PIN # DOW0201026
Date 23-May-66
Author H BOSSCHER
Addressee MAX KEY, DIR OF MFG.
Description Memorandum which is "blanked", cites that new equipment for removal of "?" will be at new location. Memo cites that capacity will be increased and that the removal of "?" will reduce the incidences of chloracne in the Trichlorophenol Plant.

Exhibit #P0491

PIN # DOW816964-65

15383

Date 27-May-66
Author CONFIDENTIAL DOW
Addressee
Description dow confidential letter stating the ingredients in m-3083 brush killer. Composition consists of active and inert ingredients and raw materials.

Exhibit #P0492
PIN # DOW820792-94
Date 31-May-66
Author MR LYNN
Addressee WARD, JUSTUS
Description letter dated 05-31-66 from G. E lynn, director to Mr. Justus Ward, Director on how the chemical tordon is to be used or not used and what not to mix with.

Exhibit #P0494
PIN # D437060-102
Date 22-Jun-66
Author HOWARD H GRAVES
Addressee
Description This report is a summary of the pilot plant data obtained on the Boehringer Process for the caustic hydrolysis of 1,2,4,5-T using meOH as a solvent to produce 2,4,5-T (TCP).

Exhibit #P0497
PIN # DOW1119993
Date 05-Jul-66
Author C E OTIS
Addressee CORBIN, W. L. & BRANAMAN, R. J.
BEUTEL, DR. & YANKA, D. E.
Description amendment to W. J. mccoys' july 5 letter to w. j. ryan on the subject "basis for pricing of orange." the price of orange to the government at \$7.39 per gallon and the reasons why.

Exhibit #P0498
PIN # DOW119541-47
Date 11-Jul-66
Author ARMY ARMY
Addressee
Description military specification on herbicide; n-butyl 2,4,5-trichlorophenoxyacetate. Standard sections regarding are included: Scope, Applicable documents, etc. note: precaution - not for domestic use.

Exhibit #P0500

15304

PIN # DOW00013078
Date 13-Jul-66
Author J S JR CORT
Addressee A.B. TILLMAN
Description Appropriation request is for funds for expansion of the 2,4-D Acid facility, modification of the 2,4,5-T Acid facility, purification of TCP and additional warehousing facilities. Memo cites that TCP purification is designed to eliminate a major health problem at Newark and potential health problems with customers.

Exhibit #P0504

PIN # DOW201024
Date 01-Aug-66
Author DOW BD OF DIRECTORS
Addressee BD OF DIRECTORS
Description Meeting addresses Tetracholobenzene Expansion on a new building. This new facility is needed to provide for sales primarily of 2,4,5-t and of silvex,ronnel and Dowicides.

Exhibit #P0505

PIN # DOW816681
Date 06-Aug-66
Author O H HAMMER
Addressee WOLF, M.A. & LYNN, G. E.

Description technical information on tordon requested by ralph C wands. supplied on governmental agencies on a semi-confidential basis and not for reproduction, publication or general distribution.

Exhibit #P0506

PIN # DOW19997-8
Date 11-Aug-66
Author C E OTIS
Addressee CORBIN, W. L. & GOWELL, J. H.
MCCOY, W. J. & WILTSE, M. G.

Description states the military needs for orange in gallons for 1966 -1967 by the month. also states what orange is composed of : 4 lbs. a/e of 2,4,5-t and 4 lbs. a/e of 2,4-d per gallon.

Exhibit #P0513

PIN # DOW119483-84
Date 08-Sep-66
Author SUPPLY CENTER DEFENSE GENERAL
Addressee

15385

Description order form, contract #: dsa-400-67-c-1820
for a grand total shipped 377123 gallons.

Exhibit #P0515

PIN # DOW201022
Date 26-Sep-66
Author CHESTER OTIS
Addressee DIXON, W.R. & BOSSCHER, H.
HARDING, K. & ARMSTRONG, C. C.
PLETCHER, D. E. & OTHERS

Description The Plant Science business feels it is
necessary to defer the Tetrachlorobenzene
expansion (new building), auth. no.
MP-32383A.

Exhibit #P0533

PIN # DOW770187-95
Date 04-Nov-66
Author A WIDIGER
Addressee JOHNSON, A. & DUGAN, G.F.
COULTER, K.E. & GOERGEN, G.G.
LOUCK, A. & OTHERS

Description Widiger, Johnson, and Dugan of Dow report
on new process developed to prepare 245TCP
from Trichlorobenzene; claims that although
the process is more complicated than the
present Dow process, it is continuous
oriented and of simpler design which
"should require less capital, less
maintenance labor, and less operating
labor."

Exhibit #P0535

PIN # DOW0400-406
Date 07-Nov-66
Author PROJECT ARMY MU
Addressee PN 6840 A040 & MILITARY SPECS

Description Supercedes spec of 19-July-63. Gives
military specs for ordering one type of
herbicide consisting of normal-butyl
2,4,5-Trichlorophenoxyacetate molecular
weight 311.60. Specs include standards
requirements (composition, appearance,
etc.), Quality Assurance Provisions,
Packaging, Testing, Marking, etc. Gov't
reserved inspection rights but vendor can
use any acceptable lab. Marking specs
contain provision for marking in accordance
with MIL-STD-129 and in compliance with the
Federal

Exhibit #P0547

PIN # DOW0035-53

15386

Date 01-Dec-66
Author GEORGE F COLLINS
Addressee DOW CHEMICAL CO.
Description Contract issued by Directorate for Procurement and Production - Defense General Supply Center to Dow Chemical at the Abbott Road Bldg. This is a confirming telegraphic offer dated 11/25/66 and acceptance dated 12/01/66. Order is for 6840 NSN, Herbicide, Butyl Esters: MIPR No. MA-6-16445. Section B relates product specifications.

Exhibit #P0548
PIN # DOW119485
Date 01-Dec-66
Author NONE DEFENSE SUPPLY
Addressee DOW GENERAL
Description Reference to contract DSA-400-67-c-4029/PC409 Total amount of contract cited as 128,000 gal. with a 5% increase 0% decrease variation clause. Columns relate to quantity expected and quantity shipped from 2/13/67 to 3/2/67.

Exhibit #P0553
PIN # DOW88930-41
Date 09-Dec-66
Author GEORGE LYNN
Addressee HAMMER, O.H. & TOXIC LAB
BIO-PRODUCTS CENTER
Description Reports after requests for screening or application testing re: a Dow herbicide formula - includes toxicological evaluation and results of animal testing.

Exhibit #P0554
PIN # DOW1120855
Date 09-Dec-66
Author R A HICKMAN
Addressee WHITESELL, RUSS & BEUTEL, A. P.
CORBIN, W. L. & DIXON, W. R.
GOWELL, J. H. & OTHERS
Description Bdsa inquiry - tetrachlorobenzene capacity. states in view of the in-company shortage of tetrachlorobenzene, they were not in a position to supply the material to other producers.

Exhibit #P0555
PIN # DOW1120224-6
Date 01-Jan-67
Author MARK WILTSE
Addressee BRYANT, CLYDE & COWELL, JIM

15357

Description a chronological report based on information from mark wiltse, clyde bryant and jim cowell. for the period of early 1965 thru 1967 when the texas plant came on stream and the price of tordon was reduced to 6.4443.

Exhibit #P0560

PIN # DOW1120862
Date 14-Jan-67
Author SUPPLY CENTER DEFENSE GENERAL
Addressee BENDALL, T. L. & BEUTEL, A. P.
BYRD, B. C. & CORBIN, W. L.
GOWELL, J. H. & 10 OTHERS

Description requirements from the field still call for tremendous quantities of orange to be shipped by 3-31.

Exhibit #P0562

PIN # DOW751877
Date 17-Jan-67
Author L G SILVERSTEIN
Addressee GILMAN, DR. HENRY & IOWA STATE UNIV.

Description Silverstein says tetrabromodioxin sample about as potent as TCDD in rabbits.

Exhibit #P0564

PIN # DOW120078
Date 24-Jan-67
Author H D DOAN
Addressee J. M. LYLE

Description Memo stresses the safe peace time use of Tordon 101 as a brush killer. Memo further expounds upon virtues of Dow with regard to development and use of its herbicides. The ultimate debate is over price.

Exhibit #P0565

PIN # DOW120836
Date 27-Jan-67
Author D PLETCHER
Addressee DIXON, W.R. & HICKMAN, R.A.
STACHLING, E & MCCOY, W.

Description Because of certain inefficiencies and because of certain health problems which require extra cost for employee protection, we hope to replace our present TCB facility with on or two years. Major Concerns are: Strata not suited for wells for wasted disposal, Alternate will be expensive in dollars and time. Little or no processing

15388

equipment.

Exhibit #P0566

PIN # DOW500-03
Date 27-Jan-67
Author D E PLETCHER
Addressee DIXON, W.R. & HICKMAN, R.A
STROHLING, E.C. & MCCOY, W.S.
DELINE, D. & OTHERS
Description Because of certain inefficiencies and because of certain health problems which require extra cost for employee protection, we hope to replace our present TCB facility with 1 to 2 years.

Exhibit #P0569

PIN # DOW120840-41
Date 30-Jan-67
Author R A HICKMAN
Addressee BEUTEL, A.P. & CORBIN, W.L.
DIXON, W.R. & GOWELL, J.H.
HICKMAN, R.A. & OTHERS
Description We advised Gen. Hebbeler that our people had called from Muscle Shoals and advised that it would be very expensive to build the plant and that we were developing an interim report based on total cost of building a plant to produce "orange" starting with the production of tetrachlorobenzene.

Exhibit #P0570

PIN # DOW0069-87
Date 31-Jan-67
Author GEORGE F COLLINS
Addressee DOW CHEMICAL CO
Description CONTRACT FOR 6840 NSN HERBICIDE, BUTYL ESTERS MIPR NO MA 6-16445 PRI 02.
CONTRACT CALLS FOR 2,4-D AND 2,4,5-T IN A 50-50 BLEND CONFORMING TO MIL-H-51147 (MU) OF 19-JUL-63 EXCEPT ACID PURITY SHALL BE 99.0% MINIMUM BY WEIGHT ACID EQUIVALENT SHALL NOT BE LESS THAN 79.9% NOR MORE THAN 80.0%; THE FREE ACID SHALL NOT BE MORE THAN 0.5% 50% OF N-BUTYL 2,4,5-T CONFORMING TO MIL-H-51148 (MU) DATED 19-JUL-63, EXCEPT ACID PURITY SHALL BE 98.0% MINIMUM BY

Exhibit #P0571

PIN # DOW119200
Date 02-Feb-67
Author R H BOUNDY
Addressee DOW CHEMICAL
Description Supplement addresses the resolution for

15389

supplemental costs potentially due Dow.

Exhibit #P0572

PIN # DOW751971
Date 03-Feb-67
Author W J MCCOY
Addressee CORBIN, W.L. & PLETCHER, D. E.
GOWELL, J.H.
Description Call indicating that he believed they have a severe chloracne problems with some of their employees.

Exhibit #P0573

PIN # DOW751874
Date 03-Feb-67
Author W J MCCOY
Addressee ROWE, V.K. & CORBIN, W.L.
PLETCHER, D.D. & GOWELL, J.H.
Description McCoy of Dow advises of phone call from Thompson Chemical indicating severe chloracne problem "we do not feel friendly towards this competitor . . . but believe that any advice would be in order."

Exhibit #P0576

PIN # JUS 215
Date 09-Feb-67
Author A P BEUTEL
Addressee TRAUB, JOHN L. & CHIEF, CHEM.PROC.
ARMY, EDGEWOOD
Description Beutel advises Army Dow management reviewing whether it will participate in army plan to produce Orange at Wilson Dam, Alabama. Report to come.

Exhibit #P0577

PIN # DOW0201020
Date 13-Feb-67
Author D E PLETCHER
Addressee E.B. BARNES & HAROLD BOSSCHER
E.C. STAEHLING & G.G. GOERGEN
W.R. DIXON & OTHERS
Description Memo deals with Dow's decision that it is still more cost effective to "make" rather than "buy" Tetrachlorobenzene. Also mentioned is the fact that the new facility is necessary to correct environmental health problems.

Exhibit #P0578

PIN # DOW201020-21
Date 13-Feb-67
Author D E PLETCHER

15390

Addressee BOSSCHER HAROLD & STAEHLING, E
GOERGEN, G & DIXON, W
HENSKE, J & GILL, W

Description We are asking that we proceed at once with Phase IV engineering on this project. While this is a logical steep to meet our projected commercial requirements, it is also a first step if the situation is realized where DOW moves to provide very substantially increased quantities of Orange for the Defense Department.

Exhibit #P0579

PIN # DOW751872
Date 13-Feb-67
Author V K ROWE
Addressee CORBIN, W.L. & PLETCHER, D.E.
COWELL, J.H. & MCCOY, W.J.

Description Dow received a call from Thompson Chemical Co. stating that some men thought they had rec'd chloracne. They wondered if Dow could advise them to medical practice. Under certain circumstances the caustic insloulbe oils could contain considerable amounts of a very highly toxic substance which was identified as 2,3,7,8-T.

Exhibit #P0580

PIN # DOW751872
Date 15-Feb-67
Author V K ROWE
Addressee DIXON, WILLIAM B & CORBIN, W.L.
PLETCHER, D.E. & GOWELL, J.H.
MCCOY, W.J. & HOLDER, B.B., M.D.

Description V.K. Rowe relates developments regarding Thompson Chemical Company request for information concerning Thompson's chloracne problem. Rowe advised existence TCDD "extremely toxic systemically . . . also . . . potent chloracnegen; extreme precautions to clean up equipment "the information on the physiological activity was perhaps even less than . . . given . . . other producers of TCP over a year ago. . . . because . . . apparent Buckley had little understanding of . . . problem."

Exhibit #P0584

PIN # DOW816875
Date 20-Feb-67
Author G F LYNN
Addressee W. R. DIXON & D. E. PLETCHER
W. L. CORBIN & J. HL COWELL

15391

Description J. N. O'CONNOR & OTHERS
Dow is trying to get restrictions lifted from the label of Tordon 101. Dr. Hays is reluctant to enter into a controversy with potential legal implications. The procedure of appeal to the NAS was pursued.

Exhibit #P0588

PIN # DOW816873
Date 24-Feb-67
Author GEORGE LYNN
Addressee DIXON, W.R. & PLETCHER, D.E.
CORBIN, W.L. & O'CONNOR, J.N.
WILTSE, M.G. & OTHERS

Description I called Dr. Hays concerning the Tordon 101 label. He has discussed the matter in detail with the USDA attorney, Mr. Robertson, and between them, do not see any reason to do anything concerning either the TORDON 101 Label or the Barovert label. Unless we re-open the matter I gather the USDA will consider it closed.

Exhibit #P0589

PIN # JUS215-524-6
Date 24-Feb-67
Author A P BEUTEL
Addressee TRAUB, JOHN, ARMY & EDGEWOOD

Description Dow reports its attitude to army proposal to produce orange at phosphate development works, Wilson Dam, Ala., cites large capital required, time for engineering & construction, manpower problems, and concludes the proposal does not appear to have the potential to meet the urgency of the U.S. Gov't requirements.

Exhibit #P0591

PIN # DOW088969
Date 27-Feb-67
Author K J OLSON
Addressee F. OYEN & H. R. HOYLE
DOW EMPLOYEES

Description Data Sheet of Precautions cites possible skin disorders for Tordon 105 Mixture; 2,4,5-T Severe eye irritation possible; safety glasses required.

Exhibit #P0594

PIN # DOW120107
Date 07-Mar-67
Author R A HICKMAN

15382

Addressee MR. WOLTON BILLS
Description Dow is trying to get committment of money or guarantees for building of new facility to supply government with Tordon 101 or Super Orange

Exhibit #P0597

PIN # DOW091173-76
Date 17-Mar-67
Author KEN OLSON
Addressee F.OYER & R.H. BOUNDY
B. HOLDER, MD & D. KILIAN, MD
R.D. MOSS & OTHERS
Description A sample mix of Tordon 105 composed of 21.6% 2,4,5-T, and 5.4% of 4-amino 3,5,6 tri. acid and 44.1% water proved to be only slightly irritating to intact or freshly abraded skin.

Exhibit #P0598

PIN # 120679
Date 21-Mar-67
Author R HICKMAN
Addressee CLYDE BRYANT & CHET OTIS
BILL RYAN
Description Letter states that The United States Government is now Dow Chemicals Number Two Customer through the Bioproducts Department and the Tordon area.

Exhibit #P0600

PIN # DOW119501
Date 24-Mar-67
Author UNKNOWN UNKNOWN
Addressee DOW & HICKMAN
Description Letter directs Dow to accelerate delivery of existing contract for the defoliant "Orange" at a monthly rate of 93,000 gallons 4/3/67. Also directed to give monthly reports on production, shipments and inventory.

Exhibit #P0602

PIN # DOW120720-22
Date 29-Mar-67
Author R A HICKMAN
Addressee HOSLEY R. KOETER
Description Dow states experimental deliveries made to the government since 1962 and that selected type orange and tordon 101 have been supplied since fall of 1965. Dow is commenting on differential pricing and ability to provide herbicides to the

15308

government in the future based on financial
committment by government.

Exhibit #P0603

PIN # 120671,720-2
Date 29-Mar-67
Author R A HICKMAN
Addressee BILLS, WELTON & KOSTER, WOALEY R

Description R. A. hickman letter of 3-30-67 to Mr.
Welton Bills , Defense General Supply
Center

Exhibit #P0605

PIN # DOW120671
Date 30-Mar-67
Author R A HICKMAN
Addressee MR. WELTON BILLS

Description Confidential report attached (not with
exhibit) was prepared for BDSA outlining
Dow's ability to supply defoliation
chemicals. They further request contracts
for Tordon 101 and Orange ASAP.

Exhibit #P0609

PIN # DOW120432-58
Date 17-Apr-67
Author GEORGE F COLLINS
Addressee DSASR

Description an award/contract between dow chemical
company and directorate of procurement &
production *Attn:pc433 it states what the
product herbicide, butyl esters should
consist of, how to be shipped and supply
warranty.

Exhibit #P0610

PIN # DOW119947-52
Date 17-Apr-67
Author W R NUMMY
Addressee PLETCHER, D. E. & BOSSCHER, H.
TIMM, W. C. & COULTER, K.E.
TRACEY, W. J. & OTHERS

Description Fredricks' Letter dated March 31,1967
solicited reasonable solutions to the
problem of supplying all or any part of the
estimated additonal requir- ment of
8,000,000 gallons of "Orange" per year. It
further stated that more detailed proposals
would be requested for those solutions
considered to be most feasible.

Exhibit #P0613

PIN # DOW1120723

15394

Date 21-Apr-67
Author R A HICKMAN
Addressee HEATH, OTIS & GILL, W.
HANES, J H & NUMMY, W R
PATTERSON, R. M. & OTHERS
Description letter dated 04-21-67 from R. A. hickman to
Otis heath regarding the conversation with
jane lewis confirming no relaxation in
waivers of import duty on 2,4,5-t and
2,4-d. if imported and duty was paid, it
may be sold in civilian market and not
subject to directive issued by BDSA
recently.

Exhibit #P0614

PIN # DOW120724,26
Date 25-Apr-67
Author R A HICKMAN
Addressee BALLMAN, DONALD K. & BEUTEL, A. P.
EVERSON, J. W. & WILLIAMS, G. J.
COFFEY, W. H. & OTHERS

Description report states a contract of 167,000 gallons
a month from august 1967 thru march 1969,
the government asked this be kept
confidential because of the size of the
contract, other suppliers were also
bidding.

Exhibit #P0622

PIN # DOW650139-45
Date 22-May-67
Author BARRY BYRD
Addressee DOW SALES & JOHN SPALDI

Description Sales release cites that Tordon 155 mixture
should never be mixed with water and should
not be allowed to contaminate soil used to
grow desirable plants such as vegetables,
etc. Do not store near food, seeds, etc.
Avoid breathing mist, harmful if swallowed,
may cause irritation

Exhibit #P0623

PIN # DOW650139
Date 22-May-67
Author BARRY BYRD
Addressee

Description

Exhibit #P0626

PIN # DOW201049-50
Date 31-May-67
Author RICHARD G CARLSON
Addressee HAROLD BOSSCHER

15395

Description Blanked out memo relates to step one of 2 step expansion plan. New 819 building is to be constructed. Existing 636 building is cited as being congested and in violation of long term Industrial Hygiene Standard.

Exhibit #P0629

PIN # DOW201044
Date 08-Jun-67
Author HAROLD BOSSCHER
Addressee DR. E. B. BARNES
Description Memo cites 636 building is extremely congested and resulting in problems in safety, maintenance and operation. They hope to reduce chloracne problem.

Exhibit #P0633

PIN # 0000000
Date 28-Jun-67
Author GEORGE F COLLINS
Addressee THOMPSON-HAYWARD & CHEMICAL CO.
Description JUNE 1967 CONTRACT TO PRODUCE AGENT ORANGE.

Exhibit #P0634

PIN # DOW120735
Date 28-Jun-67
Author R A HICKMAN
Addressee BALLMAN, DONALD K & BEUTEL, A. P.
EVERSON, J. W. & WILLIAMS, G. J.
COFFEY, W. H. & OTHERS
Description states a shortage due to increased military use of orange and tordon 101, the shipments of other weed killing agents increased. a new plant to be built in two untis in weldon springs, missouri for production of 2,4-d and 2,4,5-t. purchase of this product will be transferred from DSA to army, and coded as a weapon rather than a herbicide.

Exhibit #P0636

PIN # DOW0426-36
Date 30-Jun-67
Author ARMY ARMY
Addressee DOW
Description Supercedes MIL-9-51239(MU) 30-Dec-65. Mostly illegible, but contains standard paragraphs regarding inspection, labeling, precautions, etc.

Exhibit #P0647

PIN # DOW1120680

15396

Date 01-Aug-67
Author R A HICKMAN
Addressee BALLMAN, DONALD K. & BEUTEL, A. P.
EVERSON, J. W. & WILLIAMS, G. J.
COFFEY, W. H. & OTHERS
Description military increases consumption of tordon
and orange . 2,4-d and 2,4,5-t forced into
short supply. other weed killers are being
bought by government agencies (Esteron 99
Concentrate).

Exhibit #P0654

PIN # DOW1120687
Date 30-Aug-67
Author R A HICKMAN
Addressee BALLMAN, DONALD K. & BEUTEL, A. P.
EVERSON, J.W. & WILLIAMS, G. J.
COFFEY, W. H. & OTHERS
Description due to continued shortage of 2,4-d and
2,4,5-t through shipments of orange is
accelerating shipment of esterone 99, sodium
tca, and other herbicides.

Exhibit #P0655

PIN # DOW979868
Date 01-Sep-67
Author R W WRIGHT
Addressee BARNES, E. B. & BEUTEL, A. P.
BOSSCHER, H. & COFFEY, W. H.
HICKMAN, R. & OTHERS
Description

Exhibit #P0656

PIN # DOW979868-74
Date 01-Sep-67
Author R A HICKMAN
Addressee BEUTEL, A.P. & NUMMY, W.R.
PLETCHER, D.E. & MANYOTHER DOW

Description Hickman prepared lengthy call report
describing conversations with various
government representatives concerning the
policies and needs of the Gov't for Orange;
report cites many of these conversations.

