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APPENDIX C

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Additional Information for Sections 1.2.4., 3.1.9., and 4.1.8.: The Needs Documentation, the Aquatic Biota of the Waukegan Coastal Zone, and Direct Impacts of PC3's on Aquatic Organisms

pg 21 on

Table 1. Common and scientific names of fish and total weight of fish collected in the Waukegan-Zion area, 1971 (Industrial Biotest, unpublished)

Common Name	Scientific Name	Total Weight (kilograms	Percent of Total
Alewife	Alosa pseudoharengus	6,183.219	66.8
Lake Trout	Salvelinus namaycush	1,148.040	12.4
Rainbow Smelt	Osmerus mordax	999.992	10.8
Bloater	Coregonus hoyi	567.582	6.1
Coho Salmon	Oncorhynchus kisutch	130.925	1.4
Brown Trout	Salmo trutta	46.340	0.5
Lake Whitefish	Coregonus clupeaformis	44.761	0.4
Yellow Perch	Perca flavescens	42.137	0.4
Carp	Cyprinus carpio	36.625	0.3
White Sucker	Catostomus commersoni	16.770	
Chinook Salmon	Oncorhynchus tsahwytscha	13.220	
Slimy Sculpin	Cottus cognatus	5.785	
Lake Herring	Coregonus artedii	5.520	
Goldfish	Carassius auratus	3.350	
Spottail Shiner	Notropis hudsonius	0.567	
Rainbow Trout	Salmo gairdneri	2.600	
Brook Trout	Salvelinus fontinalis	0.900	
Longnose Sucker	Catostomus catostomus	0.670	
Emerald Shiner	Notropis atherinoides	0.567	
Trout-Perch	Percopsis omiscomaycus	0.412	
Golden Shiner	Notemigonus crysoleucas	0.165	
Longnose Dace	Rhinichthys cataractae	0.089	
Ninespine Stickleback	Pungitius pungitius	0.085	
Mud Minnow	Umbra limi	0.040	
Johnny Darter	Etheostoma nigrum	0.002	
	Total	9,252.325	100.0

October. During the spring and summer, lake trout are present most frequently at depths of 70 feet or more. During the autumn, individual lake trout may spend three or more weeks at offshore spawning grounds (shoals) in water up to 100 feet in depth (Industrial Bio-test 1971a). Industrial Bio-test (1971a) reported that lake trout in the Waukegan area originated principally from Illinois or nearby Wisconsin stockings. In the late 1970s lake trout at Waukegan were found to have originated from distant points around Lake Michigan. Scott and Crossman (1973) reported that lake trout disperse after spawning and may move over 100 miles.

Rainbow Smelt

Adult Lake Michigan smelt are reported to be most numerous in the northern portion of the lake (Becker 1976). Based on a field survey at Waukegan in April 1979, Vidal (1979) found smelt were the fourth most numerous fish captured. Hess (1979) reported that the number of smelt captured in the Waukegan area are highly variable from year to year. During 1971 field sampling near Waukegan, Industrial Bio-test (1971a) found smelt present in the nearshore zone during most of the year, but moving offshore in winter. Jude et al. (1979) reported that spawning occurred along beaches or in tributary streams between March and May, depending on locale and weather.

Bloater (Chub)

Based upon a review of the literature and field study at a southeastern Lake Michigan site, Jude et al. (1976) indicated that during summer months bloaters are present in inshore waters only when there are upwellings of cold water. Otherwise, these fish spend little time in the nearshore vicinity, preferring to remain in deeper water where they feed upon plankton and, to some extent, benthic macroinvertebrates. WAPORA, Inc. (1979) reported that bloaters migrate slowly shoreward from May until June or early July and then gradually return to deeper waters as the littoral zone warmed. During sampling in the Waukegan area from April to December of 1971, however, Industrial Bio-test (1971a) found bloaters in the nearshore zone throughout the sampling period. The greatest numbers were reported captured in shallow water areas during June when there were cold water upwellings.