Exhibit #P0658

PIN # DOWH15454-56
Date 05-Sep-67
Author M A TAVES
Addressee REGAN J M & RANO P J
TURK E DR. & GIVENS K T
WILDER H K & OTHERS

Description On September 1, 1967, Bill Clark and Regan

15387

visited the Defense Center to discuss the procedure used to analyze "orange" herbicide mixture.

Exhibit #P0659

PIN # H15454-56
Date 05-Sep-67
Author M A TAVES
Addressee WILDER, H. E. & SIDWELL, DR. A. E.
CLARK, W. H. & RENO, P. J.
TURK, DR. E. & SCOTT, DR. R. B.

Description Herculesletter from M. A. Taves to Mr. J. M. Eagan, dated 09-05-67.

Exhibit #P0661

PIN # DOW979869
Date 06-Sep-67
Author W J TACEY
Addressee C. BAILEY & R. CARLSON
F. CHASE & J. COPPAGE
D. DELINE & OTHERS

Description The accompanying chart list the Unit Ratios for use in the new 8.1 MM gallon Orange Plant Study. The Ratios list are, in general, the 1967 standards.

Exhibit #P0662

PIN # DOW1120692-3
Date 07-Sep-67
Author R A HICKMAN
Addressee GOWELL, J. H. & BEUTEL, A. P.
KEIL, R. M. & NUMMY, W. R.
ROBERTSON, R. W. & OTHERS

Description when first discussed tordon there were only laboratory results and mini-plant production. dow states that sales to the civilian market would be more profitable for them than to the government and proven an effective weapon in vietnam. this is the only other effective weapon for its specific use except orange.

15398

Exhibit #P0667

PIN # DOW817294-99
Date 13-Sep-67
Author M LONG
Addressee

Description points to consider in connection with use of tordon - 2,4-d in rangeland and pasture are what it does to the grass, cattle and crops.

Exhibit #P0670

PIN # DOW3444
Date 26-Sep-67
Author J M ILLEGIBLE
Addressee DOW LAB

Description Report of laboratory analysis on t-acid from drier. Concentration of dioxin of t.c.p. used to produce t-acid=1.9 to get 1.5 in t-acid.

Exhibit #P0678

PIN # DOW1124975
Date 11-Oct-67
Author L C WHITE
Addressee SCULATI, J. J. & HAWLEY, H. M.

Description dow chemical co. raw material specification form for 2,4,5-t. it states test items, limits and test methods.

Exhibit #P0684

PIN # DOW1125124
Date 24-Oct-67
Author V K ROWE
Addressee SNYDER, FRED H

Description this is in response to a letter of 10-18-67 regarding acnegens and laboratory method for evaluatin same.

15399

Exhibit #P0686

PIN # DOW119486-7
Date 30-Oct-67
Author SUPPLY CENTER DEFENSE GENERAL
Addressee
Description order form, contract # dsa-400-67-c-5534 /pc440, total amount of contract - 170,000 gallons with a 5% increase 0% decrease variation clause. also contract # dsa-400-67-c-8032.

Exhibit #P0691

PIN # DOW852482-3
Date 08-Nov-67
Author C L DUNN
Addressee MEMBERS NATIONAL & AGRICULTURAL CHEMICALS ASSOC.
Description report states tolerances of phenoxy herbicides on range and pasture grasses at high residue levels shortly after application.

Exhibit #P0694

PIN # DOW1120713
Date 09-Nov-67
Author R A HICKMAN
Addressee HEATH, OTIS & GILL, W
COWELL, J. M. & RYAN, W. J.
YANKS, D. E.
Description the conversation entailed questions like: it tc3 imported, could it be converted to 2,4,5-t and sold to customers other than government. the directive that had been issued against dow and industry called all 2,4,5-t capacity and production be made available to government.

Exhibit #P0695

PIN # DOW1120714-5
Date 09-Nov-67
Author R A HICKMAN
Addressee GOWELL, J. H & GILL, W.
HEATH, O & RYAN, W. J.
YANKA, D. E.
Description memo states the requirements for 1968 to be

15400

6? gallons of herbicide. Mr. Minarik stated the figures for 1969 in the area of 11-15m gallons.

Exhibit #P0697

PIN # DOW852481
Date 27-Nov-67
Author C L DUNN
Addressee MEMBERS NATIONAL & AGRICULTURAL
CHEMICALS ASSOC. & ?, J. A.

Description the conference dealt with the farmers and the product phenoxy herbicides.

Exhibit #P0700

PIN # DOW1120717
Date 29-Nov-67
Author R A HICKMAN
Addressee BALLMAN, DONALD K
Description regarding a bid for supplying a quantity of tetrachlorobenzene to be used in the production of orange at weldon springs.

Exhibit #P0701

PIN # DOW817053
Date 02-Dec-67
Author UNKNOWN UNKNOWN
Addressee NANCY
Description note to nancy regarding tordon 155 mixture and the label for this product, stating something about a new ingredient.

Exhibit #P0706

PIN # DOW1112041-2
Date 22-Dec-67
Author R A HICKMAN
Addressee MCCOY, V. J. & HANSON, K. Y.

Description reason for call was to review the oct. report filed by otis heath of dow. There was an error in the report which caused BDSA to make an incorrect analysis of the

15401

ability to produce trichlorophenol and
2,4,5-t.

Exhibit #P0707

PIN # DOW1120743-5
Date 27-Dec-67
Author R A HICKMAN
Addressee BALLMAN, DONALD K & BEUTEL, A.P.
EVERSON, J. W. & QUIGLEY, F. K.
COFFEY, H. H. & OTHERS

Description a review states, tordon and orange requirements for fiscal year 1969 the period 4/1/68 thru 3/31/69. a team went to edgewood arsonal, and dow's management decided not to bid the 30,000,000 lbs. tetrachlorobenzene plant and bid on the 10,000,000 lbs. plant whose end product to be used by the government operated plant at weldon springs, missouri, in production of orange.

Exhibit #P0711

PIN # DOW119555-6
Date 31-Dec-67
Author COMPANY DOW CHEMICAL
Addressee NONE

Description analysys of competitive bidding on orange delivered for the year ended 12-31-67 contains: contract No., gallons delivered, dow's unit price and amount, lowest non-dow bid unit price and amount, and average non-dow high and low bid unit price and amount. the comparison with competitive prices received on solicitation of orange bid proposals (furnished by eastern regional renegotiation board) contains: contract date nad number, bids received per gallon for dow and all competitors by number.

Exhibit #P0712

PIN # DOW893805-8
Date 01-Jan-68
Author C E MINARIK
Addressee

15402

Description the article states how the herbicides were used in vietnam and what some effects were. it also contains when and where some of the spraying took place.

Exhibit #P0717

PIN # DOW817423
Date 08-Jan-68
Author GEORGE E LYNN
Addressee NUMMY, W.R. & BARRONS, K.C.
HAMMER, O.H. & SUNDERLAND, WW
WILTSE, M.G. & LENG, M.L.

Description Lynn writes report to Nummy and others at Dow, of Conference with Pesticides Regulation Division, USDA, of 1-4-68; reference the Division's position that Tordon does not appear useful for the purposes for which tolerances were being sought.

Exhibit #P0720

PIN # DOW820921-36
Date 11-Jan-68
Author O H HAMMER
Addressee ALFORD, HAROLD G. & USDA
LICHY, C.T. & SUNDERLAND, W.W.
TALCOTT, A.T.

Description Hammer of the Registration Section of Dow encloses a report of the Toxicological Properties and Industrial Handling Hazards of Tordon 144 mixture Herbicide

Exhibit #P0728

PIN # DOW821106-7
Date 26-Jan-68
Author HAROLD ALFORD
Addressee MCINTYRE, H.H. & DOW CHEMICAL
LABELING & REG'N & MIDLAND, MI.

Description Alford, of USDA writes McIntyre of Dow Labeling and Product Registration Section that the labelling submitted previously was not acceptable and gives form letter advising Dow of additional materials

15403

required.

Exhibit #P0729

PIN # DOW120759-60
Date 26-Jan-68
Author R A HICKMAN
Addressee BEUTEL, A.P. & DOUGLAS, BURKE
HANSON, K.Y. & MCCOY, W.J.
RYAN, W.J. & YANKA, D.E.

Description Hickman, U.S. Gov't Marketing Mgr. of Dow, advises others at Dow as to details of situation regarding Dow's bids to supply orange and efforts to supply Tordon.

Exhibit #P0733

PIN # DOW120761-3
Date 31-Jan-68
Author R A HICKMAN
Addressee DOW EMPLOYEES
Description Example of monthly report written to numerous Dow employees by the Gov't Marketing Mgr., and also refers to efforts of Dow to sell Tordon to the Gov't for use in S.E. Asia

Exhibit #P0734

PIN # DOW120766
Date 02-Feb-68
Author R A HICKMAN
Addressee BEUTEL, A.P. & DOUGLAS, BURKE
HANSON, K.Y. & MCCOY, W.J.
RYAN, W.J. & YANKA, D.E.

Description Hickman reports that he spoke with Miss Jane Lewis and Mr. Carl Rolle separately and they advised as to herbicide requirements and fact of gov't disappointment that Dow did not bid on TCP plant of the Edgewood Arsenal. "we were not too concerned about keeping other chemical companies honest"

15404

Exhibit #P0737

PIN # DOW816698
Date 09-Feb-68
Author GEORGE LYNN
Addressee DRAFT & DISTRIBUTORS
TORDON

Description Draft of "Important Notice" to be sent to distributors advising that the labeling of Tordon and Borolin has been revised to delete the use on cropland

Exhibit #P0738

PIN # DOW120769
Date 16-Feb-68
Author R A HICKMAN
Addressee BEUTEL, A.P. & GOWELL, J.
MCCOY, W.J. & RIDNER, J.H.
YANKA, D.E. & DOW INTERNAL

Description Hickman, Gov't Marketing Mgr. of Dow writes memo of telephone conf. with Jane Lewis of government advising that Hoffman-Taft in position to make Orange; Other producers had their equipment ordered.

Exhibit #P0740

PIN # DOW120770-1
Date 21-Feb-68
Author R A HICKMAN
Addressee BEUTEL, A.P. & YANKA, D.E.
BYRD, B.C. & GOWELL, J.H.
NUMMY, W.R. & PAC

Description Hickman writes a summary of a strategy meeting where it was agreed to try to reconfirm strategy for future herbicide production by Dow.

Exhibit #P0744

PIN # DOW817051
Date 26-Feb-68
Author DOW UNKNOWN
Addressee UNKNOWN & DOW EMPLOYEES

15405

Description Dow Confidential description of composition of active ingredients, inerts and acid equivalence of Tordon 155.

Exhibit #P0747

PIN # DOW120772-4
Date 27-Feb-68
Author R A HICKMAN
Addressee BEUTEL, A.P. & BALLMAN, D.K.
EVERSON, J.W. & QUIGLEY, F.K.
SALES DEPARTMENT

Description Hickman writes monthly report of sales activities to Department Personnel and Supervisor "strategies have been developed for pushing Super-Orange as a long range replacement for both Tordon and Orange" -- Edgewood requests the Dow bid again on TCB plant "for all practical purposes, the door closed for future opportunities to bid on this plant."

Exhibit #P0751

PIN # DOW816696-7
Date 04-Mar-68
Author G E LYNN
Addressee NUMMY, W.R. & JOHNSON, J.E.
WILTSE, M.G. & GOWELL, J.H.
BARRONS, K.C. & OTHERS AT DOW

Description Lynn reports his telephone conference with Harold Alfred, U.S.D.A., re Tordon registration difficulties

Exhibit #P0752

PIN # DOW120775
Date 04-Mar-68
Author R A HICKMAN
Addressee BARRONS, K.C. & GOWEL, J.H.

Description Hickman reports Jane Lewis interested in Gowel's comments in view of many criticisms directed at use of herbicides in Vietnam.

15406

Exhibit #P0755

PIN # DOW12779
Date 19-Mar-68
Author R A HICKMAN
Addressee BEUTEL, A.P. & GOWEL, J.H.
MCCOY, W.H. & YANKA, D.E.
OTHERS AT DOW

Description The Hickman reports that Miss Lewis discussed slowdown on shipments of Orange to the Government and fact that Government would let industry police itself in sale of 2,4,5-T to existing customers to make sure of no black market.

Exhibit #P0756

PIN # DOW120776-78
Date 22-Mar-68
Author R A HICKMAN
Addressee GOWEL, J.H. & WILTSE, M.G.
OTHERS AT DOW

Description Hickman discusses strategy meeting re Super-Orange and fulfillment of Tordon contract and notes concerns about attitude at Fort Detrick involving Army's indicated need for additional data; shows Dow actively pursuing government market.

Exhibit #P0757

PIN # DOW120781
Date 28-Mar-68
Author R A HICKMAN
Addressee BEUTEL, A.P. & GOWEL, J.H.
MCCOY, W.J. & OTHERS AT DOW

Description Hickman reports discussions at St. Louis meeting between he and five others (non-Dow); further references Thompson Chemical and Sterans and Roger.

Exhibit #P0758

PIN # DOW538350-1
Date 08-Apr-68
Author DREW M BAKER
Addressee DUNN, C.L. & CHAIRMAN NACA

15407

INDUSTRY TASK FORCE & USDA PEST. DIV.

Description Mr. Baker of HEW describes the residedued data HEW wants submitted in order to support industry requests for residue tolerances of 2,4,5-T.

Exhibit #P0770

PIN # DOW120795-6
Date 14-May-68
Author R A HICKMAN
Addressee CORBIN, W.L. & GILL, W.M.
GOWEL, J.H. & OTHERS AT DOW

Description Hickman describes telephone conversations with Jane Lewis, BBSA, and George Collins, DGSC, re supply of TCP to Woodbury Chemical "we might . . . help her . . . if we could supply TCP to Woodbury * * * this . . . might hurt our obtaining as large a portion of future Orange contracts as we would like."

Exhibit #P0773

PIN # DOW720805-31
Date 01-Jun-68
Author J L ENGER
Addressee DOW PERSONNEL & DOW SUB-PERSONNEL

Description A report of Dow marketing research regarding pesticide exports during 1967 re 2,4-D and 2,4,5-T.

Exhibit #P0775

PIN # DOW120804-5
Date 07-Jun-68
Author R A HICKMAN
Addressee DOW INTERNAL
Description Hickman reports "we have kept very close to Miss Lewis as a source of factual . . . completely accurate information." Discusses quantity of herbicide to be sprayed in fiscal 1969 developed from pilot information; also discusses lack off Tordon acceptance.

15408

Exhibit #P0779

PIN # DOW014082-3
Date 17-Jun-68
Author E MONROE
Addressee GREENE, L. M.
Description letter states the analytical method. along with the letter is a routine sheet for the release of technical information regarding the determination of 2,3,7,8-tetrachlorodibenzo-p-dioxin in 2,4,5- trichlorophenoxyacetic acid by gas-liquid chromatography.

Exhibit #P0780

PIN # DOW120808-9
Date 21-Jun-68
Author R A HICKMAN
Addressee INTERNAL DOW
Description Hickman summarizes quality control and shipping problems in calls made to various government employees and inspectors to solve the same "planes flew Sorties like hell all last month."

Exhibit #P0782

PIN # DOW811635-48
Date 28-Jun-68
Author O H HAMMER
Addressee MCCOLLISTER, D.D. & LYNN, G.E.
BLAIR, E.H. & WILTSE, M.
LENG, M.L. & OTHERS
Description Hammer responds to McCollister request to pull together his thoughts on "what seems to be needed prior to . . . any further requests to USDA for registration of use of Tordon . . . on crop land.

Exhibit #P0786

PIN # DOW120816
Date 17-Jul-68

15409

Author A P BEUTEL
Addressee ASST. CHIEF OF STAFF & FORCE DEVELOPMENT
ARMY & PENTAGON, WASH. D.C.
GENERAL HEBBELER
Description Beutel, Vice-President and Director of
Government affairs at Dow writes Brig. Gen.
J.A. Hebbeler attempting to extol the
merits of Super-Orange.

Exhibit #P0787

PIN # 9369
Date 23-Jul-68
Author NONE NONE
Addressee
Description Excerpts of the Twenty-First Meeting of
Research Laboratories Review Point I
Committee, dated July 23, 1968.

Exhibit #P0788

PIN # DOW120829
Date 31-Jul-68
Author R A HICKMAN
Addressee BEUTEL, A.P. & BALLMAN, D.K.
ECCLES, R.P. & QUIGLEY, F.K.

Description Monthly report for July, 1968, re
Government

Exhibit #P0792

PIN # DOW580567-85
Date 22-Aug-68
Author UNKNOWN UNKNOWN
Addressee DOW
Description Technology Review on products-Dowanol
Chloroacetate, Butuil Chloracetate,
Iso-Octyl Chloroacetate. Uses - 2,4,D Weed
Killers and 2,4,5 T Weed Killers

Exhibit #P0793

PIN # DOW120818-22
Date 28-Aug-68
Author R A HICKMAN

15410

Addressee BEUTEL, A.P. & BALLMAN, D.K.
ECCLES, R.P. & QUIGLEY, F.K.

Description Hickman's report includes reference to presentation made on Super-Orange and requirements for Tordon 101 together with bulk movement of defoliants and possible storage and mixing facilities in Vietnam but states if supply depot damaged by bomb possibly too much liquid herbicide in the area to ever again use the land for growth of any kind and other uses of 55 gallons drums of such wide variety; drums have advantages in and of themselves.

Exhibit #P0794

PIN # DOW979845-61
Date 30-Aug-68
Author A P BEUTEL
Addressee SHEAD, COL. C.G. & KELLY AIR FORCE BASE

Description Buettel writes Col. Shead enclosing a Dow proposal planning document re bulk shipment (converting from drums), suggests Dow should manage program and again seeks to sell Super-Orange

Exhibit #P0795

PIN # DOW120827
Date 04-Sep-68
Author R A HICKMAN
Addressee BEUTEL, A.P. & GOWEL, J.H.
MCCOY, W.J. & OTHERS AT DOW

Description Hickman writes of his concerns and those of industry people that Weldon Springs plant would produce Orange causing industry to supply TCB and referencing serious situation regarding pollution such plant would cause.

Exhibit #P0798

PIN # DOW119942
Date 17-Sep-68
Author W J ZEPP

15411

Addressee HICKMAN, R.A. & ROLLE, CARL
LEWIS, JANE & OTHER GOVT. EMP.

Description W.J. Zepp of the Government relieves Dow of
the 93,000 additional gallons per month
over base of 222,000 gallons per month on
Orange contract cited.

Exhibit #P0800

PIN # DOW120655-7
Date 25-Sep-68
Author R A HICKMAN
Addressee BEUTEL, A.P. & BALLMAN, P.K.
OTHERS AT DOW

Description hickman r Hickman reports 222,000 gallons
per month continue to be shipped and
references opportunity to bid on Tordon.

Exhibit #P0802

PIN # DOW979843-63
Date 30-Sep-68
Author K E HONEYCUTT
Addressee BEUTEL, A.P. & HICKMAN, R.A.
OTHERS AT DOW

Description

Exhibit #P0804

PIN # DOW17180-83
Date 04-Oct-68
Author M F WILKERSON
Addressee HOCHBERG M

Description Based upon present industry capacity to
produce both D and T as opposed to present
purchase patterns of the military, it was
concluded we have a case to present to the
defense and Commerce Departments.

Exhibit #P0805

PIN # DS 17180-3
Date 04-Oct-68
Author M F WILKERSON
Addressee HOCHBERG, H
Description INTEROFFICE CORRESPONDENCE DATED 10-04-68

15412

FROM M. F. WILKERSON TO H. HOCHBERG OF
DIAMOND SHAMROCK.

Exhibit #P0807

PIN # DOW120633
Date 07-Oct-68
Author R A HICKMAN
Addressee HOLDEMAN, GRADY & MCCOY, W.J.
OTHERS AT DOW
Description Hickman writes Dow sales people re
conversations with Carl Rolle and Fred
Knapp where they asked Dow to write specs
for Super-Orange and to quote in their
procurement when order is placed; Knapp
also asked Dow to update Tordon
specifications.

Exhibit #P0809

PIN # 125528-32
Date 18-Oct-68
Author R A HICKMAN
Addressee BEUTEL, DR. A P
Description R. A. Hickman letter of 10-18-68 to Dr. A.
P. Beutel and others.

Exhibit #P0810

PIN # DOW125528-32
Date 18-Oct-68
Author RA HICKMAN
Addressee BEUTEL, A.P. & CORBIN, W.L.
GOWELL, J.H. & OTHERS AT DOW
Description Hickman reports because of the "concern" of
his department and other departments at Dow
on the status of the military herbicide
business and Dow's efforts to sell to the
Gov't with predictions as to effects on
business if bombing stops in North Viet
Nam, and other considerations.

Exhibit #P0812

PIN # DOW120654

15413

Date 30-Oct-68
Author R A HICKMAN
Addressee CORBIN,W.L. & DOW AG PROD SALES

Description Hickman report of conversation with Jane Lewis of Gov't indicates industry had a law firm deliver a letter which concerned her; re; deliveries of 2,4-D and 2,4,5-T and reports his info. re actual gallons required by U.S.

Exhibit #P0825

PIN # DOW119490
Date 31-Dec-68
Author R G GOVT KNOTT
Addressee DOW CHEMICAL & USGOV'TAGENCIES

Description Sample Shipping and Receiving Form issued by U.S. Gov't appropriate agencies re; some of Orange delivered by Dow to U.S.

Exhibit #P0831

PIN # D725522-44
Date 06-Jan-69
Author UNKNOWN UNKNOWN

Addressee
Description PRODUCT SPECIFICATION FOR BRUSH KILLER T-334

Exhibit #P0837

PIN # DOW538375
Date 25-Jan-69
Author C L DUNN
Addressee DUBRIDGE, LEE, DR. & DIR.OFFICE OF SCIENCE & TECH. & PRES. USA OTHERS

Description Author states that a soundly designed experiment is absolutely necessary to determine if a teratologic hazard is associated with 245-T. Requests support in request to FDA to defer action on 245-T until additional information is available for study and evaluation.

15414

Exhibit #P0839

PIN # DOW852450
Date 07-Feb-69
Author JAMES B LAMB
Addressee DUNN, C.L. & NACA INDUST.TASK
FORCE & USDA

Description HEW writes Industry Task Force on Phenoxy Herbicides regarding deficiencies in the petitions proposing tolerances for residues of 2,4,5-T,2,4-D,Silvex,and MCPA,and noting further info.required.

Exhibit #P0843

PIN # 001502-3
Date 21-Feb-69
Author J C STRUM
Addressee NITRO PROGRESS RPT
Description NITRO PLANT PROGRESS REPORT FROM J.C. STRUM
DATED 02-21-69.

Exhibit #P0845

PIN # DOW276151-52
Date 27-Feb-69
Author EUGENE BENEGNA
Addressee RIDER, J.M. & RITTY, P.M.
SHAVER, R.J. & SHELDON N.W.
SOUTHWICK, R & OTHERS

Description Comparison of the toxicological effect of herbicides to fish is difficult because of the wide variation in test methods.

Exhibit #P0848

PIN # DOW124722-7
Date 18-Apr-69
Author D E YANKA
Addressee BEUTEL,A.P. & COFFEY, W.H.
GOWELL, J.H. & HICKMAN,R.A.
WRIGHT,R.W. & OTHERS AT DOW

Description Yanka of Dow writes Report on Renegotiable Dow Contracts to 10 Dow co-employees; The

15425

report argues that only renegotiable area of Dow's business for 1967 involve sales of Tordon and Agent Orange to the United States. Complains of fact that Dow had large (millions) investment in comm'l market, and huge demands of U.S., which caused industry to expand capacity beyond comm'l market; complains of low U.S.gov't price com- pared to comm'l market.

Exhibit #P0854

PIN # DOW856385
Date 23-Jul-69
Author B C BYRD
Addressee LYNN, GEORGE E. & MOSS, R.D.
LANING, E.R. & HYMAS, T.A.
HANSEN, J.C. & DAVIDSON, J.H.

Description Product Technical Specialist of Ag. Dep't Dow writes memo to co-employees of tel. call from Al Young, Lt., USAF, advising Young said he had to "go to the top" to get permission for joint Dow-Air Force publication-with references to permission to classify if results not in interest of either Dow or the Air Force; "There is no way of predicting whether normal degradation of phenoxies would occur under this regime"

Exhibit #P0856

PIN # DOW 817491-0
Date 04-Aug-69
Author GEORGE E LYNN
Addressee MCCOLLISTER, D.D. & LANING, E.R.
BLAIR, ETCYL H. & NUMMY, W.R.
LENG, M.L. & OTHERS AT DOW

Description Five Dow employees attended a meeting with the USDA Pesticides Regulation Division on 7/29/65 re; application for registration of Tordon 225 to control mesquite on permanent rangelands and pastures; and proposing tolerances for residues in forage grasses, meat & Milk. This is the Dow internal report of that meeting.

15416

Exhibit #P0861

PIN # DOW981712-18
Date 26-Sep-69
Author GSA USFEDSUPPSERV
Addressee USA
Description federal specifications for herbicide
2,4,5-T (both salts and esters) superceding
prior specs.

Exhibit #P0862

PIN # DOW550401-07
Date 30-Sep-69
Author J E MUTCHLER
Addressee TREE R M & PLEPYS R A
BAILEY C Z & KRAMER C G
MORSE D B & OTHERS

Description Temperature controls have been installed on
penta feed line to the prill pot.
September wipe tests are now nearing
completion. Four samples are active
including two new active samples, both
located near the fluid bed drier.

Exhibit #P0864

PIN # DOW124858-61
Date 10-Nov-69
Author C L DUNN
Addressee NACA & INDUSTRY TASK
FORCE ON PHENOXY & HERBICIDE MEMBERS

Description Report of urgent meeting of Oct.28, 1969
between industry and gov't
reps.;re;Bionetics indications of
teratogenicity, and reports of birth defects
in Vietnam;also references DuBridges
announcement and positions of the parties
in attendance, with listing of persons
present; On Hercules letterhead.

Exhibit #P0867

PIN # DOW754888-89
Date 25-Nov-69

15417

Author G E LYNN
Addressee ROWE V.K.
Description Dow identified the principal chloracnegen as the sym Tetrachlorodibenzyl-p-Dioxin in late 64'.Dow was bu Herculos is late 65' and sample was from 3rd or 4th batch shipped and high dioxin thought to "pushing" capacity of plant.

Exhibit #P0868
PIN # DOW 754888-9
Date 25-Nov-69
Author G E LYNN
Addressee JOHNSON, J. E. & ROWE, V. K.
Description Notes for J. E. Johnson from G. E. Lynn and V. K. Rowe dated 11-25-69.

Exhibit #P0869
PIN # DOW754888-9
Date 25-Nov-69
Author GEORGE E LYNN
Addressee ROWE,V.K. & JOHNSON, JULIUS E.
Description These notes outline knowledge lynn & rowe claim Dow had of acnegen, Dow Feb.,1964 problems, 2,4,5- T also contained the chloracnegen; the 3/24/65 meeting; and an outline of contamination of various manufacturers' products.Also cites Hercules at up to 3 ppm.

Exhibit #P0871
PIN # DOW549692-93
Date 01-Dec-69
Author CHEMICAL EXP LOG
Addressee
Description Statistical Analysis on Report # 23.14-23-6/5065.

Exhibit #P0874
PIN # DOW 28610-11

15418

Date 10-Dec-69
Author GEORGE LYNN
Addressee HANSEN, J C & JOHNSON, J E
MCCOLLISTER, D D & NAEGELE, R E
ROBINSON, V B & OTHERS

Description

Exhibit #P0875

PIN # DOW766734-36
Date 12-Dec-69
Author ALEX WIDIGER
Addressee CHANG, K Y & LEAVITT, F C
DEMONTT, D N & POFFENBERGER, N
SCHMIDTKE, D & OTHERS

Description Chemical companies are offering flake 2,4,5 T on world market which is strongly resistant to blooming. We have found the following affects reduce the tendency to bloom: proglonged heat treating, thinner flakes, the presence of caustic insoluable methoxy compounds.

Exhibit #P0883

PIN # DOW538377
Date 29-Dec-69
Author CL DUNN
Addressee F. MCFARLAND & FDA
HARRY HAYS & NED BAYLEY
L.L. DANIELSON

Description LETTER NOTES THERE HAS BEEN NO RESPONSE TO REQUEST OF 12/5/69 REGARDING EXTENTION FOR ACTION ON PESTICIDE PETITION 8F0669 (2,4,5-T) AND IN ACCORDANCE WITH FEDERAL REGULATIONS WITHDRAWS WITHOUT PREJUDICE SAID PETITION.

Exhibit #P0884

PIN # 000657-660
Date 07-Jan-70
Author H H STEHL
Addressee ROWE, V K & GILL, H
SKELLY, N & HALLEY, C
DUNN, F

15419

Description JANUARY 7, 1970 DOW SCIENTISTS DETERMINED THAT SAMPLES TESTED OF DIAMOND SHAMROCK 2,4,5-T (trichloro- phenoxyacetic acid) AVERAGED 27 PPM (PLUS OR MINUS 8 PPM THEREFORE, AVERAGED 19 PPM - 35 PPM) USING GAS LIQUID-LIQUID CHROMATOGRAPHY METHOD OF EXTRACTION.

Exhibit #P0885

PIN # D817130-218
Date 08-Jan-70
Author M MCCLURE
Addressee MORGAN R.W.
Description Meeting to discuss the reasons given by PRD for rejection of the Dow Applications for Temporary Permit to Ship Tordon 166 Mixture and Tordon 169 Mixture herbicides. The outcome of this parley was assent by PRD to reconsider insurance of the Permits is resubmitted.

Exhibit #P0886

PIN # DOW 1257-59
Date 12-Jan-70
Author GEORGE E LYNN
Addressee EGEBERG, DR. & LINDSAY DALE DR.
KOTIN, PAUL DR. & BURGER EDWARD DR.
MITCHELL IAN DR. & OTHERS

Description Concerned that the sample used could have contained a highly toxic impurity. We strongly urge that action concerning the status of 2,4,5-T be held in abeyance until the testing program is completed.

Exhibit #P0887

PIN # DOW23034-36
Date 12-Jan-70
Author GEORGE E LYNN
Addressee EGEBERG, DR. ROGER & HEW
LINDSAY, DALE, FBA & BAYLEY, NED D.
USDA & KOTIN, PAUL, ETAL.

15420

Description Lynn's letter to Egeberg and other governmental officials advises Dow's

knowledge in 50's; activity of TCDD, Dow's
1 ppm spec., bionetics samples 27+ ppm
contamination; describes Dow's coming
territological testing.

Exhibit #P0888

PIN # DOW746134-38
Date 15-Jan-70
Author V K ROWE
Addressee BURGER, E.J. & OST
PRESIDENT USA
Description Rowe encloses summary data oral toxicity
TCDD.

Exhibit #P0889

PIN # 1232987-91
Date 16-Jan-70
Author V K ROWE
Addressee BURGER, EDWARD J. & CC: OTHERS
Description IN RESPONSE TO INQUIRY OF OFFICE OF SCIENCE
AND TECHNOLOGY, EXECUTIVE OFFICE OF
PRESIDENT, WASH., D.C., JANUARY 1970, DR.
ROWE MERELY INDICATES THAT HE HAS ENCLOSED
TABLES ON RATS AND GUINEA PIGS FOR THE
GOVERNMENT TO INTERPRET. "NO RELIABLE DATA
FOR RABBITS LD50 TO BE ESTABLISHED."
RABBITS DIED.

Exhibit #P0891

PIN # DOW746169
Date 19-Jan-70
Author G E LYNN
Addressee VERRETT, J.M. & FDA
RICHARDSON, H.L. & FDA
Description Letter recites Dow sending 25 gr. 2,4,5-T
representing that sample meets Dow's 1 ppm
specification.

Exhibit #P0892

PIN # 999600-02

15421

Date 19-Jan-70
Author RUDOLPH H STEHL
Addressee ROWE, V K & DUNN, F
GILL, H & SKELLY, K.
BAILEY, C
Description IN SAMPLES OF DOW 2,4,5-T TESTED BY DOW'S
OWN LABORATORY, RESIDUES WERE LEFT IN THE
100-150 PPM, BUT DOW'S CLAIMS THE TCDD
RESIDUE IS ONLY IN THE 3-8 PPM RANGE.

Exhibit #P0893
PIN # DOW028238-42
Date 21-Jan-70
Author G E LYNN
Addressee BLAIR, E. H. & BROWER, H. H.
CRUMMETT, W. R. & FERNANDEZ, J. E.
HANSEN, J.C. & 8 OTHERS
Description stating he is keeping a record of all
samples of 2,4,5-t , 2,4-d and silvex
(including derivatives) that are sampled.

Exhibit #P0894
PIN # 028238-42
Date 21-Jan-70
Author GEL LYNN
Addressee ROWE, VK & BLAIR, E H
CRUMMETT, W R & FERNANDEZ, J B
GETZENDANER, M E & HANSEN, J C. ET AL
Description DOW IN-HOUSE MEMO REGARDING ANY OUTGOING
SAMPLES TO BE SENT TO THE EPA OR ANY OTHER
GOVERNMENTAL AGENCY MUST BE CLEARED
THROUGH LYNN. THE SAMPLES SUPPLIED MUST
MEET THE DOW SPEC, AND LAB REFERENCE
STANDARD OF VERY HIGH PURITY- LIMITED IN
SUPPLY MUST BE CAREFUL NOT TO LET JUST ANY
OLD SAMPLE OF 2,4,5-T OUT OF THIS COMPANY.

Exhibit #P0898
PIN # 746158-616
Date 06-Feb-70
Author V K ROWE
Addressee FALK, HANS & TRIANGLE PARK, NC
DEPT. HEW

15422

Description LETTER OF ROWE, FROM DOW TO DR. HANS FALK, DIRECTOR OF LABORATORY RESEARCH, RESEARCH PARK, NORTH CAROLINA, DEPARTMENT OF HEALTH, EDUCATION AND WELFARE DISCUSSING SENDING THE SAMPLES OF PURIFIED 2,3,7,8 -TCDD AND THE EXTREME TOXICITY OF THIS COMPOUND. THE REASONS GIVEN FOR THE DELAY IN SHIPPING WAS THE NECESSARY PRECAUTIONS THAT HAD TO BE TAKEN NOT TO CONTAMINATE OTHERS. ALSO DOW INFORMED GOVERNMENT THAT IT HAD A NEW METHOD OF DETECTING TCDD, "DOW ANALYTICAL METHOD MLW -65.11" WHICH ROWE FORGOT TO INCLUDE, SEE NEXT EXHIBIT IN WHICH DR. FALK RESPONDS.

Exhibit #P0902

PIN # DOW1119842
Date 10-Feb-70
Author UNKNOWN UNKNOWN
Addressee LOGAN?
Description DOCUMENT ENTITLED PURCHASE DESCRIPTION HERBICIDE ORANGE SETTING FORTH AN AMENDMENT TO PURCHASE DESCRIPTION AFFID 6840-1, 1/2/70 WITH REGARD TO PARAGRAPH 4.2.4.1.

Exhibit #P0903

PIN # DOW028605
Date 10-Feb-70
Author HANS L FALK
Addressee ROWE, DR. V.K.
Description letter of thanks for information and a request for missing data. dow called and the problem of shipment of the dioxin is solved. now the next set of experiments can get under way.

Exhibit #P0904

PIN # 028605
Date 10-Feb-70
Author HANS FALK
Addressee HEW & TO ROWE, VK
RE 434
Description DR. HANS FALK OF THE DEPARTMENT HEALTH, EDUCATION AND WELFARE, DIRECTOR FOR LABORATORY RESEARCH NATIONAL INSTITUTE OF

15423

HEALTH, TRIANGLE PARK, NORTH CAROLINA IS
ASTONISHED AT THE EXTREME TOXICITY DATA
THAT DR. V.K. ROWE HAS JUST SENT IN EXHIBIT
434.

Exhibit #P0905

PIN # DOW445809
Date 11-Feb-70
Author UNKNOWN UNKNOWN
Addressee LEGATOR, FDA & VERRETT, FDA
RICHARDSON, FDA & MANY OTHER
FDA AND USDA
Description Notice of meeting of government scientists
with technical personnel of Dow to discuss
chick edema factor methodology shows Dow
reps to attend.

Exhibit #P0907

PIN # DOW1130312
Date 13-Feb-70
Author UNKNOWN DOW
Addressee AGRI PRODUCTS
Description DOCUMENT ENTITLED SALES SPECIFICATION WITH
RESPECT TO 2,4,5-T ACID SETS FORTH
2,3,7,8-TCDD AT 1 PPM.

Exhibit #P0908

PIN # DOW028232-36
Date 13-Feb-70
Author GEORGE LYNN
Addressee WILLIAMS, C G & NAEGELE, R E
DONALDS, JOHN E & SPARTA, TOM
JOHNSON, JULIUS & ROWE, VK ET AL
Description GEORGE LYNN GOVERNMENT REGULATORY RELATIONS
FOR DOW CHEMICAL REPORTS IN A CONFIDENTIAL
MEETING MEMO THE MEETING BETWEEN DOW
(CRUMMETT, HOLDER, LEAVITT LYNN) AND THE
FDA HELD IN WASHINGTON, FEBRUARY 11, 1970.
DR. CAMPBELL MADE THE PRESENTATION FOR FDA;
CRUMMETT AND HOLDER MADE THE PRESENTATION
FOR DOW. THE FDA IS CONCERNED THAT CDD'S
MAY BE WIDESPREAD IN ENOUGH QUANTITY TO BE
HAZARD TO HUMANS; CARCINOGENIC RISK; SAME

15424

PERSISTENCE AS DDT AND BIOMAGNIFICATION; DR
KRAYHILL SAID SHOULD NOT BE PERMITTED;
"ONE MOLECULE IS TOO MUCH." DR KRAYBILL.
DR. A. D. CAMPBELL, CHIEF CONTAMINANTS
BRANCH, FDA WASHINGTON, DC

Exhibit #P0909

PIN # DOW751916-7
Date 20-Feb-70
Author RALPH C WANDS
Addressee LONGENECKER, W.H. & FT. DETRICK
ROWE, V.K.
Description Wands' director, Advisory Center on
Toxicology, NAS, suggests Longenecker
arrange meeting with V.K. Rowe to learn
something of the toxicology of TCDD.

Exhibit #P0912

PIN # DOW040862-66
Date 27-Feb-70
Author GEORGE LYNN
Addressee MASON, JOHN & WILLIAMS, G.J.
SPARTA, TOM & NAEGELE, R.E.
DONALDS, JOHN & OTHERS
Description Goal: To establish the principal uses of
Chlorophenols and to utilize this
information in seeking out the ways in
which they could possibly be related to the
presence of chlorodebenz-p-p-dioxins in
fats, soap stocks, etc.

Exhibit #P0914

PIN # DOW538598
Date 10-Mar-70
Author HAROLD ALFORD
Addressee FED REG & ECONOMIC
POISON
Description Letter states additional safety studies are
needed for 2,4,5-T currently registered,
among others and that data on
carcinogenicity or teratogenicity should be
submitted immediately. If such data is not
available studies are requested
immediately. Epidemiological studies also

15425

requested.

Exhibit #P0917

PIN # DOW007830
Date 17-Mar-70
Author JAMES ILLEGIBLE
Addressee

Description Dow scientists presented detailed evidence showing that a contaminant rather than the compound 2,4,5-T was probably the cause of birth abnormalities. The National Cancer Institute indicated higher than normal rates of birth defects in test animals treated with massive doses of 2,4,5-T.

Exhibit #P0918

PIN # 392436-38
Date 17-Mar-70
Author G L SPARSCHU
Addressee DUNN, F L & ROWE, V K

Description PAPER PRESENTED AT THE MEETING OF THE SOCIETY OF TOXICOLOGY ATLANTA, GEORGIA, MARCH 17, 1970 RESULTS INDICATE A HIGH LEVEL OF MATERNAL AND FETAL TOXICITY TOXICITY TO BE ASSOCIATED WITH 2,3,7,8-TCDD, STUDY BY DOW. TERATOGENIC

Exhibit #P0919

PIN # DOW392434-35
Date 17-Mar-70
Author J L EMERSON
Addressee GERBIG, C G & ROBISON, V B

Description THIS ABSTRACT WAS PRESENTED SIMULTANEOUSLY WITH THE EXHIBIT NO'S 437 AT THE SOCIETY OF TOXICOLOGY IN ATLANTA, GA; HOWEVER THE FINDINGS OF THIS GROUP OF DOW SCIENTISTS DISAGREE WITH THE BIONETICS RESEARCH LABS, BETHESDA, MD.

Exhibit #P0921

15426

PIN # DOW120584
Date 18-Mar-70
Author GEORGE E LYNN
Addressee HAYS, HARRY W. & USDA
LINDSAY, DR. DALE & FDA/HEW
BCCDOW OTHERS & ACTION FILE 245T

Description leteter seeks to assure Department of Agriculture about the quality of the composition of commercial 2,4,5-T acid produced by Dow Chemical. Claims that in 1965 a rigid production standard was imposed by Dow of less than 1 ppm of TCDD in 2,4,5-T.

Exhibit #P0924

PIN # DOW582853
Date 23-Mar-70
Author C DOW
Addressee JOHNSON, J.E. & LUECK, A.T.
LYNN, G.E. & BLAIR, E.H.

Description Memo re status of 2,4,5-T backup program.

Exhibit #P0926

PIN # DOW28243-44
Date 26-Mar-70
Author GEORGE LYNN
Addressee JOHNSON, J & WILLIAMS, C J
NAEGELE, R & DONALDS, JOHN
BLAIR, E & OTHERS

Description Dow and Monsanto can begin to predict where the bulk of the chlorophenols are going and evaluate some of the potentials for contaminent problems.

Exhibit #P0927

PIN # DOW028243-44
Date 26-Mar-70
Author GEORGE E LYNN
Addressee WILLIAMS, C J & NAEGELE, R. E.
DONALDS, JOHN E. & SPARTA, TOM A.
LEAVITT, F. C. & OTHERS

15427

Description the report is from meetings 2/25, 3/19, 3/23.

Exhibit #P0928

PIN # DOW582854-55
Date 26-Mar-70
Author GEORGE E LYNN
Addressee JOHNSON, JULIUS & WILLIAMS, G.J.
OTHERS AT DOW

Description Lynn writes Johnson, Rowe and 12 others at Dow to report on meetings of 02/25, 03/19, and 03/23, re dioxin and Monsanto koppers human health problems.

Exhibit #P0929

PIN # DOW1104-8
Date 31-Mar-70
Author BENJAMIN B HOLDER
Addressee LYNN, GEORGE E. & NO OTHERS SHOWN

Description Letter is a summary of clinical information distributed to various institutions by Dow regarding the 1964 chloracne episode at the Midland Plant. Attached to the letter is a "Review of occupational health problems associated with th the manufacture of chlorinated phenols a t Midland, MI in 1964. Notes that disease primarily affects the skin and with extreme exposure "... a general organ toxicity can result." Liver and nervous disorders naote noted and no specific treatment for disease is known.

Exhibit #P0930

PIN # 1170342
Date 31-Mar-70
Author V K ROWE
Addressee DUNN, F L & GORDON, H L
HOLDER, B B & HINMAN, C W
HOYLE, H R & JOHNSON, J E

Description WE DO NOT HAVE ENCLOSURE

15428

Exhibit #P0932

PIN # DOW1103
Date 02-Apr-70
Author GEORGE LYNN
Addressee
Description In discussing the attached information with Dr. Holder he says the chloracne problem was related to the "accident" in the 2,4,5-T plant and the culprit was principally 2,3,7,8-T.

Exhibit #P0934

PIN # DOW999363-67
Date 07-Apr-70
Author CHARLES KRAMER
Addressee JOHNSON, JULIUS
Description One hundred thirty employees who have worked more than six months in areas where exposure to 2,4,5-T occurred and on whom recent medical examination data was available.

Exhibit #P0935

PIN # DOW119849-68
Date 07-Apr-70
Author CHARLES KRAMER
Addressee JULIUS JOHNSON
Description At present we are involved in an extensive reworking of the program based on review of the "first cycle" results. Approximately 10 percent of the subjects participating in the health inventory have prompt follow up by a physician on the basis of suspected abnormalities detected during inventory.

Exhibit #P0936

PIN # DOW549641-91
Date 10-Apr-70
Author F D AXE
Addressee DOW
Description Measurements to describe the chemical exposures of workmen engaged in the

15429

manufacture of 2,4,5-T. Dry Dust of 2,4,5-T has the capacity to produce upper respiratory irritation. Dust levels are frequently high enough to be very noticeably irritating. Observations indicate nasal irritation sneezing and a bitter taste may result from brief exposures.

Exhibit #P0937

PIN # 549641-660
Date 10-Apr-70
Author F D AXE
Addressee FILE & LYNN, G E
DELINE, DD & SCHMIDTKE, D J
HODSON, R E & MILLER, D E OTHERS

Description BIOCHEMICAL RESEARCH LAB AT DOW CHEMICAL CO., F. D. AXE DISTRIBUTED A STUDY OF CHEMICALLY EXPOSED WORKERS IN BUILDING 267 BUILDING (2,4,5-T PLANT); ALTHOUGH HE STATES THE LEVELS OF EXPOSURE ARE BELOW MINIMUM THRESHOLD LIMIT VALUE, DRY DUST HAS CAPACITY TO PRODUCE UPPER RESPIRATORY IRRITATION AT LEVELS MUCH LOWER THAN TLV; RECOMMENDS IMPROVE DUST CONTROL AT THE PACKING STATION- DUST ESCAPES FROM SEAL (FAULT OF EITHER SEAL OR INSUFFICIENT AIR VELOCITY).