(1976) indicated that spawning occurs in late autumn when the fish move into tributaries or along shallow, rocky, rubble-filled coastal areas. WAPORA, Inc. (1979) reported that young trout occupy the surf zone in the spring prior to moving to deeper water. In recent years, large numbers of spawning brown trout were present in the Waukegan River. Some migration from out-of-state stockings was documented for autumn runs (Vidal 1979).

Lake Whitefish

Industrial Bio-test (1971a) reported that stomach contents of adult whitefish captured in the Waukegan nearshore zone were comprised principally of amphipods. Young whitefish feed on zooplankton and phytoplankton (Smith 1979). Whitefish spawn nocturnally in shallows during late autumn, remaining in shallow water only until the following spring (Jude et al. 1979). Industrial Bio-test (1971a) reported no evidence of spawning activity in the Waukegan area. Hess (1979) reported that only limited numbers of whitefish were present in 1976 spring and autumn fish surveys near Waukegan. Because these recent surveys may not have coincided with the whitefishes' peak of nearshore activity, no conclusions can be drawn from these data concerning the abundance of this species near Waukegan.

Yellow Perch

Young-of-the-year yellow perch are zooplanktivorous which places them in direct competition with alewives. Adult perch are opportunistic, consuming those items that are most abundant at the time of feeding (Jude et al. 1979). Industrial Bio-test (1971a) reported the primary food items of 297 adult perch captured near Waukegan consisted of sculpins, smelt, amphipods, chironomid larvae, and leeches.

Jude et al. (1979) and WAPORA (1979) reported that adult Lake Michigan perch are present in deep, offshore water during the spring and that they move into shallow warm-water areas when the water temperature reaches 6 to 7°C. Yellow perch prefer relatively warm water (Becker 1976) and follow the 20°C isotherm in their movements (Scott and Crossman 1973). Yellow perch were reported to be present in several Illinois harbors during winter months

Benthic macroinvertebrates are considered to be an important secondary producer/consumer when assessing potential impacts. Because these organisms are relatively sessile (attached or restricted in movement), their community composition, abundance and distribution reflect aquatic conditions in the recent past. The character of the benthic community is determined by the availability of oxygen, sediment characteristics, degree of pollution, type of pollutants, scouring by wave action, and other factors. Benthic macroinvetebrates perform an important function in the food web as a secondary consumer of detritus, plankton and other invertebrates. They also are a significant source of food for fish and where they inhabit an area of sediment contaminated with PCBs generally are considered to be a major vector of PCB movement into fish.

Sampling for benthic macroinvetebrates was conducted by Limnetics, Inc. (1974a, 1974b, 1974c, 1974d, 1974e, 1974f) at several stations near the US Steel Plant south of Waukegan, Illinois (Figure 1). Density of organisms, species diversity, evenness, and the sensitivity of organisms to organic pollution are presented for two of the offshore stations nearest to Waukegan Harbor (Tables 2, 3, 4, and 5). Samples were taken in July and August 1974 at a depth of 1.8 meters. The substrate types are fine sand (Station 15) and sand over gravel (Station 17).

The predominant organisms in the benthic macroinvetebrate community as determined by Limnetics, Inc. in 1974 were oligochaetes (aquatic earthworms), amphipods (freshwater shrimp); and dipterons (flies). Isopods (sow buds), gastropods (snails), pelecypods (clams), and hydracarina (water mites) also were present, but in lesser numbers.

A determination of the sensitivity (tolerant, facultative, or intolerant) of each collected species to varying degrees of pollution is based on the literature derived from Weber (1973), Beck (1977), Bunthwist et al. (1968) Fuller (1974), Pennak (1978), and Mason (1973):

- Tolerant organisms are those that generally are capable of thriving under anaerobic conditions (considered gr[illegible] polluted)
- Facultative organisms are those that exhibit a wide range of tolerance to organic pollution, and frequently are present in moderately polluted waters

- o Intolerant organisms are those that are unable to tolerate even moderate levels of pollution or moderate reductions in dissolved oxygen levels.

The majority of the organisms identified were considered to be facultative or tolerant; few intolerant species were present (Tables 4 and 5).

Table 4. Benthic organisms collected during the lake survey conducted in July 1974. (Limnetics, Inc. 1974c). X indicates at least one organism or taxon present in at least two samples taken. T = pollution tolerant; F = facultative; I = pollution intolerant.