Exhibit #P0939

PIN # DOW392412-23
Date 15-Apr-70
Author JULIUS JOHNSON
Addressee SENATE COMMITTEE
Description Reference to birth defects observed in tests. The most sensitive toxic reaction observed in humans to this impurity was manifested by a condition known as chloracne, a skin disorder suffered by teenagers. Exposure to this waste oil was the cause of the acne in the workmen.

Exhibit #P0940

PIN # DW 392412-23
Date 15-Apr-70

15430

Author JULIUS E JOHNSON
Addressee SUBCOMMITTEE ON & ENERGY

Description STATEMENT BY JULIUS E. JOHNSON, VICE PRESIDENT AND DIRECTOR OF RESEARCH, THE DOW CHEMICAL COMPANY, BEFORE THE SUBCOMMITTEE ON ENERGY, NATURAL RESOURCES AND THE ENVIRONMENT OF THE SENATE COMMITTEE ON COMMERCE, DATED 04-15-70.

Exhibit #P0941

PIN # DOW130436-7
Date 15-Apr-70
Author JULIUS JOHNSON
Addressee USA PUBLIC & HART SENATE COMM.

Description Copies from Dow produced documents of minutes of Julius Johnson's testimony given April 15, 1970, before Hart Senate subcommittee on the environment, presumably from the Federal Register or Congressional Record; confirms Johnson of Dow made disclosures contained in full text of speech drafted for him at Dow.

Exhibit #P0945

PIN # DOW547219-20
Date 20-Apr-70
Author HARRY W HAYS
Addressee ECONOMIC POISONS

Description This herbicide may present an imminent health hazard to women of child-bearing age and has recommended suspension of certain registered uses of 2,4,5-T. In order to prevent an imminent hazard containing 2,4,5-T to the public it is necessary to suspend the registration for these products.

Exhibit #P0946

PIN # DOW547221
Date 20-Apr-70
Author HARRY HAYES
Addressee DOW CHEMICAL

Description It is hereby found that in order to prevent

15431

an imminent hazard to the public it is necessary to suspend the registration for purducts containing 2,4,5-T.

Exhibit #P0947

PIN # 999173
Date 23-Apr-70
Author R L LAPE
Addressee LYNN, G E & ROWE, V K
FERNANDEZ, J
Description DOW TESTED 10 BATCHES OF AGENT ORANGE FROM FT DETRICK AND FOUND IT CONTAINED BETWEEN 1-15PPM OF 2,3,7,8-TCDD

Exhibit #P0948

PIN # DOW119606
Date 01-May-70
Author G J WILLIAMS
Addressee
Description Letter written by G.J. Williams stating how he feels that Dow should make its position known to the rest of the Government rather than give the Department of Defense an option.

Exhibit #P0949

PIN # DOW130323-24
Date 11-May-70
Author PROD AND MKT CANADA DEPT AGR
Addressee
Description Further evidence show that 2,4,5-T is potentially capable of causing abnormal development. This dioxin can also cause a serious skin condition known as chloracne. Findings suggest that this couldd constitute a hazard to children and women exposed during pregnancy.

Exhibit #P0950

PIN # DOW582846-7
Date 11-May-70
Author FRED LEAVITT

15432

Addressee BLAIR, E. & 31 OTHER DOW EMP.

Description Memo re environmental problems re chlorinated phenols.

Exhibit #P0951

PIN # DOW119791-7

Date 14-May-70

Author GARETH OWEN

Addressee LYNN, GEORGE E

Description along with the letter are the results of teratological studies done in charles river cd rats.

Exhibit #P0952

PIN # DOW582836-7

Date 22-May-70

Author R A PLEPYS

Addressee LYNN, G. & BLAIR, E.H.

ROWE, V.K. & HOLDER, V.B.

LUECK, A. & 19 OTHER DOW EMP.

Description Minutes of meeting eco-studies of chlorophenols.

Exhibit #P0954

PIN # DOW770705-09

Date 25-May-70

Author P BRADY

Addressee HABERSTROH W.H & WILLIAMS L

VOGELSANG P & CHASE F

KENSICKI R & SCHMIDTKE D

Description The manufacture of Phenoxy-Herbicides requires the removal of unreacted phenols from the reactor product mix. Laboratory data indicates that a flow of ----- lbs. of Trichlorobenzene for each pound of Silvex solution using ---- stages will remove ----- of the unreacted phenol.

Exhibit #P0955

15433

PIN # DOW956820-24
Date 28-May-70
Author GEORGE LYNN
Addressee US DEPT OF AGRIC.
Description Cancellation of 2,4,5-T Products bearing certain directions for use. All uses on food crops intended for human consumption shall cease.

Exhibit #P0956

PIN # DOW119607
Date 03-Jun-70
Author BARSTOW BLDG DOW CHEMICAL
Addressee CLIFFORD M. HARDIN
Description TORDON has limited registration for use on non-food cropland and right of way maintenance in the United States. Requests for registration on pasture and rangeland have been submitted.

Exhibit #P0960

PIN # DOW424633-64
Date 15-Jun-70
Author C J WILLIAMS
Addressee LAIRD, MELVIN & DR. LEE DUBRIDGE
ELLIOT RICHARDSON & WALTER J. HICKEL
Description There is abundant evidence that 2,3,7,8-T is highly toxic. The Dow Company recommends strongly that the government set appropriate specifications and controls to insure that no 2,4,5-T be used if it contains more than on part per million 2,3,7,8-T.

Exhibit #P0961

PIN # DOW392412-23
Date 15-Jun-70
Author JULIUS JOHNSON
Addressee SENATE COMMITTEE
Description The possibility of a highly toxic impurity being formed in 2,4,5-T as a side reaction under conditions of elevated processing temperatures. This impurity is a condition known as chloracne, a skin disorder. It is

15434

in these oils that the impurities are concentrated. Exposure to this waste oil was the cause of the acne in the workmen.

Exhibit #P0962

PIN # DOW 424633-4
Date 15-Jun-70
Author G J WILLIAMS
Addressee LAIRD, HON MELVIN R
Description G. J. WILLIAMS , VICE PRESIDENT OF DOW,
LETTER TO HON. MELVIN R. LAIRD, SECRETARY
OF DEFENSE, DATED 06-15-70.

Exhibit #P0966

PIN # DOW119979
Date 29-Jun-70
Author D D MCCOLLISTER
Addressee DREW BAKER, JR. & DR. W. UPHOLT
MR. K.K. KRAUSCHE & MR. C.L. DUNN
Description Analytical chemists of the Dow Chemical Co.
have utilized a GLC procedure essential
that for analyzing 2,3,7,8-T. The
procedure was sensitive enough to detect as
little as 0.1 ppm.

Exhibit #P0967

PIN # DOW129637-42
Date 01-Jul-70
Author SAMUEL EPSTEIN
Addressee READER OF ENVIRON
Description Linking birth defects to the weed killer
2,4,5-T have resulted in restrictions on the
use of this product. The warnings stem
from the discovery that several variants,
or esters of 24-D including the one
commonly used in weed control, have caused
birth defects in animals.

Exhibit #P0968

PIN # DOW766740-50
Date 20-Jul-70

15435

Author KOU YUAN CHANG
Addressee TOU, JAMES C. & LOOK, A.
SHEETZ, D. & DEMOTT, D.N.
POFFENGERGER N. & OTHERS

Description Two major concerns in the production of 2,4,5 T are the chloracne problem and the product quality. It is unlikely that a change in the reaction condition of the present process can eliminate the formation of methoxydichlorophenols.

Exhibit #P0970

PIN # DOW149715-42
Date 23-Jul-70
Author PRESIDENT ADVISORY COMM
Addressee
Description In general, 2,4,5-T residues can be expected to be unstable materials in the environment. Chemistry analysis is provided.

Exhibit #P0972

PIN # DOW367964-66
Date 11-Aug-70
Author MARGUERITE L LONG
Addressee K.C. BARRONS & E.M. BLAIR
J.M. DAVIDSON & G.E. BLAIR
D.D. MCCOLLISTER & OTHERS

Description Studies by the Dow Chemical have shown that cows fed 700 ppm 2,4,5-T in the total diet gave milk containing in the neighborhood of 0.3 ppm 2,4,5-T.

Exhibit #P0974

PIN # DOW12388-423
Date 26-Aug-70
Author JULIUS JOHNSON
Addressee DOW CHEMICAL
Description The purpose is to explore possible public health consequences of widespread use. The data presented will emphasize exposure toxicity and chemistry. There were detectable levels of 2,4-D and 2,4,5-T in

15436

the air up to 0.06 micrograms per cubic meter. Direct skin contact, together with vapor and mist exposure are encountered in varying degrees by applicators and employees in manufacturing plants.

Exhibit #P0975

PIN # DOW018868-83
Date 15-Sep-70
Author UNKNOWN UNKNOWN
Addressee MOUNTAIN LAKE & ROW MAINTENANCE
CONFERENCE.

Description this was an oral presentation, along with the article are chemical diagrams.

Exhibit #P0978

PIN # DOW538823-30
Date 01-Nov-70
Author G L SPARSCHU
Addressee DUNN F L (AUTHOR) & ROWE V K (AUTHOR)

Description

Exhibit #P0979

PIN # DOW751854-55
Date 18-Nov-70
Author D D MCCOLLISTER
Addressee J.E. JOHNSON & G.E. LYNN
E.H. BLAIR & P.M. RITTY
E.E. KENAGA & OTHERS

Description One notable void in this package is the information that Dr. Danielson requested on the acute oral toxicity of the various chlordioxins. A group of experts from EP Board in Sweden have been appointed to evaluate the phenoxy herbicide situation.

Exhibit #P0982

PIN # DOW538372
Date 05-Dec-70
Author CL DUNN

15437

Addressee JAMES LAMB & HEW FDA
DUBRIDGE & H.L. LEY
NED BAYLEY & H. W, HAYS

Description requests an extension until April 1970 on the Pesticide Petition 870669 on 2,4,5, -T which deadline was set for January 1, 1970. Letter states that additional studies are underway which will present important data to be reviewed.

Exhibit #P0984

PIN # DOW 00842
Date 11-Dec-70
Author L A DALTON
Addressee J.E.JOHNSON
Description Conclusion of tested showed that all skin contact with the test material should be avoided.

Exhibit #P0985

PIN # DOW120142-9
Date 30-Dec-70
Author MATTHEW MESELSON
Addressee WESTING, ARTHUR H. & CONSTABLE, JOHN D.
COOK, ROBERT E.
Description herbicide assessment commission of the American Association for the Advancement of Science.

Exhibit #P0986

PIN # DOW579003-9
Date 31-Dec-70
Author MIKE SIEDEL
Addressee
Description This spec has no written description, it is a diagram of the Alkaline Hydrolysis.

Exhibit #P0995

PIN # JUS215-704-8
Date 08-Mar-71

15438

Author RICHARD M PATTERSON
Addressee CHMN.ARMED FORCES & PEST CONTROL BOARD
WASH.,D.C.
Description Gov't relations mgr. Dow writes AFPCB to advise Dow's capabilities in destroying herbicides, the combustion of TCDD on incineration, and encloses report re same given 2-24-71; states "more than 40%) of the Orange inventory is unusable because of a dioxin level higher than one part per million".

Exhibit #P1000

PIN # DOW120239-40
Date 31-Mar-71
Author A T TALCOTT
Addressee KANESHIRO K.R.
& O'CONNOR J.N
MCCOLLISTER D.D. & LYNN G.E.
PIPPENGER P. & OTHERS

Description This letter contains the total number of containers of 2,4,5-T in inventory on April 29, 1970.

Exhibit #P1001

PIN # DOW119670-84
Date 01-Apr-71
Author DOW DOW CHEMICAL

Addressee
Description The EPA has also advised that a specific tolerance for phenoxies in grass is necessary: a tolerance in grass had not been requested by ITFPHT as it did not appear necessary.

Exhibit #P1005

PIN # DOW 047457
Date 01-Jun-71
Author GEORGE LYNN
Addressee R.E. NAEGELE & JULIUS JOHNSON
F.H. BLAIR & T.A. BYMAS
D.D. MCCOLLISTER & OTHERS

Description A letter stating that a report will be

15489

considered by the Administrator of EPA in making his descions about the suspended and cancelled registrations of 2,4,5-T.

Exhibit #P1009

PIN # DOW550150-71
Date 06-Jul-71
Author R D OLSEN
Addressee D.D. DELINE & C.Z. BAILEY
E.M. SEIDEL & R.E. SNYDER
B.B. HOLDER & OTHERS

Description Particular emphasis placed on potential chloracne hazards. Wipe Samples indicate an increase to an all time high of 38% in February and May, 1971.

Exhibit #P1010

PIN # H27741
Date 29-Jul-71
Author F STEHL
Addressee CRUMMETT, W & CHAMPLAIN, C.E
OTHERSAT DOW

Description Report of Analysis of Hercules, 2,4,5-T sample x-17394-21-5 showing .18ppmTCDD and reports 50 ppb in dow sample.

Exhibit #P1013

PIN # DOW119883-89
Date 19-Aug-71
Author V K ROWE
Addressee BATES, RICHARD DR. & LYNN, G.E.
ROWE VK

Description Summary of Toxicological information. Many graphd and diagrams.

Exhibit #P1014

PIN # H4E1-2
Date 28-Oct-71
Author DONALD D MCCOLLISTER
Addressee WEIR, DR. ROBERT & BIONETICS LABS
FRAWLEY, J.P.

15440

Description Dow encloses their lab reports analyzing the 245T used by Bionetics in their rat study indicating more recent studies in mice used Hercules product .18ppm TCDD

Exhibit #P1016

PIN # DOW767059-60
Date 01-Nov-71
Author DOW DOW

Addressee
Description This is directions on how to use Veon Brush Killer.

Exhibit #P1017

PIN # H4(E)0000
Date 09-Nov-71
Author E ROSS HART
Addressee MCCOLLISTER, D.D. & FALSEY, DR. J.P.
WEIR, DR. R.J.

Description Weir asked Hart of Bionetics to respond to Dow's 10-28-71 re use of Hercules 245T in continuing bionetics lab mice studies; Hart unable to comment but agrees that "caution must be exercised in statements that would appear in publication". Invites Dow to make specific suggestions re that.

Exhibit #P1018

PIN # H4(E)813
Date 09-Nov-71
Author E ROSS HART
Addressee FRAWLEY, DR. J.P. & NO OTHERS

Description Hart enclosed abstract submitted for inclusion in program of Toxicology Society in March, referencing fact that no specific results were obtained and solicits suggestions from Frawley as to how to state results obtained.

Exhibit #P1019

PIN # 538832-630

15441

Date 09-Nov-71
Author G L SPARSCHU
Addressee DUNN, F L & ROWE, V K

Description ARTICLE WHICH IS PUBLISHED OF THE DOW STUDY AGREEING WITH BIONETICS REPORT AND COMPORTS WITH THE PREVIOUSLY SUBMITTED ABSTRACT.

Exhibit #P1020

PIN # H4(K)240
Date 15-Nov-71
Author W C KENYON
Addressee SHEARER, P.W. & TAVES, DR.M.A.
HALL, DR.R.T. & FORD, J.J.

Description Hercules cannot refute results reported, but notes ambiguity in statements of reports, which reference both .18ppm and elevations corresponding to 3.8ppm TCDD.

Exhibit #P1022

PIN # DOW129635-36
Date 17-Nov-71
Author G LYNN

Addressee
Description

Exhibit #P1023

PIN # DOW026811-2
Date 04-Dec-71
Author J C WILSON

Addressee
Description the dow chemical company request for preliminary toxicological studies form on the product 2,4,5-t acid. analysis for this is on form ml-al-24-6???

Exhibit #P1028

PIN # H4(K)254-5
Date 17-Jan-72
Author D D MCCOLLISTER
Addressee HART, DR.E.ROSS & BIONETICS LABS

15442

DUNN, C.L. & WEIR, DR. R.J.

Description USDA & FDA had published that Hercules lot of 245-T used in animal studies was "less than .05ppm"; Dow states "in our opinion there was no method available in 1970 which could be shown with adequate documentation to detect as little as .05ppm". Dow suggests bionetics ignores the differences of opinion and merely present their results as "on the order of .05ppm".

Exhibit #P1031

PIN # DOW126112-18
Date 15-May-72
Author DOW CHEMICAL
Addressee RENEGOTIATION BOARD
Description Text of presentation of Dow to May 15, 1972 meeting of statutory renegotiation board where Dow attempts to obtain renegotiation of the price that received for its Orange and gives argument and support thereof.

Exhibit #P1032

PIN # DOW053909
Date 10-Jul-72
Author B A SCHWETZ
Addressee GEHRING P J
Description Work to be done to supplement the existing information on the toxicity of the chlorinated dibenzo-p-dioxins.

Exhibit #P1033

PIN # DOW123061-68
Date 06-Oct-72
Author COMPANY DOW CHEMICAL
Addressee
Description two bibliography's - 1) determination of chlorinated dibenzo-p-dioxins and 2) analytical chemistry of herbicides

Exhibit #P1034

15443

PIN # DOW119557
Date 22-Nov-72
Author T YATES
Addressee DCASR DETROIT
Description Award Contract

Exhibit #P1049

PIN # DOW710839-56
Date 21-Feb-74
Author G J ROUSH
Addressee J.L. DEGEER & R.E. WINTERS
F.L. WILLIAMS & R.R. LANGER
B.B. HOLDER & OTHERS

Description Bldg. 267 of the Midland Division is slated to be ravaged. The chemicals of concern were judged to be TBC and TCBD. Tertiary Butyl dust is highly irritating to the skin and eyes. Eye contact may cause permanent loss of vision.

Exhibit #P1050

PIN # DOW 005592
Date 08-Jul-74
Author MARGUERITE LENG
Addressee MCCOLLISTER, D. D.
Description HANDWRITTEN MEMOS BETWEEN MARGUERITE LENG AND D. D. MCCOLLISTER OF DOW DATED 07-08-74.

Exhibit #P1060

PIN # DOW119974-77
Date 29-Mar-77
Author UNKNOWN WJR
Addressee DOW
Description Four page document contains Dow's capability for pro- duction of 2,4-D and 2,4,5-T and delinates herbicide contracts , Defense General Supply Center, dated March 29, 1967.

Exhibit #P1061

15444

PIN # NONE
Date 15-Sep-77
Author PAUL F OREFFICE
Addressee ALL DOW SUP'RS
Description President Orrefice of Dow writes all Dow U.S.A. Supervisors regarding Dow's Records Retention Policy and contains "WHEN IN DOUBT, THROW IT AWAY!!!"

Exhibit #P1066

PIN # DOW047290
Date 21-Jun-78
Author P J GEHRING
Addressee CROW DR.
Description This letter states by Mr. Gehring that he cannot support a study using doses which are likely to produce discernible effects.

Exhibit #P1091

PIN # DOW1132503
Date 03-Mar-81
Author LU LAPOINTE
Addressee RAY HOLMES
Description LETTER INDICATES THAT HOLMES REFERRED TO THE TCDD PROBLEM AS 10/5/64 WHICH ACCORDING TO THE AUTHOR WAS SOME TWO MONTHS PRIOR TO THE ANALYTICAL LABS ISOLATION OF THE CHLORAGEN. LETTER STATES THAT IT APPEARS THAT SOME "PRESSURE" WAS APLLIED TO HOLMES TO CONTINUE PLANT OPERATIONS WITH ONLY MINOR CHANGES THAT HOLMES WAS NOT IN AGREEMENT WITH.

Exhibit #P1107

PIN # NO NUMBER
Date 16-Dec-83
Author ARVIN MASKIN
Addressee WITT, GRETCHEN LEAH
Description EXCERPTS FROM DECLASSIFIED RANCH HAND DOCUMENTS PRODUCED BY THE GOVERNMENT.

15425

Exhibit #P0009

PIN # 1079
Date 27-Dec-00
Author G P RUSSELL
Addressee MONSANTO COMPANY
Description Document requesting constant temperature control to reduce TDD.

Exhibit #P0017

PIN # 006005
Date
Author R EMMET KELLY M D
Addressee UNINTELLIGIBLE
Description Document referring to medical history of 2,4,5-T manufacturers.

Exhibit #P0018

PIN # 73256-62
Date
Author J AND K H KIMMIG SCHULTZ
Addressee UDELL, W
Description Kimmig & Schultz article translated 3/59 with copy sent to Udell. Title of said article is "Occupational Acne".

Exhibit #P0019

PIN # 1570-1577
Date
Author UNKNOWN UNKNOWN
Addressee UDELL?
Description HAND WRITTEN NOTES FROM FEBRUARY-AUGUST 1965 ENTITLED 2,4,5-T QUALITY NUMBERED 9-23-76001-2102 WITH PROBLEM AS REDUCTION OF CONCENTRATION OF CHLORACNAGENIC T.D.D. IN 2,4,5-T PRODUCT AND IMPROVEMENT OF COLOR OF PRODUCT.

15446

Exhibit #P0020

PIN # 1079,1068
Date
Author G P RUSSELL
Addressee NITRO
Description Document states in part that TDD can be reduced via the utilization of automatic temperature controls in the autoclaves. The manual controls are "very crude" and permits variations of plus and minus 4 degrees while the auto control will limit this to plus or minus 1 degree.

Exhibit #P0021

PIN # 46112-13
Date
Author UNKNOWN UNKNOWN
Addressee UNKNOWN
Description Page 3 & 4 of 16, Professional and Technical Personnel Required.

Exhibit #P0022

PIN # 73992
Date
Author JAMES M REA
Addressee SIDO, G ROBERT
Description 2,4-D/2,4,5-T Butyl Esters, USDA Reg. No. 524-150. Your application of April 8, 1970, is the subject of this document.

Exhibit #P0023

PIN # 89678-92
Date
Author JUDITH A ZACK ET AL
Addressee UNKNOWN
Description The Mortality Experience of Workers to Tetrachlorodibenzodioxin in a Trichlorophenol Process Accident. Draft of Dr. Suskinds mortality study.

15447

Exhibit #P0024
PIN # 88248-51
Date
Author JUDITH A ZACK ET AL
Addressee UNKNOWN
Description The Mortality Exerience of Workers Exposed to Tetrachlorodibenzodioxin in a Trichlorophenol Process Accident.

Exhibit #P0044
PIN # 4872
Date 14-Sep-48
Author M C MCKONE
Addressee R L SIBLEY & W G KRUMRICH
C A HOCHWALT & D J BEAVER
SCOTT-RUABON & FILE COPY
Description Final Report on 2,4,5-T dated 9/14/48.

Exhibit #P0046
PIN # 71386
Date 23-May-49
Author C J MCKONE
Addressee W G KRUMMRICH & DR D J BEAVER
P G MARSH & H R NASON
DR R L SIBLEY & DR W P METZER
Description Interim Report on an Investigation of the 2,4,5- Trichlorophenol Process. Nitro Report No. ?107 dated May 23, 1949.