	Station 15	Station 17	Sensitivity to Pollution
Oligochaeta			
Nias cf. variabilis	X		F
Stylarua lacistivs	X		F
Potemsthrix moldaviensis	X		T
Unidentified immature Oligochaetes	X		
Amphipoda			
Pontoporeia affenes	X	X	F
Diptera			
Chronomus spp.	X		T, F
Unidentified chironomid pipae	X		
Heterotrissocladius spp.		X	I
Polypedilum spp.		X	F, I
Gastropoda			
Physa Spp.	X		T

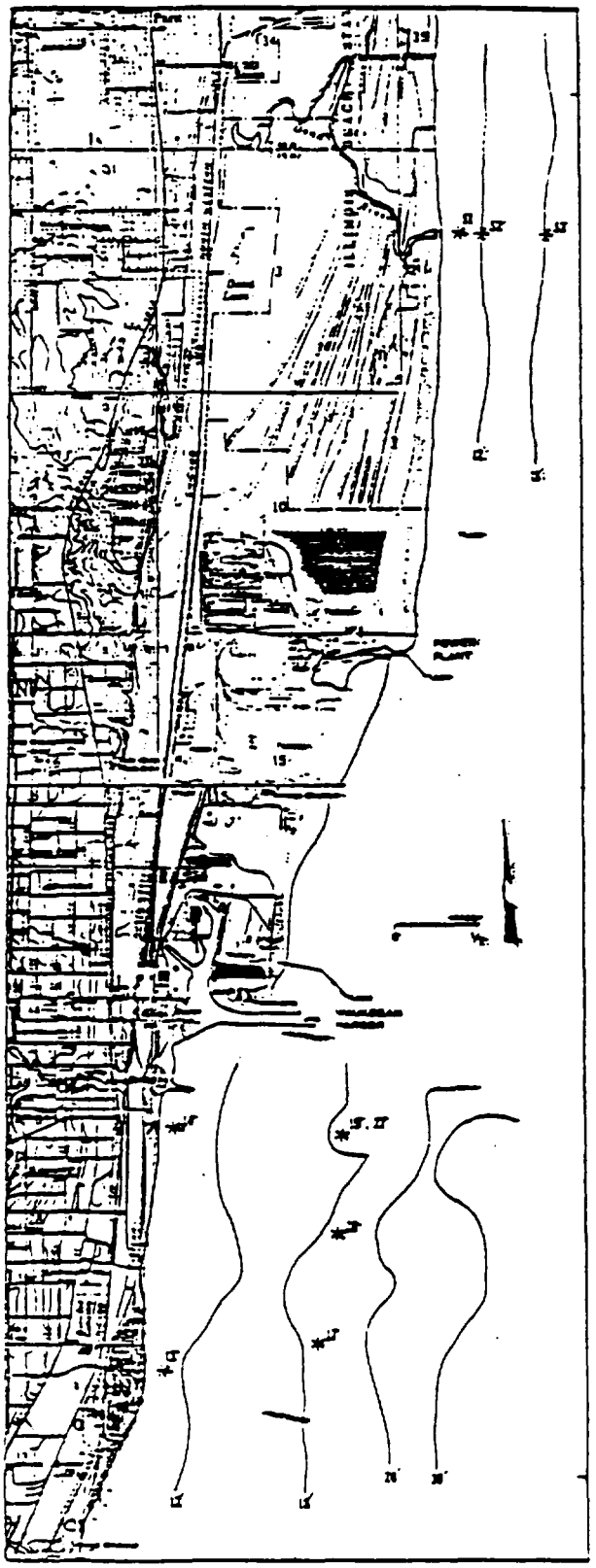


Figure 1. Locations of sampling stations near Waukegan Harbor for benthos, zooplankton, and water chemistry. Derived from Limnetics, Inc. (1974) data.