Exhibit #P0048
PIN # 042220
Date 16-Aug-49
Author LOUIS SCHWARTZ M D
Addressee (?) C. NELSON
Description Document discusses medical descriptions of individuals affected by the Nitro incident of 1949.

15448

Exhibit #P0053

PIN # 73928
Date 01-Mar-50
Author J CRESCE
Addressee 2,4,5-T EMPLOYEES
Description Hygiene requirements in 2,4,5-T plant is the subject of this document.

Exhibit #P0055

PIN # 74618-42
Date 30-Jan-51
Author G ROBERT SIDO
Addressee DEPT OF AGRICULTURE
Description Registration of 2,4,5-T with U.S.D.A. is the subject of this document.

Exhibit #P0056

PIN # 75359
Date 02-Apr-51
Author F V REAGEL
Addressee MONSANTO CHEMICAL CO
Description User of 2,4,5-T developed health condition working at Missouri State Highway Department.

Exhibit #P0057

PIN # 75360
Date 09-Apr-51
Author R EMMET KELLY M D

Addressee F V REAGEL
Description Letter indicating that injury related to 2,4,5-T use was unrelated.

15449

Exhibit #P0058

PIN # 33391
Date 03-Jan-52
Author WILLIAM F ASHE M D
Addressee DR HORACE D DAVIDSON
Description Letter requesting liver biopsy of Jessie Steele from Dr. Wallace.

Exhibit #P0059

PIN # 42047
Date 03-Mar-52
Author XYZ BOWLES
Addressee VIRGINIA WEBB
Description Document refers to list of 119 employees injured at Nitro in 1949.

Exhibit #P0060

PIN # 1771
Date 08-Aug-52
Author W H AND E A SEATON AND FIKE
Addressee L C WEGER & M C THRODAHL
W P METZNER & R L SIBLEY
OTHER EMPLOYEES
Description Nitro Progress Report regarding atmospheric pressure hydrolysis of TCB and TCP.

Exhibit #P0062

PIN # 1587-89
Date 07-Nov-52
Author E A FIKE
Addressee DR W P METZNER & DR G W STEAHLY
Description Proposal that TCP be distilled as a means of reducing toxicity.

15450

Exhibit #P0063

PIN # 1580-86
Date 17-Nov-52
Author W G CANHAM
Addressee W A GARLETTE JR & L C WEGER
H G KIRTLEY & E R HAMILTON
E G VOLZ

Description Minutes of Meeting November 11, 1952 - Sodium Trichlorophenate Purification with the hopes of reducing toxicity was the subject of the document.

Exhibit #P0065

PIN # 41815
Date 03-Jun-53
Author H H SCHRENK PH D
Addressee MR. SMITH

Description Document referring to report on rabbit-ear chloracne tests utilized prior to June 1953.

Exhibit #P0066

PIN # 4675-80
Date 13-Oct-53
Author H L HUBBARD ET AL
Addressee UNKNOWN

Description Final report on Minor Plant investigation 1952 through 1953 is the title of this document.

Exhibit #P0068

PIN # 71194-222
Date 24-Nov-53
Author T R BOCH
Addressee NITRO INDIVIDUALS

Description Process Description For The Manufacture of 2,4,5-T in Department 57.

15451

Exhibit #P0069
PIN # 71223-66
Date 03-Dec-53
Author L P HARICH ET AL
Addressee NUMEROUS PERSONNEL
Description Process Description for The Manufacture of Sodium 2,4,5-Trichlorophenate in Department 64 Building 51.

Exhibit #P0070
PIN # 73930
Date 07-Jan-54
Author J CRESCE
Addressee BILLY HICKS ET AL & LISTED EMPLOYEES
Description Memo notifying 32 workers that they will be layed off unless an adequate number of 2,4,5-T employees can be obtained.

Exhibit #P0072
PIN # 75409-38
Date 01-Dec-54
Author D P CLAYPOOL ET AL
Addressee J CRESCE & C M EAKER
R E HOWARD & VARIOUS OTHERS
Description Final Report On 2-(2,4,5-Trichlorophenoxy) Propionic Acid dated 12/1/54.

Exhibit #P0075
PIN # 74597-
Date 05-Jul-55
Author MONSANTO CO
Addressee UNKNOWN
Description Numerous 2,4,5-T Butyl Ester Brush Killer Labels.

15452

Exhibit #P0076
PIN # 74530-91
Date 05-Jul-55
Author COMPANY MONSANTO
Addressee UNKNOWN
Description 2,4,5-T Butyl Ester B.K. Registration No.
524-83.

Exhibit #P0082
PIN # 42170-73
Date 18-Nov-55
Author L C WEGER
Addressee SODEN, R. & MCCLAIN, J R
KELLY MD, R E
Description Letter discussing in part psychoneurosis
amongst Nitro workers dated 11/18/55.

Exhibit #P0084
PIN # 21663-68
Date 13-Dec-55
Author R A MURIE
Addressee LESSLIE, T E & ROARK, J N
SOLSTEN, R T & STEAHLEY, G W
Description Method of analysis for 2,4,5-T BE Ester.

Exhibit #P0086
PIN # 22986-87
Date 16-Feb-56
Author R W WISE
Addressee GEISMAN, R A & EDWARDS, P W
LUECKE, C P & LESSLIE, T E
Description Method of analysis for the purpose of
determining sodium 2,4,5-T in 2,4,5-T acid.

15453

Exhibit #P0089

PIN # 73926
Date 13-Apr-56
Author T R BOCH
Addressee UNKNOWN
Description Document lists total number of workers and number of chloracne cases since January 1953 in the Monsanto plant.

Exhibit #P0090

PIN # 41652-42177
Date 13-Apr-56
Author NONE NONE
Addressee NONE
Description Transcript of Workmens Compensation Hearing of Louis Hallman, individual injured in the Nitro incident in 1941.

Exhibit #P0091

PIN # 5867-69
Date 12-Jun-56
Author ELMER P WHEELER
Addressee KELLY, R EMMET & NASON, H K
SODEN, R E & WEGGER, L C
Description Letter discusses meeting with German scientist, Dr. Oettel, wherein it was discussed that the Germans exposed in the 1953 Badische incident had similar symptoms as the Nitro workers, i.e., fatigue, vertigo, loss of libido, painful joints, etc.

Exhibit #P0092

PIN # 75448-73
Date 11-Sep-56
Author T E LESSLIE ET AL
Addressee NUMEROUS MON. EMP.
Description Study of prepn. of 2-butoxyethyl 2,4,5-trichlorophenoxyacetate from the reaction of sodium trichlorophenate with 2-butoxyethyl chloroacetate is described.

15454

Exhibit #P0097

PIN # 77-80
Date 03-May-57
Author J AND K H KIMMIG SCHULTZ
Addressee LUECKE & SILVERSTEIN
TRAPP & OTHER

Description Rough draft translation of the 1957 Kimmig and Schultz article.

Exhibit #P0098

PIN # 65551
Date 13-Jun-57
Author L P HARICH
Addressee MCCLAIN, J R & LUECKE, C F
CONWAY, C S & SHIFT FOREMAN

Description Document indicates in part that the 2,4,5-T Plant had a crew of 5 men.

Exhibit #P0101

PIN # 878-
Date 29-Jul-57
Author C H BOEHRINGER SOHN
Addressee DR. PRAHL

Description Partial translation of letter from C.H. Boehringer Sohn, on Hooker Electrochemical Company stationery, which identifies Dioxin in Tri-Chlorophenol. Said document further discusses the properties of Dioxin.

Exhibit #P0108

PIN # 71273-330
Date 06-Feb-58
Author L P HARICH ET AL
Addressee NUM. DEPTS. MONSANTO

Description Standard Manufacturing Process for 2,4,5-T Acid, revised 11/24/53.

15455

Exhibit #P0114

PIN # 1836-1891
Date 30-Jul-58
Author L HARICH
Addressee NITRO RESEARCH ET AL
Description PAPER DESCRIBES STANDARD MANUFACTURING PROCESS FOR SODIUM 2,4,5-TRICHLOROPHENATE - CONSISTS OF 56 PAGES IN DATA SHEETS, EXHIBITS AND APPENDICES. NOTED IN PAPER THAT SODIUM TCP PRODUCES A FORM OF DERMATITIS KNOWN AS CHLORACNE AND THAT CARE MUST BE TAKEN TO AVOID CONTACTING SOLUTION OR HOT VAPORS OF THE SOLUTION. ALSO NOTED AS A CORROSIVE MATERIAL.

Exhibit #P0118

PIN # 73736
Date 25-Mar-59
Author PAUL N BIVEN
Addressee NONE
Description Specifications for 2,4,5-T Acid.

Exhibit #P0119

PIN # 73065
Date 01-May-59
Author JOHN RODDY
Addressee STARRETT
Description ATTORNEY FROM WAUSAU INSURANCE COMPANY OF WISCONSIN REQUESTS INFORMATION REGARDING THE TOXICITY OF 2,4-D AND 2,4,5-T AS AN EMPLOYEE ALLEGED SPRAYING OF THESE CHEMICALS ADVERSELY AFFECTED HIM. REQUEST PERTAINS TO ANY DATA, PAMPHLETS OR OTHER REFERENCES REGARDING CHEMICALS AND THEIR EFFECTS ON HUMANS.

Exhibit #P0120

PIN # 73063
Date 06-May-59
Author J. Starrett
Addressee Kelly & Olcott
Zorsch
Description Letter requested that Dr. Kelly respond to letter of Roddy dated 01-May-59.

15456

Exhibit #P0121

PIN # 73064
Date 08-May-59
Author Emmett Kelly
Addressee Roddy & Olcott
Zorsch & Starrett

Description Kelly responded that they had not been encountered any clinical evidence of injury to their employees.

Exhibit #P0122

PIN # 5695
Date 12-May-59
Author L WEGER
Addressee WHEELER
Description Letter states that John Burton of Diamond Alkali had seen the article on chloracne by Kimming and Schultz while in Germany in Dermatologica 1957. Weger stated that a translated copy will be available upon request.

Exhibit #P0123

PIN # 0
Date 01-Jun-59
Author L WEGER
Addressee WHEELER
Description Letter confirms that Diamond Alkali is in receipt of German Article on Choracne.

Exhibit #P0125

PIN # 5693
Date 16-Jun-59
Author ELMER WHEELER
Addressee WEGER
Description Acknowledges receipt of German Article on Chloracne and translation acknowledges translation thereof, chlorinated dibensedioxine acknowledged as an important causing agent of the disorder.

15457

Exhibit #P0127

PIN # 33394
Date 14-Aug-59
Author UNKNOWN BLAGG ET AL
Addressee STUBBS & WORK COMP

Description Letter attached to brief of Monsanto's regarding Workmen's Compensation cases of the 2,4,5-T manufacturers.

Exhibit #P0131

PIN # 2210-11
Date 14-Jan-60
Author M A TERPSTRA
Addressee BROWN, R T & CROUCH, J L
GEISMAN, R A & HUBBARD, H L

Description Document deals with what should be done with "off-quality" 2,4,5-T.

Exhibit #P0133

PIN # 19470-475
Date 23-Feb-60
Author G W OLSEN
Addressee VARIOUS INDIVIDUALS & NITRO
RESEARCH & GENERAL OFFICE
OTHER

Description Procedure to expand 2,4,5-T production capacity from 175,600 lbs. per month to 3.2 million lbs. per month.

Exhibit #P0134

PIN # 18982-87
Date 16-Mar-60
Author L C WEGER
Addressee MILLER, R L & EKBERG, J B
EDWARDS, P W & COHN, L A
OTHERS

Description Trip report to the Diamond Alkali Company for the purpose of investigating the 1960 Diamond Alkali incident.

15458

Exhibit #P0135

PIN # 18998
Date 29-Mar-60
Author L P HARICH
Addressee EDWARDS, P W & STEAHLY, G W
WEGER, L C & HINCHCLIFF, W B
GALLOWAY, H M
Description Meeting recommendations resulting from Weger's investigation of the Diamon Alkali incident and what could be done to avoid a reoccurrence.

Exhibit #P0136

PIN # 21377-79
Date 27-Apr-60
Author D L MANSFIELD
Addressee ROARK, J N & HINCHCLIFF, JR W B
Description 2,4,5-Trichlorophenol-Sodium Salt assay procedure.

Exhibit #P0138

PIN # 23156
Date 23-May-60
Author UNKNOWN UNKNOWN
Addressee VARIOUS EMPLOYEES
Description Butyl 2,4,5-Trichlorophenoxyacetate specs.

Exhibit #P0142

PIN # 76294-76350
Date 06-Jul-60
Author L P HARICH ET AL
Addressee TECHNCL SRVCS DEPT & PLANT MANAGER
DIRECTOR OF MFG. & DEPT. SUPERVISOR
DEPT. FOREMAN & NITRO RSRCH DPT LIBR
Description Standard Manufacturing Process for Sodium 2,4,5-Trichlorophenate in Department 817.35, written July 6, 1960, supercedes Standard Manufacturing Process Manual prepared by L.P. Harich July 30, 1958.

15459

Exhibit #P0143

PIN # 5971
Date 22-Jul-60
Author R EMMET KELLY MD
Addressee WALLACE MD, RICH & WEGER, L C
OTHER
Description Document indicating that there was to be a meeting 8/4/60 with Dr. Oettel, Dr. Susskind, Mr. Wheeler, and Dr. Kelly for the purpose of updating Monsanto's information regarding the German experiences.

Exhibit #P0146

PIN # 05024-41
Date 12-Aug-60
Author B O SEVERSON
Addressee THRODAHL, M C & ZERBE, R O
STEAHLY, G W & EDWARDS, P W
NITRO RSRCH LAB & OTHERS
Description Report on the 245-T engineering study of continous acidification and recovery of TCP.

Exhibit #P0147

PIN # 18967
Date 13-Oct-60
Author G W OLSEN
Addressee HARICH, L P & EDWARDS, R W
COHN, L A & HINCHCLIFF, W B
OTHERS
Description The document refers to a progress report dated 10/13/60 and refers to the need for a capacity increase in the NaTCP plant within the next two years.

Exhibit #P0148

PIN # 73773-77
Date 01-Nov-60
Author UNKNOWN UNKNOWN
Addressee FOR NITRO, W. VA
Description Standard Manufacturing Process for 2,4,5-T Acid dated November 1960, Nitro, W. Va. Document includes section on current problems and refers to the "wild Sod TCP batch" incident in Building 41. Also refers to increased resistance from all plant personnel to work assignments in either the Sod. TCP or 2,4,5-T departments.

15460

Exhibit #P0149

PIN # 1407-08
Date 01-Nov-60
Author NONE MAW
Addressee UNKNOWN
Description Document sets forth the analytical procedure in which one can determine the amount of TDD in 2,4,5-T.

Exhibit #P0150

PIN # 23225-30
Date 01-Jan-61
Author WILLIAM R UDELL
Addressee BARKLEY, L B
Description Progress Report from William R. Udell stating the need to find an economical route to 2,4,5-T Acid. Said document states project was initiated with the ultimate aim of reducing cost of manufacture of 2,4,5-T acid.

Exhibit #P0153

PIN # 19530-34
Date 03-Jan-61
Author M T WHITE JR
Addressee COHN, L A & HINCHCLIFF, W B
KELLOGG, W R & OLSEN, G W
STEAHLY, G W & OTHERS
Description Progress Report 2,4,5-T Capacity Increase dated January 3, 1961.

15461

Exhibit #P0155

PIN # 75773-77
Date 28-Jun-61
Author FRED M YOUNGER
Addressee MONSANTO CHEMICAL CO
Description Study from Younger Laboratories of CP 18443-(2) - O-Ethyl O-(2,4,5-trichlorophenyl) methylphosphonothionate, requested by Monsanto Chemical Company. Said study states that product was fed to Sprague-Dawley strain albino rats, male and female. Product was applied to New Zealand white rabbits, male and female. The compound was classed as highly toxic by oral ingestion in both female and male rats. Said document also states that compound was classed as highly to extremely toxic by skin absorption in female rabbits and compound was classed as highly toxic by skin absorption in male rabbits.

Exhibit #P0156

PIN # 73908-09
Date 28-Aug-61
Author C M RUSSELL
Addressee STITES, J & ROARK, J W
BARKLEY, L B & LUECKE, C F
WEBBER, R T & OTHERS
Description Letter from Russell providing stites with 2,4,5-T acid specifications.

Exhibit #P0158

PIN # 51851-59
Date 27-Nov-61
Author RESEARCH LAB DOW CHEMICAL
Addressee UNKNOWN
Description Results of 90-day Dietary Feeding Studies of Dowanol 97B Ester 2,4,5-T in Rats.

15462

Exhibit #P0159

PIN # 21391
Date 13-Dec-61
Author C H RUSSELL
Addressee ROARK, J N
Description Separation and Identification of 2,4-D and 2,4,5-T Acid by Paper Chromatography.

Exhibit #P0160

PIN # 22268
Date 01-Jan-62
Author A J BURNS ET AL
Addressee STEPHENS, J A & LUECKE, C F
RUSSELL, C H
& COPANAS, F W
WISE, W R & KOLLOFF, R H

Description The Analysis of Sodium 2,4,5-Trichlorophenate by Gas Liquid Chromatography.

Exhibit #P0164

PIN # M0148
Date 05-Apr-62
Author R EMMET KELLY MD
Addressee EDWARDS, PAUL W
Description Document discusses the general disregard of worker hygiene. Document also discusses medical implications which might occur as a result of same.

Exhibit #P0165

PIN # 828
Date 10-May-62
Author F M CALKINS
Addressee WEBBER, R T & LUECKE, C F
HINCHCLIFF, W & HARICH, L P
STICKLEY, J F & NUMEROUS OTHERS
Description DEVELOP NEW CAPITAL REQUIREMENTS, CAPACITY, AND MANUFACTURING COST DATA FOR 2,4,5-T ESTER MANUFACTURE IN THE BUILDING 46 AVADIX EQUIPMENT.

15433

Exhibit #P0167

PIN # 73068
Date 15-May-62
Author L EDWARD GAUL MD
Addressee MONSANTO CHEMICAL CO
Description Letter dated May 15, 1962 from Dr. L. Edward Gaul to Monsanto Chemical Company. Said document states patient complained after using Brush Killer, 2,4-D, 2,4,5-T.

Exhibit #P0168

PIN # 21544
Date 29-May-62
Author C H RUSSELL
Addressee ROARK, J K & LUECKE, C F
COPON??, ? W
Description Russell's letter to Roark in which Dow's infrared method for analyzing 2,4,5-T was discussed.

Exhibit #P0169

PIN # 62976-90
Date 01-Jun-62
Author F B MATTHEWS ET AL
Addressee LUECKE, C F & KUHN, W A
MATTHEWS, F B & ST LOUIS RESEARCH
VITAL RECORDS CNTR & VARIOUS OTHERS
Description Process Description for the Manufacture of Isobutyl 2,4,5-T in Dept. 268.

Exhibit #P0170

PIN # 62926-54
Date 01-Jun-62
Author F B MATTHEWS ET AL
Addressee LUECKE, C F & KUHN, W A
RUMER, R R & MATTHEWS, F B
VITAL RCRDS CNTR & VARIOUS OTHERS
Description Process Description for the Manufacture of Butyl 2,4,5-T in Dept. 268 (894.12) (June, 1962).

15404

Exhibit #P0172

PIN # 24598-24642
Date 26-Jun-62
Author J T PEBWORTH
Addressee UNKNOWN
Description Standard Manufacturing Process for Sodium 2,4,5-Trichlorophenate in Department 895.06. Standard Manufacturing Process Manual prepared by L.F. Harich, July 6, 1960, revised June 26, 1962 by J.T. Pebworth. Document states the Sodium TCP solution produced contains chemical compounds known as "chloracnegens."

Exhibit #P0173

PIN # 76236-41
Date 26-Jun-62
Author J T PEBWORTH
Addressee UNKNOWN
Description Standard Manufacturing Process For Sodium 2,4,5-Trichlorophenate In Department 895.06 dated June 26, 1962, revises Standard Manufacturing Process Manual prepared by L.P. Harich dated July 6, 1960.

Exhibit #P0174

PIN # 1778-1835
Date 26-Jun-62
Author J T PEBWORTH
Addressee DEPT. SUPERVISOR & DEPT. FOREMAN
TECHNICAL SRVCS LIBR & VARIOUS OTHERS
Description Standard Manufacturing Process for Sodium-2,4,5-Trichlorophenate In Department 895.06, revises Standard Manufacturing Process Manusl prepared by L.P. Harich July 6, 1960.

15465

Exhibit #P0176

PIN # 76242-93
Date 01-Jul-62
Author J T PEBWORTH
Addressee PROD. SUPERVISOR & PRODUCTION FOREMAN
TECHNICAL SRVS DEPT. & NITRO RSRCH LIBRARY
DIRECTOR OF MFG. & OTHERS

Description Standard Manufacturing Process for 2,4,5-T
Acid Department 57.

Exhibit #P0177

PIN # 24664-714
Date 01-Jul-62
Author J T PEBWORTH
Addressee UNKNOWN
Description Standard Manufacturing Process for 2,4,5-T
Acid in Nitro Dept. 57. Includes finished
product specifications, physical constants
data, and matters relating to safety and
toxicity.

Exhibit #P0179

PIN # 74217-19
Date 02-Aug-62
Author G ROBERT SIDO
Addressee LABELING FILE
Description Letter from Sido about 2,4,5-T Amine Brush
Killer labels.

Exhibit #P0192

PIN # 32308
Date 02-Jan-63
Author H E WEBB JR
Addressee BOWLES, P N
Description Employee discussed was R.E. Adkins in
regard to award being high considering the
alleged degree of disability. Webb
inclined to leave award as is.

15466

Exhibit #P0195

PIN # 24660-61
Date 14-Jan-63
Author J T PEBWORTH
Addressee EDWARDS, P. W. & COPANAS, F. W.
GORDON, R. S. & STEPHENS, J. A.
SOLSTEN, R. T. & OTHERS

Description Tentative Amendment F to Standard Manufacturing Process for 2,4,5-T Acid contains an objective permitting the use of spent acid from the TCP recovery step.

Exhibit #P0197

PIN # 24658-59
Date 23-Jan-63
Author J T PEBWORTH
Addressee EDWARDS. P. W. & COPANAS, F. W.
RUMER, R. R. & GORDON, R. S.
STEPHENS, J. A. & OTHERS

Description Tentative Amendment G to Standard Manufacturing Process for 2,4,5-T Acid with objective of permitting the use of acid filtrate to partially acidify the TCP in the recovery step. The proposal calls for a 60 day test period.

Exhibit #P0198

PIN # 73051
Date 29-Jan-63
Author R EMMET KELLY MD
Addressee BAVER DR., L D & HANNAH, L H

Description Document discusses pentachlorophenol causing chloracne in Europe and reports of acute intoxication with reports of death using pentachlorophenol in Borneo as well as France and Mexico.

Exhibit #P0200

PIN # 247-48
Date 08-Feb-63
Author C RUSSELL
Addressee ARVAN

Description Document acknowledges that Russell worked out tentative specifications for the Government. A meeting was to be held with Mr. Pearson on February 18, 1963.

15467

Exhibit #P0202

PIN # 241-43
Date 22-Feb-63
Author C H RUSSELL
Addressee HOFFMAN, DR & ARVAN DR., P G
DANIELS, S D & KUHN, W A
LUECKE, C F & MATTHEWS

Description 2/8/63 meeting, Russell & Bourland, U.S. Army Biological Laboratories. Purpose was to satisfy U.S. Army about specs & physical properties on next type of blend they will be purchasing, normal butyl D and normal butyl T.

Exhibit #P0238

PIN # 21754-55
Date 09-Jul-63
Author R KOLLOFF
Addressee ROARK, J & COPANAS
CANOBEKK & KUECKE
RUSSELL & STEPHENS, J A

Description GLC Analysis of 2,4,5-TCP & 2,4,5-T acid.

Exhibit #P0245

PIN # 63998-64076
Date 01-Aug-63
Author R A VODER
Addressee WEBBER, R. T. & YODER, R. A.
LUECKE, C. F. & PEBWORTH, J. T.
STEPHENS, J. H. & OTHERS

Description 2,4,5-T plant expansion at Nitro BLdg. 92 is the subject of this document. The document addresses the need for a major increase in production of 2,4,5-T for a month.

Exhibit #P0249

PIN # ILLEGIBLE
Date 04-Oct-63
Author UNKNOWN UNKNOWN
Addressee UNKNOWN
Description Product label registration record for 2,4-D/2,4,5-T Butyl Ester Brush Killer.

15468

Exhibit #P0250

PIN # 18782-83
Date 10-Oct-63
Author P W EDWARD
Addressee DIR OF MFG & COVERT, M. C.
EDWARDS, P. W. & RUMER, R. R.
LUECKE, C. F. & OTHERS

Description Document makes reference to a request for agitation in NaTCP storage tank for the purpose of keeping undissolved salts in suspension, thereby eliminating problems of cleaning out accumulated salts and inaccurate inventory of NaTCP.

Exhibit #P0252

PIN # 24654-57
Date 05-Nov-63
Author F M CALKINS
Addressee STEPHENS J. A. & PEBWORTH, J. T.
COPANAS, F. W. & SPEZIALE, A. J.
EDWARDS, P. W. & UNKNOWN OTHERS

Description Tentative Amendment H to Standard Manufacturing Process for 2,4,5-T Acid with objective of exploring effect on 2,4,5-T yield, quality, and cost of the condensation reactor variables.

Exhibit #P0254

PIN # 65436
Date 25-Nov-63
Author F W COPANAS
Addressee CALKINS, F. M. & PEBWORTH, J. T.
LUECKE, C. F. & EDWARDS, P. W.
HINCHCLIFF, W. B. & OTHERS

Description Document advising that there is 200,000 lbs. of "out of spec" 2,4,5-T.

15469

Exhibit #P0258

PIN # 004756-85
Date 10-Dec-63
Author W R UDELL
Addressee SPEZIALE, A. J. & WALDO, W. H.
STEPHENS, J. A. & CONNAUGHTON, J. M.
LUECKE, C. F. & OTHERS

Description Literature survey-review of 2,4,5-T Acid process includes physical constants data of 12/10/63 for 2,4,5-T and NaTCP.

Exhibit #P0259

PIN # 65437-38
Date 11-Dec-63
Author M T WHITE
Addressee LUECKE, C. F. & EDWARDS, P. W.
KELLOGG, W. R. & PEBWORTH, J. T.
CALKINS, F. M. & OTHERS

Description It is proposed that 200,000 lbs. of out-of-spec. 2,4,5-T be reworked in the old 2,4,5-T Dept. in Bldg. 34.

Exhibit #P0260

PIN # 74211
Date 18-Dec-63
Author G R SIDO
Addressee LABELING FILE & HOFFMAN, P. R.
RUSSELL, C. H. & SAMAHA, D.

Description Document confirming conversation with Russell and Hoffman regarding text of label for 2,4-D/2,4,5-T Amine Brush Killer (USDA Registration 524-99 dated 12/16/57).

Exhibit #P0264

PIN # ILLEGIBLE
Date 15-Jan-64
Author UNKNOWN UNKNOWN
Addressee UNKNOWN

Description Product Label Registration Record for 2,4,5-T Butyl Ester Brush Killer, consisting of 37.5% isobutyl ester of 2,4,5-T trichlorophenoxyacetic acid, 15.3 % n-Butyl ester of 2,4,5-Trichlorophenoxyacetic acid, and 47.2 % inert ingredients.

15470

Exhibit #P0265
PIN # 054547
Date 15-Jan-64
Author UNKNOWN UNKNOWN
Addressee UNKNOWN
Description PRODUCT LABEL REGISTRATION RECORD FOR
2,4,5-T ACID REPLACES RECORD OF OCT 1963.

Exhibit #P0266
PIN # 054549
Date 15-Jan-64
Author UNKNOWN UNKNOWN
Addressee UNKNOWN
Description PRODUCT LABEL REGISTRATION RECORD FOR
2,4,5-T AMINE BRUSH KILLER REPLACES RECORD
OF OCT 1963.

Exhibit #P0267
PIN # ILLEGIBLE
Date 15-Jan-64
Author UNKNOWN UNKNOWN
Addressee UNKNOWN
Description PRODUCT LABEL REGISTRATION RECORD FOR
BRUSH-O-CIDE BRUSH KILLER REPLACES RECORD
OF OCT 1983. BRUSH-O-CIDE'S ACTIVE
INGREDIENTS INCLUDE 46.6% ISOCTYL ESTER OF
2,4-DICHLOROPHENOXYACETIC ACID AND 44.5%
ISOCTYL ESTER OF TRICHLOROPHENOXYACETIC
ACID, WITH 8.9% OF THE PRODUCT CONSISTING
OF INERT INGREDIENTS.

Exhibit #P0268
PIN # 054554
Date 15-Jan-64
Author UNKNOWN
Addressee UNKNOWN
Description PRODUCT LABEL REGISTRATION RECORD FOR
BRUSH-BLITZ BRUSH KILLER REPLACES RECORD OF
OCT 1963. 88% OF INGREDIENTS IN
BRUSH-BLITZ BRUSH-BLITZ IS AN ISOCTYL ESTER
OF 2,4,5-TRICHLORO-PHENOXYACETIC ACID AND
12% INERT INGREDIENTS.

15471

Exhibit #P0269

PIN # 21697
Date 29-Jan-64
Author C H RUSSELL
Addressee ROARK, J. N. & LUECKE, C. F.
HOFFMAN, P. F. & CONNAUGHTON, J. M.

Description RUSSELL SENDING J.N. ROARK AT NITRO A SAMPLE OF 2,4,5-T ACID MADE BY HERCULES BECAUSE MONSANTO IS CONSIDERING PURCHASING SOME TO MAKE UP FOR DEFICIENCIES DUE TO DIFFICULTIES AT NITRO. RUSSELL ASKED THAT THE 2,4,5-T ACID BE ASSAYED USING "OUR TRADITIONAL METHODS" AND STRESSES THAT THE REQUEST IS URGENT.

Exhibit #P0270

PIN # 21695
Date 07-Feb-64
Author J N ROARK
Addressee RUSSELL, C. H. & CONNAUGHTON, J. M.
RINCHELIF, W. B. & HOFFMAN, P. F.
LUECKE, C. F.

Description ANALYSIS OF HERCULES 2,4,5-T ACID SAMPLE #B-1-12464 SHOWS LEVELS OF 1.3% TCP AND 90.3% 2,4,5-T AS COMPARED WITH .2% TCP AND 93.4% 2,4,5-T BEING TYPICAL IN MONSANTO'S PRODUCT." "THERE IS A CONSIDERABLE AMOUNT OF LUMPY MATERIAL IN THIS PRODUCT, CECIL."

Exhibit #P0283

PIN # 64955-65037
Date 01-Apr-64
Author L E DOTSON
Addressee UNKNOWN

Description SECTIONS OMITTED INCLUDE: 10) OPERATION OF T-ACID RECOVERY SYSTEMS; 2) DETAILED OPERATIONS FOR TCP RECOVERY SYSTEM; AND 3) DETAILED OPERATIONS FOR T-ACID RECOVERY SYSTEM. ALSO, PART OF SECTION ENTITLED; OPERATION OF TCP RECOVERY SYSTEM, IS OMITTED. THE AFOREMENTIONED WAS INADVERTENTLY NOT SUPPLIED TO PLAINTIFFS BY DEFENDANTS.

15472.

Exhibit #P0286
PIN # 21987
Date 14-Apr-64
Author F L RUPEL
Addressee RUSSELL, C. H. & LUECKE, C. F.
CONNAUGHTON, J. M. & ROARK, J. N.
STEPHENS, J. A.
Description Document lists an analysis of Dow's
2,4,5-T.

Exhibit #P0291
PIN # 010667
Date 01-May-64
Author CHARLES P ZORSCH
Addressee DEF FUEL SUPP CENT & FILE
Description Document describes modifications of Agent
Orange specifications.

Exhibit #P0292
PIN # 21385
Date 13-May-64
Author D L MANSFIELD
Addressee RUMER, R. R. & RUSSELL, C. H.
ROARK, J. N. & CONNAUGHTON, J. M.
KELLOGG, W. R. & OTHERS
Description Document discusses need to recover 2,4,5-T
in Nitro's production process. It is
estimated that approximately 1,000/lbs per
day was being lost.

Exhibit #P0295
PIN # 055514
Date 28-May-64
Author ILLEGIBLE ILLEGIBLE
Addressee RESEARCH NOTES
Description USEFULNESS OF RESEARCH NOTES SHOWING
ANALYSIS OF 2,4,5-T IS UNCLEAR.

15473

Exhibit #P0300

PIN # 010782-83
Date 04-Jun-64
Author C F LUECKE
Addressee PAYTON & HOFFMAN, P. F.
KAMENKO & CONNAUGHTON, J. M.

Description Document advises that Hooker does not have TCB and cannot comply with their old schedule of production.

Exhibit #P0302

PIN # 010784
Date 05-Jun-64
Author CARL SCHUMACHER
Addressee TIPPEE, H. W. & HOFFMAN, P. F.
LUECKE, C. F. & ZORSCH, C. P.
DYKSTRA, R. A. & OTHERS

Description BOB DYKSTRA CALLED SCHUMACHER AND SAID HE COULD BEGIN PRODUCING 2,4,5-T ESTERS FOR MONSANTO ON A FIVE DAY A WEEK BASIS STARTING JUNE 11.

Exhibit

Exhibit #P0307

PIN # 010683-84
Date 25-Jun-64
Author C P ZORSCH
Addressee FILE & SCHUMACHER, C. P.
LUECKE, C. F. & HOFFMAN, P. F.
MCCARVILLE, W. J. & OTHERS

Description Contract for Governmental purchase of 48,950 gallons of a product containing 50% 2,4-D N-Butyl Ester; 30% 2,4,5-T N-Butyl Ester; and 20% 2,4,5-T Iso-Butyl Ester.

• 15474

Exhibit #P0315

PIN # 008255-57
Date 01-Aug-64
Author UNKNOWN UNKNOWN
Addressee UNKNOWN
Description Label for 2,4,5-T acid.

Exhibit #P0316

PIN # ILLEGIBLE
Date 12-Aug-64
Author UNKNOWN UNKNOWN
Addressee KRUMMRICH PLANT & OTHERS UNKNOWN
Description GAS-LIQUID CHROMATOGRAPHIC PROCEDURE FOR DETERMINING THE COMPOSITION OF THE ESTER ALONE OR IN A MIXTURE WITH ONE OR MORE OF THE ESTERS.

Exhibit #P0324

PIN # 046115-21
Date 01-Oct-64
Author R M DICKEY
Addressee COLLERAN, W. E. & COMERFORD, D. G.
EASLEY, K. W. & EBY, C. J.
LINXWEILER, T. G. & OTHERS
Description DEFOLIANT SYNTHESIS MODIFICATION NO.3 TO CONTRACT NO. DA18-0648.064.AMC.69(A).

Exhibit #P0327

PIN # 2623-26
Date 20-Oct-64
Author FRED YOUNGER
Addressee MONSANTO
Description Study performed by the Younger Lab regarding the toxic effects of TCP Distillation Residue. Study dealt with rabbits and it was discovered that four of the six tested died within 4-8 weeks. Jaundiced livers were noted as well as renal congestion.

15475

Exhibit #P0329

PIN # 73242-73249
Date 22-Oct-64
Author WILLIAM H HUNT PHD
Addressee STEPHENS, J A & LUECKE, C F
UDELL, W R & NUMEROUS OTHERS

Description Circulation of study referred to in document #2700, the rabbit study done by the Younger Lab showing their death when exposed to TCP distillation residue. Document also contains a comparison chart to other compounds.

Exhibit #P0332

PIN # 460
Date 24-Nov-64
Author C H RUSSELL
Addressee CARTY, C W & ZORSCH, CP
HOFFMAN, P F

Description Document whereby Russell informs the Army that the Government specs are identical to Monsanto's "official specification".

Exhibit #P0349

PIN # 20696
Date 06-Jan-65
Author J STRUM
Addressee SPRINGGATE & KELLOGG
HAMILTON & BRICK
SOLSTEN & PRITCHARD ET AL

Description PROGRESS REPORT ON ATTEMPT TO INCREASE NITRO PLANT CAPACITY OF PRODUCTION OF 2,4,5-T FROM 400,000 LBS. PER MONTH TO 500,000 LBS. PER MONTH TO MEET SALES COMMITMENTS. RECOMMENDATION OF INSTALLATION OF A SURGE HOPPER AND A VARIABLE-SPEED FEEDER TO ELIMINATE PROCESS DOWNTIME.

15476

Exhibit #P0350

PIN # 9815-9816
Date 08-Jan-65
Author UNKNOWN UNKNOWN
Addressee COMMANDER & DEFENSE
GENERAL & SUPPLY
CENTER

Description CONFIDENTIAL MESSAGE ON FORM TO COMMANDER
OF DEFENSE GENERAL SUPPLY CENTER IN
RICHMOND, VA. MESSAGE SETS FORTH PURITY
LEVELS FOR A 50/50 BLEND OF 2,4-D AND
2,4,5-T, DATE OF DELIVERY, AMOUNTS, PRICES.

Exhibit #P0377

PIN # 5972-73
Date 24-Feb-65
Author R EMMET KELLY MD
Addressee FILE & WHEELER E P

Description Memo of conversation between Kelly and Roe
whereby Kelly was advised that the
contaminant in 2,4,5-T was dioxin.

Exhibit #P0392

PIN # 000229
Date 11-Mar-65
Author CARL SCHUMACHER
Addressee HOSTETTER

Description COVER LETTER AND MEMO REGARDING GOVERNMENT
BIDS FOR 50/50 2,4 D AND 2,4,5 T BLENDS AND
MOSANTO'S POSITION REGARDING ACCEPTANCE OF
BIDS BASED ON SUCH VOLUME.

Exhibit #P0396

PIN # 73255
Date 17-Mar-65
Author EMMETT KELLY
Addressee STEPHENS & HOFFMAN

Description Warning letter regarding 2,3,7,8-
tetrachlorodibenzyl- dioxin received from
the DOW CHEMICAL COMPANY. Therein it is
claimed that DOW had thought it to be the
"... most toxic compound they have ever
experienced."

15477

Exhibit #P0419

PIN # 72054
Date 30-Mar-65
Author EMMETT KELLY
Addressee HOFFMAN & ARVAN
DUNLAP & RUMER

Description LETTER DESCRIBES MEETING BETWEEN DOW, HOOKER, DIAMOND, HERCULES AND OTHERS OF REGARDING THE CONTENT OF DIOXIN IN DOW'S 2,4,5-T ACID. AUTHOR AGREES THAT DIOXANE IS "... A POTENT CONTAMINANT." ALSO THAT "...IT CAN BE A POTENT CARCINOGEN." HE ALSO VOICED CONCERN ABOUT ANOTHER EPIDEMIC OCCURRING AT NITRO.

Exhibit #P0422

PIN # 5983
Date 01-Apr-65
Author E WHELLER
Addressee FRAWLEY
Description COVER LETTER ENCLOSING ARTICLE ENTITLED "OCCUPATIONAL ACNE" BY KIMMING AND SCHULTZ. AND OTHER FILES ON THE SUBJECT IN CONTROL OF AUTHOR.

Exhibit #P0439

PIN # 20824-20828
Date 07-Jun-65
Author R NULL
Addressee SPRINGGATE, ET AL
Description PROGRESS REPORT ON 2,4,5-T TO NITRO PLANT OFFICIALS AND OTHERS REGARDING RIGID QUALITY IMPROVEMENT. PROGRAM.

Exhibit #P0456

PIN # 75614-75635
Date 13-Sep-65
Author S NORBERT SIDE
Addressee ROBERT ELKINS & JACKSON
KELLY & HOLT
O'FARRELL
Description COVER LETTER REGARDING WARNING LABELS TO BE AFFIXED ON PRODUCT FOR WEED & BRUSH CONTROL THAT CONTAIN 2,4-D AND 2,4,5-T.

15478

Exhibit #P0458

PIN # 1564-1569
Date 14-Sep-65
Author W UDELL
Addressee TAKE & DUNLAP
STEPHENS & SHARP

Description MEMO FROM AGRICULTURAL RESEARCH-ST. LOUIS TO NITRO PLANT REGARDING FORMATION AND CONCENTRATION OF TDD WITH ATTACHED GRAPHS. MEMO NOTES RECENT INCREASE IN TDD FORMATION AND STATES THAT A DETAILED LABORATORY STUDY IS IN THE PLANNING STAGES AND SHOULD REVEAL REASONS FOR RECENT INCREASES IN FORMATION.

Exhibit #P0468

PIN # 8223-8226
Date 22-Dec-65
Author ROBERT BRANDON
Addressee KUHN & LANDWEHR
TRAIL & TAKE

Description MEMO REGARDING VIABILITY OF EXPANDING THE NITRO 2,4,5-T PLANT. SEEK ADDITIONAL TESTING TO BE DONE IN ORDER TO DETERMINE THE EFFECT OF PARTICLES IN AIR LEAVING THE DRYING SYSTEM.

Exhibit #P0470

PIN # 76884-76888
Date 30-Dec-65
Author L DOTSON
Addressee UNKNOWN

Description MANUFACTURING AND PROCESS DATA REGARDING TOXICITY OF 2,4,5-T WITH ATTACHED CHARTS AND GRIDS. WARNING THAT EXTREME CARE MUST BE USED IN HANDLING THE COMPOUND BECAUSE OF ITS TOXICITY AND CONTAINMENT OF CHLORO-ACNEGEN AGENTS.

15479

Exhibit #P0471

PIN # 1402
Date 30-Dec-65
Author L DOTSON
Addressee PROCESS BRIEF
Description Document displays process of T and further indicates that the raw materials and final product are toxic.

Exhibit #P0472

PIN # 63212-66
Date 01-Jan-66
Author D R MIDDLETON
Addressee LUECKE, C F & STEPHENS, J A
ARMSTRONG, D C & LEISY, A E
ROBIRDS, W R & OTHERS
Description Standard Manufacturing Process For ISO OCTYL 2,4-D ISO OCTYL 2,4,5-T, dated 11/69.

Exhibit #P0476

PIN # 21396
Date 04-Jan-66
Author M A WILLIAMS
Addressee ROARK, J N & DOTSON, L E
KELLOGG, W R & STRUM, J C
TAKE, E F
Description Document indicates that in 12/65 all time production record 571,220 lbs. were achieved. Previous operating conditions called for less than recent production, which may account for poor quality.

Exhibit #P0478

PIN # 5996
Date 13-Feb-66
Author CARL BOHL
Addressee FILE & MED DEPT
Description 2,4,5-T PLANT MEDICAL DEPARTMENT MEMO FROM CARL BOHL, INDUSTRIAL HYGIENIST, REGARDING REMOVAL OF TOXIC MATERIAL TDD FROM THE FINAL PRODUCT. STATES THAT MR. RHODES SUGGESTED TWO APPROACHES; ADD METHANOL SODIUM HYDROXIDE UNDER PRESSURE AND, SECONDLY, CLOSE CONTROL OF THE TEMPERATURE IN THE REACTOR.

15480

Exhibit #P0488
PIN # 20815
Date 22-Apr-66
Author J C STRUM
Addressee FILE & SPRINGGATE, J E
RHODES, V L & TAKE, E F
OTHERS
Description Late 1965 production increase of more than
25% in the T Plant without major equipment
revisions.

Exhibit #P0495
PIN # 22362
Date 23-Jun-66
Author F L RUPEL JR
Addressee RUSSELL, G H & CUTRIGHT, E A
RHODES, V L & BOLLINGER, P G
Description Document lists analysis of Dow's dried
2,4,5-T.

Exhibit #P0499
PIN # 1560
Date 11-Jul-66
Author W R UDELL
Addressee BOLLINGER, F G & BALDERSON, P B
SHARP, D B & STEPHENS, J A
Description Letter from Udell to the aforementioned
addressees which enclosed GLC procedure to
detect TDD in T. Document also indicates
that the samples are highly toxic.

Exhibit #P0502
PIN # 1487
Date 22-Jul-66
Author F L RUPEL JR
Addressee CUTWRIGHT, E A & BALDERSON, P B
RUSSELL, C M & STEPHENS, J A
UDELL, W R
Description Analysis of 1966 2,4,5-T reaching as high
as 28ppm. Document also indicates that the
"typical values should range between 5 to
18ppm."

15481

Exhibit #P0507

PIN # 1179-81
Date 11-Aug-66
Author J C STRUM
Addressee SPRINGGATE, J E & CUTWRIGHT, E A
RHODES, V L & NUMEROUS OTHERS

Description Document states that TDD is a toxic material and is contained in NaTCP, recovered TCP and dry 2,4,5-T .

Exhibit #P0549

PIN # 1697-1770
Date 01-Dec-66
Author L E AND V L DOTSON RHODES
Addressee LUECKE, C F & CUTWRIGHT, E A
RHODES, V L & STEPHENS, J A
DUNLAP, W P & OTHERS

Description Standard Manufacturing for 2,4,5-Trichlorophenoxyacetic Acid, revised November 1966, issued December 1966.

Exhibit #P0586

PIN # 5993
Date 23-Feb-67
Author CARL D BOHL
Addressee WHEELER, ELMER P & KELLY, R E

Description Document discusses February 22, 1967 meeting between Stephens, Udell, Sharp and Bohl regarding Dioxin. Document also refers to contamination levels between 10 and 30ppm. The group decided that they needed animal testing so that they could gain further information. Said testing was discussed and Kelly was apprised.

15100

Exhibit #P0592

PIN # 5995
Date 01-Mar-67
Author ELMER P WHEELER
Addressee DUNLAP, W P & BOHL, C D
KELLY, R E
Description The document addresses the fact that V. K. Rowe "opened the can of worms" on the 2,4,5-T situation. Indicated further is the fact that Dow isolated tetrachlordiphenylen-dioxyd. Also, Rowe indicated that the materials were so potent that putting it on the skin of an animal regardless of location resulted in a "positive" response.