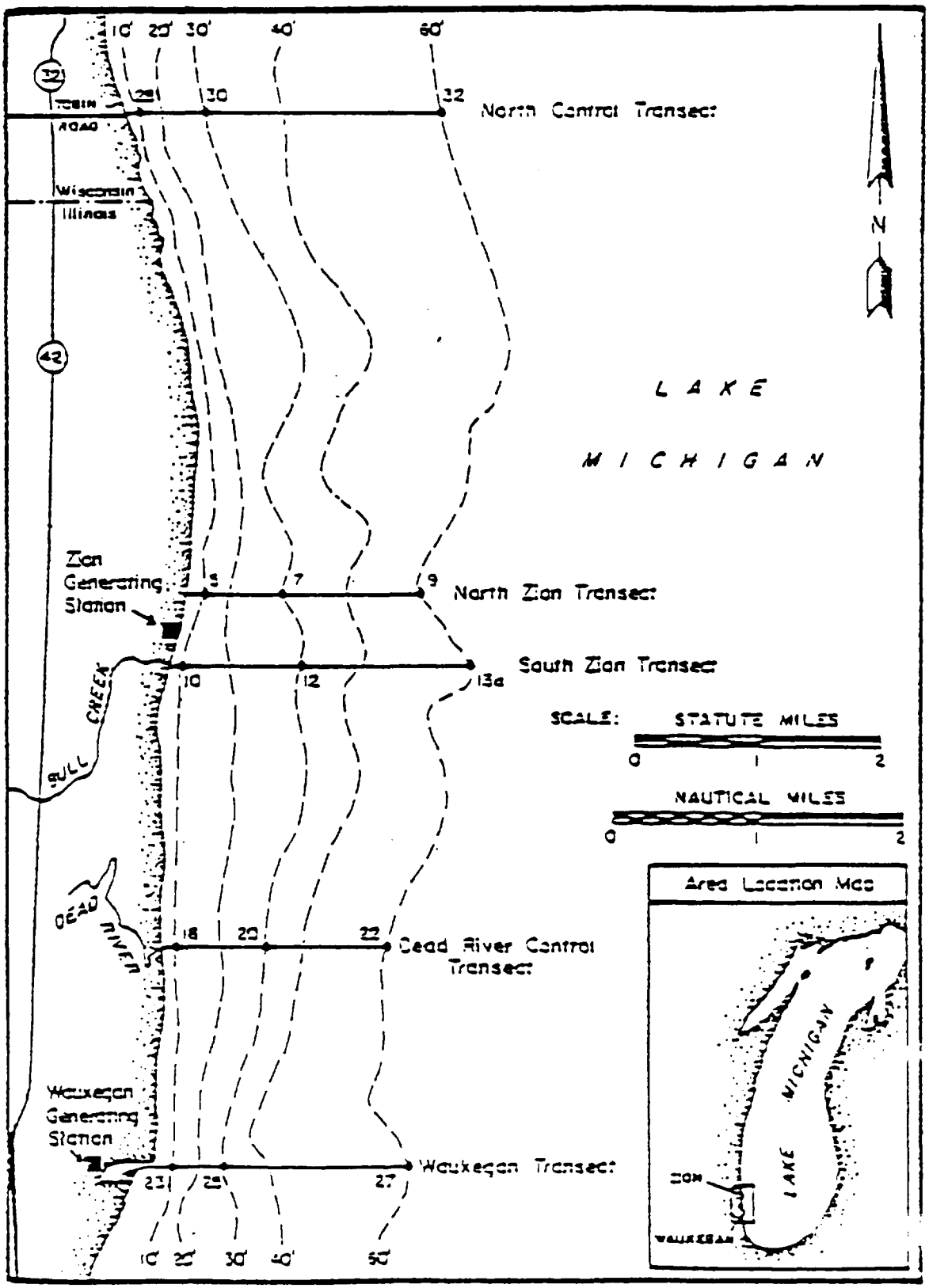


Figure 2. Field sampling stations for phytoplankton; southwestern Lake Michigan near Zion and Waukegan, Illinois, January through December 1972 (Industrial Bio-test 1974).

Table 6. Cont'd.