Exhibit #P0593

PIN # 5994
Date 06-Mar-67
Author CARL D BOHL
Addressee KELLY, R E & SPRINGGATE, J E
CUTRIGHT, E A & STEPHENS, J A
DUNLAP, W P
Description Report Bohl's trip to Nitro on 2/27/67 and 2/28/67. Document further indicated that TDD is created in hold cycle of TCP Process. Cutright suggested either a cutdown of hold time or a cutdown in charge time in order to significantly reduce TDD in the final product.

Exhibit #P0595

PIN # 1296
Date 09-Mar-67
Author PETER M HOWELL
Addressee SPRINGGATE, J & KELLOGG, W R
RHODES, V L & OTHERS
Description Document indicates that personnel exposed to 2,4,5-T dust constituted a serious hazard.

15483

Exhibit #P0596

PIN # 681-84
Date 16-Mar-67
Author COMPANY DEF GEN SUP
Addressee MONSANTO
Description Production and Forecast of D and T for 1966 and 1967.

Exhibit #P0606

PIN # 1145
Date 03-Apr-67
Author UNKNOWN PMH
Addressee WRK & BFP
VLR & HAD
EAC & JES

Description AUTHORIZATION FOR EXPENDITURE FOR THE NITRO PLANT TO INSTALL 2,4,5-T AUTOCLAVE SAMPLERS AS IT IS NOTED THAT THE EXISTING SAMPLER IS CONSTITUTES A SEVERE EXPOSURE HAZARD.

Exhibit #P0631

PIN # 1495
Date 12-Jun-67
Author P B BALDERSON
Addressee RHODES, V L
Description Document indicates TDD levels as of 6/12/67 as high as 24ppm.

Exhibit #P0637

PIN # 8938-8960
Date 30-Jun-67
Author UNKNOWN UNKNOWN
Addressee
Description COVER LETTER OVER GOVERNMENT DOCUMENTS DELINIATING REQUIREMENTS FOR BIDS ON DEFOLIANT; ORANGE, ORANGE II, AND ORANGE III.

15484

Exhibit #P0639

PIN # 40421
Date 05-Jul-67
Author UNKNOWN UNKNOWN
Addressee TSD FILE & RHODES, V L

Description Document indicates that exact hold periods are necessary in order to reduce the personnel exposure problem in 2,4,5-T. Manual control varies as much as 30 minutes.

Exhibit #P0651

PIN # 73288-73307
Date 23-Aug-67
Author UNKNOWN UNKNOWN
Addressee NONE

Description List of equipment used in the manufacturer of 2,4,5-T.

Exhibit #P0652

PIN # 1451
Date 24-Aug-67
Author VERNE L RHODES
Addressee WOODS, W. C. & CUTRIGHT, E. A.
DOLIN, OWEN & MILLER, H. K.

Description ANALYSIS OF CONTROL SAMPLES FOR TDD IN NATCP.

Exhibit #P0665

PIN # 1436
Date 08-Sep-67
Author JR Q C LAB
Addressee UNKOWN

Description Analysis of T dated 09-08-67 with readings as high as 22 ppm.

15485

Exhibit #P0676

PIN # 1432
Date 06-Oct-67
Author JMS Q C LAB
Addressee UNKNOWN
Description Analysis of 2-4-5-T for TDD with readings as high as 25ppm.

Exhibit #P0679

PIN # 206-207
Date 11-Oct-67
Author C H RUSSELL
Addressee ZORCH, C.P. & CAYARD, D.B.
STEPHENS, J.A. & FISCHER, D.R.
OTHERS
Description Letter discusses a meeting in Washington which addressed the issue of what analysis of the esters was being performed. Russell also admits that it was he who wrote the n-butyl D, T, and Orange specifications.

Exhibit #P0681

PIN # 84-85
Date 13-Oct-67
Author C H RUSSELL
Addressee WISWESSER, W J & CAYARD, D E
STEPHENS, J A & ZORSCH, C P
Description Letter setting forth the fact that it was Russell who worked on writing the military specifications.

Exhibit #P0682

PIN # 86
Date 16-Oct-67
Author C H RUSSELL
Addressee WISWESSER, W J & CAYARD, D E
CONNAUGHTOU, J M & HOFF, D N
ZORSCH, C P
Description Document indicating that Monsanto was opposed to having the free acid specification reduced from 1% to .5%.

Exhibit #P0689

PIN # 1426
Date 06-Nov-67
Author C R Q C LAB
Addressee UNKNOWN
Description Analysis of 2,4,5-T by C.R. dated 11/6/67 for TDD with readings at 25ppm.

Exhibit #P0690

PIN # 1485
Date 07-Nov-67
Author W C WOODS
Addressee RHODES, V L & CUTRIGHT, E A
DOLIN, O E & BALDERSON, P B
Description Analysis of TDD, 25ppm as one of the readings.

Exhibit #P0704

PIN # 21403
Date 13-Dec-67
Author W C WOODS
Addressee DOLIN, O & CUTRIGHT, E A
RHODES, V L & KELLOG, W R
Description Document indicated that cost savings was more important than safety of product.

Exhibit #P0709

PIN # 68
Date 28-Dec-67
Author C H RUSSELL
Addressee MIDDLETON, D R & ZORSCH, C P
CARTY, CARL W & WISWESSER, W J
Description Document requesting modification of proposed military specification. Said document outlines numerous requests for change in said specification.

15486

Exhibit #P0713

PIN # 66038
Date 01-Jan-68
Author V RHODES
Addressee CUTRIGHT & ATKINSON
DOLIN & KELLOGG

Description REQUEST TO ANALYZE AND COMPARE PURCHASED NaTCP WITH NITRO PRODUCT. SERVICE REQUEST STATES THAT NaTCP STEP IS LIMITING PRODUCTION OF 2,4,5-T ACID AND DOWNTIME RESULTS IN LOST PRODUCTIVITY.

Exhibit #P0726

PIN # 53636
Date 25-Jan-68
Author UNKNOWN UNKNOWN
Addressee UNKNOWN

Description DOCUMENT INDICATES THAT WELDON SPRINGS PROBABLY COULD PROBABLY NOT FUNCTION AFTER THE WAR IF MONSANTO WERE TO BUILD A NEW PLANT. MONSANTO MUST IMPROVE COSTS OR WELDON SPRINGS COULD "RUN THEM OUT". WELDON SPRINGS PROBABLY CAN'T RUN AFTER WAR IF MONSANTO BUILDS NEW D PLANT. MONSANTO MUST IMPROVE COST OR WELSON SPRINGS COULD RUN THEM OUT.

Exhibit #P0732

PIN # 11112-11114
Date 30-Jan-68
Author GEORGE KEMPSON
Addressee BARTLETT

Description DISCUSSION OF MONSANTO'S OBJECTION TO SPECIFICATIONS REGARDING THE CONTENT OF ORANGE FSC 684Q.

15487

Exhibit #P0741
PIN # 11165-11168
Date 23-Feb-68
Author UNKNOWN
Addressee
Description DOCUMENT CONTAINS INFRARED METHOD FOR ANALYZING ORANGE HERBICIDE.

Exhibit #P0742
PIN # 8893-8948
Date 23-Feb-68
Author UNKNOWN UNKNOWN
Addressee UNKNOWN
Description PURCHASE DESCRIPTION FOR HERBICIDE-ORANGE WHICH SETS FORTH REQUIREMENTS AND DELINIATES QUALITY ASSURANCE PROVISIONS.

Exhibit #P0750
PIN # 53773-53781
Date 01-Mar-68
Author CHARLES ZORSCH
Addressee ROY MEYERS
Description DOCUMENT IS A NINE PAGE PERFORMANCE SUMMARY FOR DEFENSE CONTRACT FOR ORANGE BEGINNING 6/1/67 THROUGH 2/29/68 PREPARED BY MONSANTO.

Exhibit #P0763
PIN # 74220-74221
Date 23-Apr-68
Author LARITA IVES
Addressee VIRGINIA KOENIG & J J JURKIEWICZ
Description MEMO CONCERNING LISTED LABELS AND NOTATION OF WHERE STOCK IS LOCATED AND QUANTITY OF KNOWN STOCK.

15488

Exhibit #P0769

PIN # 160-65
Date 10-May-68
Author C P ZORSCH
Addressee NUMEROUS EMPLOYEES
Description Document addresses meeting held with the General Supply Division of Government whereby supply and demand was discussed.

Exhibit #P0771

PIN # 53742
Date 17-May-68
Author JANE LEWIS
Addressee ZORSCH
Description LEWIS NOTIFIED ZORSCH THAT THEIR MILITARY DEFOLIANT CONTRACT HAD BEEN SIGNED.

Exhibit #P0785

PIN # 66601-747
Date 11-Jul-68
Author CARL BOHL
Addressee MCGUIRE, B. G. & WEBB, H.R.
STRATMEYER, R.J. & MEDICAL DEPT.
Description Document is a Comprehensive Survey of the entire Nitro Plant operation. The document exhibits in part that there is a chloracne problem resulting from an impurity in the final product. It was hoped that at the end of two years, this contaminant would be eliminated.

15489

Exhibit #P0797

PIN # 53744-46
Date 16-Sep-68
Author T R B
Addressee KRUMMRICH LAB & OTHERS UNKNOWN

Description Document discusses some of the risks associated with use of a product containing 2,4,5-T.

Exhibit #P0801

PIN # 004073
Date 25-Sep-68
Author V L RHODES
Addressee NITRO TECH SERV & CUTRIGHT, E. A.
DOTSON, L. E. & RHODES, V. L.
RUSSELL, G. P.

Description TEMP CONTROL IS = PLUS OR MINUS 4 DEGREES CENT FROM TARGET. "WE NOW HAVE INFORMATION LEAKED FROM HERCULES THAT PRECISE TEMPERATURE CONTROL MAY BE THE KEY TO CHLORACNE REEDUCTION. FOR THIS REASON WE NOW REQUEST INSTALLATION OF INSTRUMENT HARDWARE TO ALLOW US TO REMOVE THE HUMAN ELEMENT AND CONTROL AUTOCLAVE TEMPERATURES AT PLUS OR MINUS 1 DEGREE CENT."

Exhibit #P0803

PIN # 001344-57
Date 01-Oct-68
Author R A ATKINSON
Addressee UNKNOWN
Description 2,4,5-T PROCESS IMPROVEMENT PLAN.

Exhibit #P0811

PIN # 000692-704
Date 29-Oct-68
Author JOHN D CONNER
Addressee MORRIS, THOMAS D. & WELD

Description LAW FIRM SELLERS, CONNOR & CUNEO WRITING ON BEHALF OF DIAMOND SHAMROCK, HERCULES, MONSANTO, T.H. AND CHIPMAN REGARDING THEIR OPPOSITION TO THE BUILDING OF THE WELDON SPRING PLANT. ON BEHALF OF CONCERN OF D.S., HERC., MONSANTO, T.H., AND CHIPMAN OF IMPLICATIONS OF WELDON SPRING PLANT ON THESE PHENOXY HERBICIDE PRODUCERS.

15490

Exhibit #P0813

PIN # 000690-91
Date 31-Oct-68
Author JOHN D CONNER
Addressee HOWARD, HAROLD H. & WILKERSON, M. F.
GIVENS, KENNETH T. & MATTISON, S. A.
RUMER, ROBERT & OTHERS

Description ACKNOWLEDGEMENT THAT LETTER TO ASST SEC'Y
DEFENSE THOMAS D. MORRIS WAS FILED ON OCT
30, 1968 WITH DEPT OF COMMERCE AND DEPT OF
DEFENSE, AND WAS HAND DELIVERED TO MR .
KOSTER AND MISS LEWIS, REGARDING THE WELDON
SPRING PROJECT.

Exhibit #P0814

PIN # 001407-08
Date 01-Nov-68
Author M A W
Addressee NITRO ORGAN CHEM DIV & OTHERS UNKNOWN

Description DETERMINATION OF TDD IN 2,4,5-T ACID FROM
SOLID SAMPLE, INCLUDING METHOD FOR
CALCULATING PPM OF TDD.

Exhibit #P0815

PIN # 75645-73
Date 08-Nov-68
Author G R SIDO
Addressee ARK POIS LABEL FILE & LITTEKEN, M. F.

Description MEMO CONFIRMS DISCUSSION WITH HENRY DE
SALVO REGARDING ALLOWABLE COLORS OF LABELS
FOR 2,4,5-T & 2,4-D IN ARKANSAS.

Exhibit #P0821

PIN # 001521-48
Date 12-Dec-68
Author J C STRUM
Addressee NITRO TECH SERV DEPT
Description PLAN TO IMPROVE PERFORMANCE OF 2,4,5-T
PROCESS IN THE AREAS OF RATE, RAW MATERIAL
USAGE, QUALITY, SAFETY, POLLUTION,
MECHANICAL RELIABILITY, AND MANUFACTURING
TECHNOLOGY.

15491

Exhibit #P0822

PIN # 000704
Date 19-Dec-68
Author JOHN D CONNER
Addressee WILKERSON, M. F. & GIVENS, KENNETH T.
HOFF, DOUGLAS N. & MCCOY, W. G.
THOMPSON, R. S. & OTHERS

Description Document indicating that Government contract for Agent Orange had been cancelled.

Exhibit #P0826

PIN # 76062-81
Date 01-Jan-69
Author W R KELLOG
Addressee NITRO & MONTHLY REPORT
TECH SERVICE DEPT.

Description Nitro Tech Service Monthly report dated 1/69, indicating that a trial run of the autoclaves is planned with the intention of reducing the TDD content in NaTCP from 40-50 ppm to 5-6 ppm.

Exhibit #P0827

PIN # 4800-47
Date 01-Jan-69
Author J L W R SIMS UDELL
Addressee LUECKE, C. F. & RUSSELL, C.F.
CUTRIGHT, E. A. & KELLY, R. E.
RHODES, V. L. & OTHERS

Description Final report #150 regarding attempts to reduce TDD in 245-T. The report addresses the acute toxicity of TDD as well as the process of production and analysis.

15492

Exhibit #P0833

PIN # 1063
Date 09-Jan-69
Author J C STRUM
Addressee RHODES, V & EAC
STRUM, J C & DOLIN,

Description January, 1969 document which discusses plan to reduce the level of TDD in NaTCP from 50 to 5 ppm. Document also discusses the belief that TDD is produced in the NaTCP autoclaves.

Exhibit #P0834

PIN # 1062
Date 09-Jan-69
Author J C STRUM
Addressee CUTRIGHT, E A & RHODES, V L
HELMER, F J & STRUM, J C
DOLIN, O E

Description Jan. 9, 1969 plan to reduce TDD in NaTCP from 50 ppm to 5 ppm.

Exhibit #P0835

PIN # 1452-54
Date 15-Jan-69
Author J C STRUM ET AL
Addressee RESEARCH DEPT. & RHODES, VL
CUTRIGHT, E A & STEPHENS, J A
OTHERS

Description Formal tentative amendment to reduce TDD in NaTCP from 40-50ppm to 5-6ppm. Lists present NaTCP reaction conditions and the newly proposed plan.

15493

Exhibit #P0836

PIN # 1517-1520
Date 19-Jan-69
Author UNKNOWN
Addressee UDELL, W R & CUTRIGHT, E A
RHODES, V L & STRUM, J C
PATRICK, C E & OTHERS

Description "Minutes of Meeting With W R Udell".
Document indicates that he believes that approximately 35 ppm is being produced in the autoclaves consistently. It states that TDD is highly sensitive to temperature, with slight increases resulting in significant increases in TDD.

Exhibit #P0844

PIN # 1502-04
Date 21-Feb-69
Author J C STRUM
Addressee CUTRGHT, E A & DOTSON, L E
BALDERSON, P B & UDELL, W R
LEUCKE, C F & OTHERS

Description Progress report for plan to reduce TDD level from 40 ppm as in 1968 experience to 5 - 7 ppm. Present trial run showed reduction to 3.05 ppm. A 30-day plant trial run will begin on February 24 to complete the demonstration.

Exhibit #P0846

PIN # 76101-19
Date 01-Mar-69
Author W R KELLOG
Addressee NONE

Description Document speaks of a problem with the GLC analysis which appears to be resolved with the flame detection method.

Exhibit #P0847

PIN # 6002
Date 16-Apr-69
Author R EMMET KELLY
Addressee EAKIN, FRANK & BOHL, C.D.

Description Letter from Dr. Kelly indicating that even less than 1 ppm could cause chloracne.

Exhibit #P0849

PIN # 76138-155
Date 01-May-69
Author W R KELLOG
Addressee JACKSON, D W & SAVAGE, J R
LEUCKE, C F & WEBBER, R T
EDWARDS, P W & OTHERS

Description Tech. Service monthly report indicating a significant reduction of TDD in NaTCP, an average of 4ppm.

Exhibit #P0850

PIN # 1500
Date 08-May-69
Author J C STRUM
Addressee BAKIN, F. A. & DOLIN, C. B.
HELMER, F.J. & BALDERSON, P
WOODS, W. C.

Description May 1969 document which states that Curt Woods was to set up a program for routine analysis for the TDD in 245-T finished goods. Routine is indicated to mean between 2-4 per week.

Exhibit #P0851

PIN # 6000
Date 14-Jun-69
Author R EMMETT KELLY MD
Addressee WEBB, H B

Description Memo of Dr. Kelly asking "I don't want to be cynical, but are there any employees in the department who don't have chloracne already?"

15495

Exhibit #P0852

PIN # 76171-82
Date 01-Jul-69
Author W R KELLOGG
Addressee LUECKE, C F & WEBBER, R T
SAVAGE, J R & SEPULVEDA, C H
DODD, H A & OTHERS

Description Document indicating that TDD is highly toxic.

Exhibit #P0853

PIN # 11227
Date 14-Jul-69
Author C H RUSSELL
Addressee MIDDLETON, D R & ZORSCH C P
ROBIRDS, W R & LEISY, A E

Description The document indicates they were discontinuing their investigation of VPC analysis procedures of Orange when their contract was cancelled.

Exhibit #P0855

PIN # 76183-94
Date 01-Aug-69
Author W R KELLOGG
Addressee NITRO & GENERAL OFFICES
KRUMMRICH & QUEENY
ANNISTON & OTHER PLANTS

Description August, 1969, monthly report of Nitro's technical service dept. It is noted that approval was received on Tentative Amendment No. N which permits control of the condensation reaction pH with 34% NaTCP solution instead of 25% NaOH--a trial run on August 19-23 showed no adverse effects on quality or yield.

15496

Exhibit #P0858

PIN # 22929-34
Date 29-Aug-69
Author J C STRUM
Addressee SAFETY DEPT. & PLANT MANAGER
OTHERS

Description Document is entitled "Process Safety Audit" and addresses, in question and answer form, safety questions regarding: raw materials, process, finished goods and equipment and layout. Document also indicates that the finished goods may be somewhat toxic and that the containers are properly labelled for toxicity.

Exhibit #P0859

PIN # 76195-205
Date 01-Sep-69
Author W R KELLOGG
Addressee NITRO & GENERAL OFFICES
KRUMMRICH & ANNISTON
QUEENY & OTHER PLANTS

Description SEPTEMBER, 1969, MONTHLY REPORT FOR THE TECHNICAL SERVICES DEPARTMENT OF THE NITRO PLANT.

Exhibit #P0860

PIN # 29050-144
Date 15-Sep-69
Author E M EMERY ET AL
Addressee SHARP, D B & DOLIN, O
EMERY E M & MEADE, FRANK
NUMEROUS OTHERS

Description Monsanto Organic Chemicals Division Research Report -3598;"Final Report on Gas Chromatography Method Development - L968.

15497

Exhibit #P0872

PIN # 1693-96
Date 05-Dec-69
Author R L DILLON ET AL
Addressee ROBIRDS, W R & STRUM, J C
PAYNE, R L & EAKIN, F A
RESEARCH DEPT. & OTHERS
Description Official tentative amendment to the manufacturing process for 2,4,5-T acid. Amendment requires in part reduction of the TCB feed time from 2 1/2 hrs to 1 hr.

Exhibit #P0876

PIN # 68292
Date 16-Dec-69
Author WILLIAM H HUNT
Addressee SPEZIALE, A. J. & SHARP, D. B.
Description Reference to preliminary mutagenic report of NCI. Hunt says Medical Dept. has report but feels data is meaningless and that mutagenic activity in bacteria cannot be extrapolated to mammals until mammalian data are available.

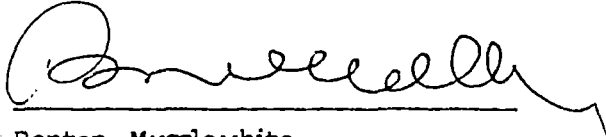
Exhibit #P0877

PIN # 73231-41
Date 19-Dec-69
Author A J SPEZIALE
Addressee BALDESCHWEILER, J D & BURGER DR.
STEPHENS J A & UDELL W R
KELLY, R E & OTHERS
Description Letter indicating Monsanto's knowledge of TDD as well as levels of contamination from 1953, methods of analysis for TDD in autoclave and technical 2,4,5-T, sample chromatograms, and numerous forms of correspondence.

15498

CERTIFICATE OF SERVICE

The undersigned Benton Musslewhite, Esq. does hereby certify that on the 11th day of April, 1984 he served the enclosed Pre-trial Order on all those shown on the attached service list by hand delivery through a Delivery Service.



Benton Musslewhite

1:

15500

15499

SERVICE LIST

Leonard Rivkin, Esq.
Rivkin, Leff, Sherman & Radler
Attorneys for Dow Chemical Company
100 Garden City Plaza
Garden City, N.Y. 11530

Wendell B. Alcorn, Jr., Esq.
Cadwallader, Wickersham & Taft
Attorneys for Diamond-Shamrock
One Wall Street
New York, New York 10005

Judith L. Spanier, Esq.
Shea & Gould
Attorneys for Uniroyal, Inc.
330 Madison Avenue
New York, New York 10017

David R. Gross, Esq.
Budd, Larner, Kent, Gross,
Picillio & Rosenthal
Attorneys for Thompson Chemical
33 Washington Street
Newark, New Jersey 17102

William A. Krohley, Esq.
Kelley Drye & Warren
Attorneys for Hercules, Inc.
101 Park Avenue
New York, N.Y. 10178

Phillip E. Brown, Esq.
Hoberg, Finger, Brown, Cox
& Molligan, P.C.
Central Tower
703 Market Street
San Francisco, California 94103

David J. Dean, Esq.
Dean, Falanga & Rose
One Old Country Road
Carle Place, New York 11514

Gene Locks, Esq.
Greitzer & Locks
1500 Walnut Street - 21st Floor
Philadelphia, Pennsylvania 19102

John C. Sabetta, Esq.
Townley & Updike
Attorneys for Monsanto Co.
405 Lexington Avenue
New York, New York 10017

Thomas Beck, Esq.
Arthur, Dry & Kalish
Attorneys for Uniroyal, Inc.
1230 Avenue of the Americas
New York, New York 10020

Morton B. Silberman, Esq.
Clark, Gagliardi & Miller
Attorneys for T&H Agriculture
99 Court Street
White Plains, New York 10601

Arvin Maskin, Esq.
Civil Division
United States Department of
Justice
Safeway Building, Room 9040
Washington, D.C. 20530

Hon. Shira Scheindlin
Magistrate
United States District Court
225 Cadman Plaza East, Rm. 28
Brooklyn, New York 11201

Stanley M. Chesley, Esq.
Waite, Schneider, Bayless
& Chesley, Co., L.P.A.
1513 Central Trust Tower
Cincinnati, Ohio 45202

Thomas W. Henderson, Esq.
Henderson & Goldberg
Frick Building, Rm. 1601
Pittsburgh, Pennsylvania 15211

Benton Musselwhite, Esq.
609 Fannin, Suite 517
Houston, Texas 77002

John O'Quinn, Esq.
O'Quinn, Hagans & Wettman
3200 Travis Commerce Tower
600 Travis
Houston, Texas 77003

Stephen J. Schlegel, Esq.
Schlegel & Trafelet, Ltd.
One N. LaSalle St., Suite 3900
Chicago, Illinois 60602

Newton B. Schwartz, Esq.
Houston Bar Center Building
723 Main, Suite 325
Houston, Texas 77002

15502

Exhibit #P0878
PIN # 73727-29
Date 19-Dec-69
Author C H RUSSELL
Addressee UNKNOWN
Description Product specification for 2,4-D/2,4,5-T
Butyl Ester Brush Killer.