Phytoplankton	Dominance
Golden-Brown Algae	
Cladomonas fraticulosa	Iu, D
Dichotomococcus lunatus	Iu
Dinobnyon cyclindricum	Iu
Dinobryon divergens	Iu, Db
Dinobryon sociale	Iu, D
Uroglenopsis americana	Iu, b
Blue-Green Algae	
Apnanizomenon flos-aquae	Ib
Aphanothece castagnei	Ib
Aphanothece midulano	Iu
Chroococcus prescoHii	Iu
Coelasphaerium naegelianum	Du
Gomphasphaeria lacustris	Iu
Merismopedia conrduta	Iu
Oscillatoria geminata	Iu, b
Oscillatoria limnetica	Ib
Oscillatoria tenuis	Iu, b

Table 7. Numerical density of phytoplankton in Lake Michigan near Waukegan Illinois, January-December 1972 (Industrial Bio-test 1974). All values are in units per milliliter.

	Sampling Stations			
Date	23	25	27	Monthly Mean
31 January	2845	2240	2576	2220
24 February	1801	1668	1676	1715
15 March	1765	1867	1914	1849
13 April	1687	1628	1832	1706
10 May	9389	8638	1653	6560
13 June	3182	3594	2642	3139
19 July	734	886	573	731
16 August	681	731	544	652
13 September	1387	1071	908	1122
13 October	1145	1102	1193	1147
7 November	919	1308	3048	1758
14 December	841	693	651	728
Mean	2113	2119	1601	1944

Table 9. List of zooplankton collected in southwestern Lake Michigan near Zion and Waukegan, Illinois, during 1972 and 1974 (Industrial Biotest Laboratories, Inc.; Limnetics, Inc. 1974c, 1974d).

Rotifera
- Asplanchna priadonta
- Collotheca Sp.
- Conochilus unicornus
- Gastropus stylifer
- Kellicottia longispina
- Keratella cochlearis
- Keratella crassa
- Keratella earlinae
- Keratella quandrata
- Ploesoma truncatum
- Polyarthra Spp.
- Synchaeta Spp.
- Trichocerca multicrinis

Crustacea
- Copepoda
  - nauplii
  - calanoid copepodites
  - cyclopoid copepodites
  - harpacticoid copepodites
  - Cyclops bicuspidatus thomasi
  - Cylod vernalis
  - Diaptomus
  - Diaptomus ashlandi
  - Diaptomus minutus
  - Diaptomus oregonensis
  - Diaptomus sicilis
  - Epischura lacustris
  - Eucyclops agilis
  - Eurytemora affinis
  - Limnocalanus macrurus Sars
  - Mesocyclops edax
  - Orthocyclops modestus
  - Paracyclops fimbriatus poppei
  - Tropocyclops prasinus
  - Harpacticoida
- Cladocera
  - Alona spp.
  - Alona quadrangularis
  - Bosmina longirostris
  - Ceriodaphnia spp.
  - Ceriodaphnia lacustris
  - Ceriodaphnia quadrangula
  - Chydorus sphaericus
  - Daphinia spp.
  - Daphinia galeata mendotae
  - Daphinia longiremis
  - Daphnia parvula