Exhibit #P0879
PIN # 73730-31
Date 19-Dec-69
Author C H RUSSELL
Addressee UNKNOWN
Description Product specification for 2,4-D/2,4,5-T
Low Volatile Brush Killer.

Exhibit #P0880
PIN # 73732-33
Date 19-Dec-69
Author C H RUSSELL
Addressee UNKNOWN
Description Product specification for Brush-O-Cide
Brush Killer.

Exhibit #P0881
PIN # 73734-35
Date 19-Dec-69
Author C H RUSSELL
Addressee UNKNOWN
Description Product specification for 2,4-D/2,4,5-T
Amine Brush Killer.

15503

Exhibit #P0896

PIN # 1894-1949
Date 01-Feb-70
Author J C STRUM
Addressee STEPHENS, J A & ROBIRDS, W R
LEUKE, C F & OTHERS

Description Standard Manufacturer Process for 2,4,5-Trichlorophenoxyacetic Acid Department 895.01 supersedes Standard Manufacturing Process for 2,4,5-T dated January, 1966, by L.E. Dotson, revised November, 1966 by V.L. Rhodes.

Exhibit #P0897

PIN # 1894-1949
Date 01-Feb-70
Author J C STRUM
Addressee STEPHENS, J A & ROBIRDS, W R
LEUKE, C F & NUMEROUS OTHERS

Description Standard Manufacturing Process For 2,4,5-Trichlorophenoxyacetic Acid Department 895.01. Supercedes Standard Manufacturing Process for 2,4,5-T dated January, 1966, by L.E. Dotson, revised November, 1966 by V.L. Rhodes. TDD 1968 as high as 50ppm. Good process description.

Exhibit #P0900

PIN # 040807-70
Date 07-Feb-70
Author L G SILVERSTEIN
Addressee UNKNOWN
Description Report on safe handling of tetrachlorodibenzo-p-dioxin points out TCBD's extreme toxicity and necessary safety procedures.

15504

Exhibit #P0910

PIN # 1444-45
Date 22-Feb-70
Author C H RUSSELL
Addressee EAKEN, D A & ELLIOTT
UDELL & DOLIN
STEPHENS
Description Nitro needs extra equipment for analysis of each lot.

Exhibit #P0915

PIN # 15613-17
Date 11-Mar-70
Author JACK FARLY
Addressee MCCARVILLE DR, WM J & SPEZIALE DR, A J
Description Present were, J. Mason, J. Early,(Monsanto); George Lynn, Dr. Blair(Dow); Harris Miller, Jerome Wildenfeld , Al Schlumberger(Hooker); Charles Dunn, A.E. Sidwell (Hercules). All in agreement that 2,3,7,8-tetrachlorodibenzo-p-dioxin is contaminant causing high level teratogenicity, possibly less than 1ppm will cause harm.

Exhibit #P0922

PIN # 76005-15
Date 19-Mar-70
Author JACK D EARLY
Addressee SPEZIALE DR, A J & SHARP, D B
Description Dow Teratology Studies. Note in Monsanto possession. 2,3,7,8-Tetrachlorodibenzo-p-Dioxin highly toxic to embryos of pregnant rats.

Exhibit #P0925

PIN # 73896
Date 24-Mar-70
Author MATHEW HUDSON
Addressee BOCK, EDWARD J.
Description Letter from shareholder to President/Monsanto re: findings in Bionetics study.

15505

Exhibit #P0931

PIN # 52983
Date 01-Apr-70
Author J L SIMS
Addressee EMERY, E M & LIPPMAN, A E
CONKIN, R A
Description Ascertain low limits of detection,
descriptions of analysis.

Exhibit #P0933

PIN # 73897-98
Date 02-Apr-70
Author R EMMET KELLY MD
Addressee HUDSON, MATHEW
Description Kelly responds to the letter of Hudson in
which he states in part that there are no
teratological effects and does not know
where Agent Orange was used.

Exhibit #P0944

PIN # 7825
Date 17-Apr-70
Author DON R FISCHER
Addressee DISTRICT MGRS. & REGIONAL SALES DIR.
PROD.MGRS.&SUPRVSR & MRKT DVLPMNT MGRS
MRKT DVLPMNT SPRVSR
Description Document pushes for sales of all 2,4,5-T
Acid, ester and formulation products or
else substantial financial loss will occur
if government bans product.

Exhibit #P0953

PIN # 7658-61
Date 24-May-70
Author C P ZORSCH
Addressee FISCHER, D R
Description Summarization of current situation relating
to federal restrictions for the use of
2,4,5-T.

15506

Exhibit #P0976

PIN # 1012
Date 28-Sep-70
Author LOWELL E MILLER
Addressee MANUFACTURERS OF & ECONOMIC POISONS

Description Notice to Manufacturers, Formulators, Distributors and Registrants of Economic Poisons. Can't use chlorodioxin products.

Exhibit #P0977

PIN # 72953
Date 06-Oct-70
Author R EMMET KELLY
Addressee GILLESPIE, JOSEPH

Description Regarding rework of 2,4,5-T to get rid of the dioxin - document states should be meeting with Garrett or Wheeler of industrial hygiene group to avoid epidemic of chloracne in workers handling the impurity during stages of removal and cleanup.

Exhibit #P0983

PIN # 146
Date 08-Dec-70
Author V G PRITCHARD
Addressee HABERMOHL, D E

Description No method of analysis available for 2,4,5-T ester formulations in order to determine chlorodioxin content.

Exhibit #P0991

PIN # 96-97
Date 15-Jan-71
Author CHARLES P ZORSCH
Addressee GEORGIA-PACIFIC CORP & BLACK, REX
HARRIS, WERNER

Description Working to reduce TDD to less than .5ppm for sale since Monsanto claims that said level is not detectable, and thus implicitly safe.

15507

Exhibit #P0992

PIN # 74229-33
Date 25-Jan-71
Author UNKNOWN UNKNOWN
Addressee DUNLOP, R H & BURKE, B J
WESSELS, R G & BAILEY, R E
BONHAM, F S & NUMEROUS OTHERS

Description Monthly Report - Labeling - Registration
and Transportation Claims January 1971.

Exhibit #P1002

PIN # 74223-26
Date 30-Apr-71
Author T E ADAMCZYK
Addressee LETTEKEN, MARK F & MONSANTO COMPANY

Description Will not grant continuous registration -
must petition for renewals every 5 years,
responded the U.S.D.A. to Monsanto's
request.

Exhibit #P1003

PIN # 40890-93
Date 07-May-71
Author JAMES G WILSON
Addressee UNKNOWN

Description Mr. Wilson in this document indicated that
TDD was not rapidly degradable in the
environment and that the data available
substantiates embryotoxicity. He further
believes that all species would have the
same results if doses of 2,4,5-T were high
enough.

15508

Exhibit #P1004

PIN # 6426-27
Date 07-May-71
Author GLYNN DAVIS
Addressee ROBIRDS, W R & UDELL, W R
WILLIAMS, H L & BRATSCHE, G L
JACKSON, D W & NUMEROUS OTHERS

Description Document contains history of process used to reduce dioxin levels in Isooctyl T Ester of 2,4,5-Trichlorophenoxyacetic Acid.

Exhibit #P1030

PIN # 74600-17
Date 23-Mar-72
Author G ROBERT SIDO
Addressee USDA

Description Various applications for registration renewals for: 2,4,5-T Isopropyl Ester, dated 3/22/72; 2,4,5-T Isopropyl Ester dated 4/1/66; 2,4,5-T Isopropyl Ester, dated 3/15/51.

Exhibit #P1072

PIN # 5665-66
Date 05-Feb-79
Author UNKNOWN UNKNOWN
Addressee UNKNOWN

Description Document includes, in part, key dates with regard to Monsanto's manufacture of 2,4,5-T.

Exhibit #P1073

PIN # 90000-01
Date 19-Feb-79
Author UNKNOWN UNKNOWN
Addressee UNKNOWN

Description Accident in plant involving spillage of 2,4,5-trichlorophenol which generates the highly carcinogenic dioxins. One hundred and fourteen employees with chloracne have been identified as being involved in the operation in which accident the occurred.

15509

Exhibit #P1074

PIN # 88721-24
Date 26-Jun-79
Author G EDWARD PAGET
Addressee UNKNOWN
Description Document entitled "Chlorinated Dibenzo Dioxins" - A Position Paper For Consideration By M.C. Throdahl.

Exhibit #P1075

PIN # 91348-50
Date 20-Aug-79
Author F J HOLZAPFEL
Addressee BISHOP, D R & CALLIS, C F
GAFFEY, W R & MCCARVILLE, W J
MEYER, F C & NUMEROUS OTHERS
Description Nitro Health Study Task Force Minutes of Meeting of 8/17. Dr. Sudking suggested changes in Monsanto draft of "Mortality Study".

Exhibit #P1076

PIN # 87695-96
Date 24-Aug-79
Author F J HOLZAPFEL
Addressee GAFFEY, W R & MCCARVILLE, W J
MEYER, C & PARK, P S
WANDER, B J & OTHERS
Description Nitro Health Study Task Force Minutes of Meeting 8/24/79. Dr. Suskind has not yet approved draft of Monsanto "Mortality Study". Study involved 121 people involved in 1949 Nitro incident who had chloracne. Carbide/University of Pittsburgh study - higher incidences of 3 types of cancer in 819 deceased workers.

15510

Exhibit #P1077

PIN # 90240-50
Date 24-Oct-79
Author UNKNOWN UNKNOWN
Addressee UNKNOWN
Description Dioxins - Dibenzofuranes/Status Summary.
Contains all incidents worldwide of human exposure.

Exhibit #P1085

PIN # 91563-66
Date 01-Mar-80
Author UNKNOWN UNKNOWN
Addressee UNKNOWN
Description Agent Orange...What are the facts?
Monsanto article in its own publication addresses AO lawsuit - highly emotional issue. Didn't produce TCB as raw material of 2,4,5-T.

Exhibit #P1086

PIN # 91517-18
Date 17-Mar-80
Author COMPANY MONSANTO
Addressee UNKNOWN
Description Monsanto News Backgrounder. Publication by Monsanto entitled "Agent Orange...What are the facts?" Monsanto Company Perspective.

Exhibit #P1087

PIN # 91514-16
Date 07-Apr-80
Author R M SCOTT
Addressee NITRO PLANT & EMPLOYEE
RETIREE & AND FAMILY
Description Letter in response to an inquiry regarding Agent Orange in which articles published by Monsanto were enclosed.

15511

Exhibit #P1092

PIN # 90035-36
Date 27-Apr-81
Author WILLIAM R GAFFEY
Addressee ROUSH, G. & MCCARVILLE, W. J.
LEVINSKAS, G. J. & COLEMAN. D. L.
PARK, P. S. & OTHERS

Description Report on Selikoff study criticizes presentation of chloracne cases as not surprising.

Exhibit #P1096

PIN # 94391-95
Date 16-Dec-81
Author UNKNOWN UNKNOWN
Addressee UNKNOWN

Description Monsanto Company Response to Nitro W. VA Lawsuit Allegations. Press release re Nitro W. VA lawsuit. pg. 4 - 121 employees developed symptoms including skin rash known as chloracne, eye & respiratory tract irritation, headache, dizziness, nausea and liver disorders.

Exhibit #P1098

PIN # 90157-59
Date 16-Dec-82
Author JAMES H SPRAUL MD
Addressee UNKNOWN

Description Draft by James H. Spraul, M.D., document states that TCDD is highly toxic.

Exhibit #P1099

PIN # 94334-38
Date 21-Dec-82
Author UNKNOWN UNKNOWN
Addressee UNKNOWN

Description Article which discusses the effects of 2,4,5-T.

15512

Exhibit #P0163

PIN # 01912-45
Date 04-Apr-62
Author J E WILDER
Addressee EAGAN, J.M. & DELLINGER, R.
ABORN, H.F. & SIDWELL, A.E.

Description Wilder to Egan memo re: facts concerning Jacksonville, Arkane, Arkansas plant; plant manual - prohibits temperature in excess of 180 degrees c.

Exhibit #P0236

PIN # 26114-5
Date 03-Jul-63
Author JOHN F FRAWLEY
Addressee ROWE, V.K. & HUNT, W.H.

Description Frawley relates clinical reports of neuropathy. . . " On the basis of these reports Leary feels that the hazards associated with the use of 2,4-D and 2,4,5-T should be understood more thoroughly" - suggests Dow and Hercules conduct a study.

Exhibit #P0237

PIN # 26116
Date 03-Jul-63
Author JOHN FRAWLEY
Addressee

Description Note re: letter of 07/03/63 from Rowe to Frawley. Note reads in reference to anti-trust laws.

Exhibit #P0294

PIN # 00000
Date 20-May-64
Author W A SMITH
Addressee TURK, E. & BELLINGER, E.
EAGAN, J.M. & BECKROTH, M.F.
DISWELL, A.E.

Description Progress Report - discusses recognition of an "unknown" constituent in the 2,4,5-T of

15513

approximately 8% by volume.

Exhibit #P0305

PIN # 28118
Date 17-Jun-64
Author WILD RICE ELECTRIC
Addressee LYON CHEMICAL
Description Letter from Wild Rice Electric Cooperative, Inc. to Lyon Chemical, Inc. re: report of person becoming ill after eating berries from an area sprayed with a 2,4-D and 2,4,5-T brush spray.

Exhibit #P0333

PIN # 00000
Date 30-Nov-64
Author DOW CHEMICAL
Addressee
Description Dow Analytical Method - Dow report provided to Hercules recognizing existence of dioxin and that it causes chloracne - includes example of gas chromatogram for dioxin.

Exhibit #P0368

PIN # 28122
Date 16-Feb-65
Author H F PIERCE
Addressee FRAWLEY, J. & NEAL, J.
YATES, R. & SPELTZ, D.
FEDDERMAN, M. & KUNTHOLM, J.
Description Letter from Pierce to Frawley re: relates a claim regarding injuries to powerline construction employees.

Exhibit #P0373

PIN # 28123
Date 22-Feb-65
Author JOHN F FRAWLEY
Addressee WYMAN & OTHER DOW EMPLOYEES
Description Letter from Frawley to Wyman - relates a

15514

claim re: injuries to powerline
construction employees.

Exhibit #P0406

PIN # 01282-3
Date 19-Mar-65
Author V K ROWE
Addressee KELLY, MONSANTO & WILKENFELD, HOOKER
VERHOEZE, HOOKER & KENNEDY, DIAMOND
CHANDLER, DIAMOND & FRAWLEY, HERCULES

Description Rowe to each chemical company inviting
manufacturers to Midland meeting ". . . to
discuss the toxicological problems caused
by the presence of certain highly toxic
impurities in certain samples of 2,4,5-TLP.
. . ."

Exhibit #P0408

PIN # 01297-304
Date 24-Mar-65
Author C L DUNN
Addressee HERCULES FILE
Description Dunn's handwritten minutes and notes
relating to Dow's discovery of employee
chloracne; 2,4,5-T; TCP; fatigue and that
chloracne may be systemic; cases 25 years
before; rabbit tests and damaged livers.

Exhibit #P0409

PIN # 01290
Date 24-Mar-65
Author C L DUNN
Addressee HERCULES FILE
Description Detailed Notes on Dow Visit of 03/24/65 re:
toxic materials in 2,4,5-TCP.

Exhibit #P0410

PIN # 706001-3
Date 25-Mar-65
Author E L CHANDLER
Addressee KENNEDY, F.R. & KING, J.O.

15515

Description WILKERSON, M.F.
Chandler reports on meeting of 03/24/65 at Dow; employees listless, fatigued; Dow concluded 1 ppm with repeat exposure can create problem; purpose of meeting to help solve "problem before outsiders confuse issue."

Exhibit #P0412

PIN # 01347
Date 26-Mar-65
Author HERCULES CORP
Addressee HERCULES FILE
Description Hercules Animal Study PPM - test results of positive response to exposure to as little as 0.4 ppm.

Exhibit #P0413

PIN # 32466-7
Date 26-Mar-65
Author JOHN P FRAWLEY
Addressee COPELAN, JOHN G. & MAYFIELD, PAUL
MADDOCK, CHARLES & MCGEE, LEMUEL
RENO, P.J. & 6 OTHERS AT HERCULES
Description Frawley report of 03/24/65 meeting with Dow - chloracne a systemic disease, a potent liver toxicant, lethal to rabbits; discusses constant monitoring of TCP and 2,4,5-T production for protection against illegitimate claims.

Exhibit #P0414

PIN # 032489-90
Date 26-Mar-65
Author C L DUNN
Addressee COPELAND, J.G. & GEORGE, R.S.
SCOTT, R.B. & BELLINGER, E.S.
EAGAN, J.M. & 5 OTHERS AT HERCULES
Description Memo from Dunn to Copeland re: "Highly Toxic Impurities in 2,4,5-TCP."

15516

Exhibit #P0418
PIN # 32488
Date 29-Mar-65
Author J M EAGAN
Addressee WILDER, H.E.
Description Letter from Eagan to Wilder re: toxic impurities in 2,4,5-TCP; operation of Hercules' TCP process; reactions and recommendations.

Exhibit #P0420
PIN # 32514-5
Date 30-Mar-65
Author A E SIDWELL
Addressee FRAWLEY, JOHN F. & WILDER
EAGAN, J.M. & DUNN, C.L.
TECH. FILE
Description Memo from Sidwell to Frawley "confidential" report of Dow meeting will be held in confidence.

Exhibit #P0423
PIN # 32464-87
Date 01-Apr-65
Author C L DUNN
Addressee HALL, R.T. & COPELAND, J.G.
GEORGE, R.S. & YATES, R.T.
SCOTT, R.B. & 11 OTHERS
Description Memo from Dunn to Hall re: Toxic Impurities in 2,4,5-T; establish periodic examination of further production.

Exhibit #P0425
PIN # 01348
Date 09-Apr-65
Author JOHN F FRAWLEY
Addressee DUNN, C.L. & EAGAN, J.M.
SIDWELL, A.D.
Description Memo from Frawley to Dunn re: Frawley aware of Monsanto and Badische history of problems which ". . . confirm the high degree of toxicity of the chloracnegens. .
."

15517

Exhibit #P0426

PIN # 01348
Date 14-Apr-65
Author JOHN P FRAWLEY
Addressee JACKSONVILLE FILE & DUNN, C.L.
EAGAN, JOHN
Description Frawley note to Jacksonville plant file re:
2,4,5-T; Dow test results on Hercules
2,4,5-T acid shipments; some Dow rejections
because a third in increasing amounts of
acnegens was indicated.

Exhibit #P0432

PIN # HERC0484
Date 13-May-65
Author V K ROWE
Addressee FRAWLEY, JOHN P. & WHEELER, E.P.
Description Letter from Rowe to Frawley relates problem
in analyzing for dioxin.

Exhibit #P0435

PIN # HERC0486-7
Date 27-May-65
Author P A TIFFANY
Addressee FORD, JOHN
Description Letter from Tiffany at Dow to Ford re:
retesting 2,4,5-T acid; higher ppm than
before.

Exhibit #P0437

PIN # 00000
Date 01-Jun-65
Author FRED HAGER
Addressee SIDWELL, A.E.
Description Letter from Hager at Naugatuck to Sidwell
relates 1 ppm "have induced serious
industrial hygiene problems."

15518

Exhibit #P0444

PIN # 32952
Date 30-Jun-65
Author HERCULES CORP
Addressee HERCULES FILE
Description Notes re: samples.

Exhibit #P0448

PIN # 01384
Date 12-Jul-65
Author JOHN P FRAWLEY
Addressee JACKSONVILLE FILE & COPELAND, JACK
EAGAN, JOHN & DUNN, C.L.
WILDER, H.E. & 2 OTHERS

Description Memo to Jacksonville plant reports Dow's and Hercules' awareness that no one else has done anything to clean up their 2,4,5-T. Fears Congressional investigation and restrictive legislation.

Exhibit #P0450

PIN # 00000
Date 19-Jul-65
Author HERCULES CORP
Addressee DEFENSE SUPPLY
Description Contract between Defense Supply Agency and Hercules Power Co. date 07/19/65 to supply 638,400 lbs. of, and more at a sale price of \$1,501,200; all supplies free from defects.

Exhibit #P0453

PIN # 32512-3
Date 26-Aug-65
Author J FORD
Addressee TAVES, M.
Description Memo from Ford to Taves re: summary of analytical data showing dioxin content of current production of 2,4,5-T highest single value = 4.8 ppm and lowest being 1.1 ppm.

15519

Author J HARVEY
Addressee PIERCE, HENRY F.
Description Letter from Lyon to Pierce relating that a Visko-Rhap employee had chronic complaint resulting in surgery at Mayo Clinic; how to respond to questions on the herbicide's toxicity.

Exhibit #P0469
PIN # 28125
Date 22-Dec-65
Author JOHN F FRAWLEY
Addressee HARVEY, JOE
Description Letter from Frawley to Harvey at Lyon re: Pierce letter of 11/21/65.

Exhibit #P0473
PIN # 00000
Date 01-Jan-66
Author HERCULES CORP
Addressee HERCULES FILE
Description Clinical Studies - Occupational Acne (1966)
- Translated by Z.B. Blums May 4, 1967.

Exhibit #P0479
PIN # 03896
Date 24-Feb-66
Author E E CHRISTOFANO
Addressee WILDER & SIDWELL, A.D.
FORD, J.J. & EAGAN, J.M.

Description Memo from Christofano to Wilder re: possible NAL study of Jacksonville plant.

Exhibit #P0493
PIN # 01466
Date 20-Jun-66
Author J J FORD
Addressee CHRISTOFANO & DUNN, C.L.
TAVES, N.A. & CONNER, A.Z.
WILMINGTON FILE

15521