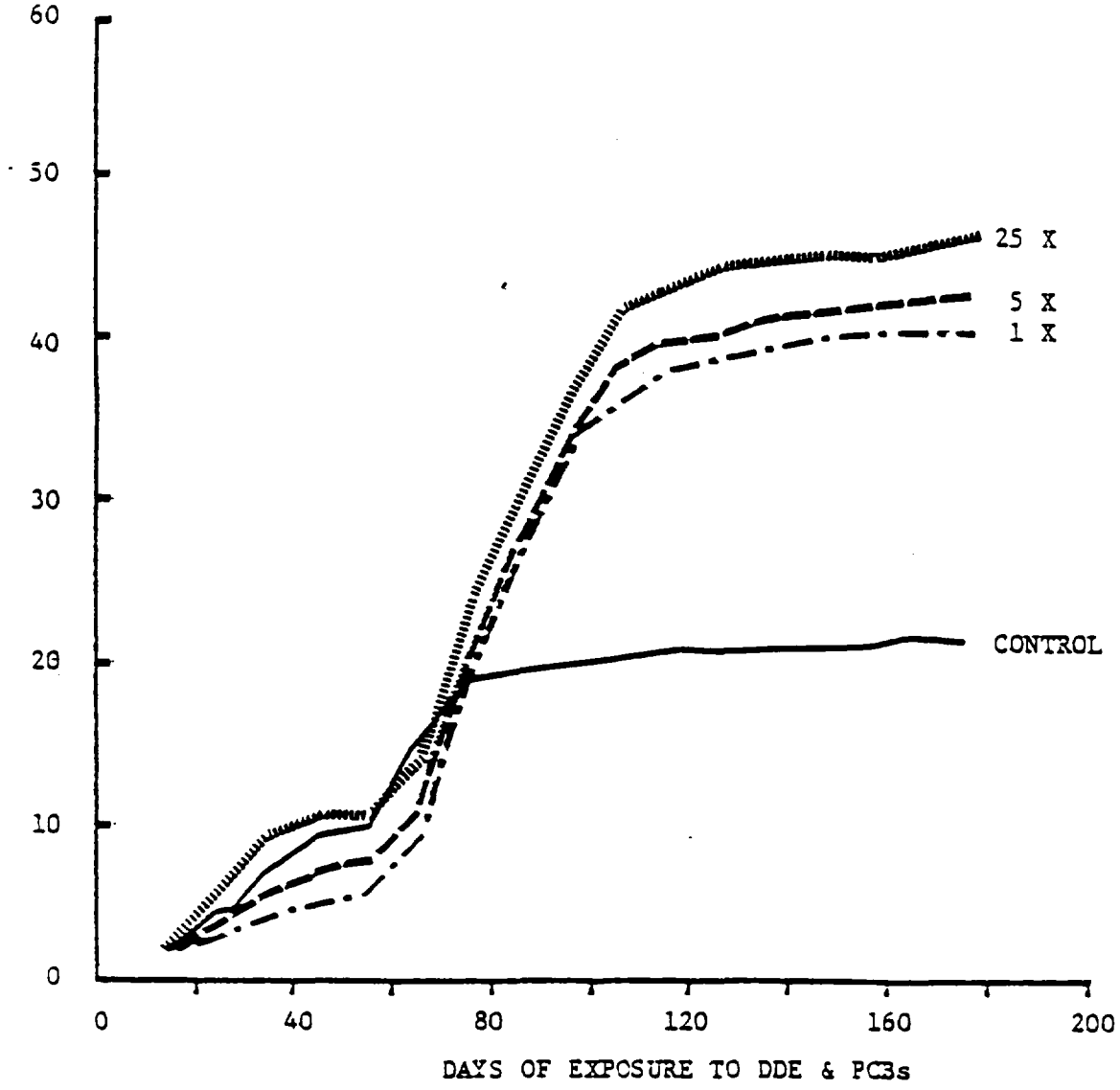


Figure 3. Mortality of fry of Lake Michigan lake trout exposed to DDE and PCBs at concentrations simulating those found in water and plankton of Lake Michigan (1x) and at concentrations 5 and 25 times higher.

Bottom sediments are used as a food source for bottom feeding fish and are commonly the depository for developing eggs and larvae when used as spawning grounds. Additionally, the surface film is a rich food source to many types of young fish (Wangersky 1976). The biological consequences of fish and plankton utilizing bottom and surface zones which are more highly contaminated by PCBs than the water column have not been documented for Lake Michigan. To study such consequences experimentally would be very difficult, in-situ, under Lake Michigan weather and wave conditions. However, it is speculated that an increased environmental hazard exists for fish using the bottom sediments of Waukegan Harbor as a food source or as a spawning site. In the central Waukegan Harbor area fish would encounter PCB concentrations in the surficial sediments ranging from 8-3600 ppm (Armstrong 1980) which is 20,000 - 1,000,000 times more concentrated than the levels typically found in the Waukegan Harbor water column. No PCB concentration data are available for the surface water film of the Harbor and so it cannot be concluded that that sector of the natural environment offers an increased hazard to local fish populations.

The PCBs dispersing from Waukegan are a source of contamination which strongly affects nearshore zone sediments outside the Harbor (USEPA 1981). The PCBs that move out of the Harbor area and settle to the Lake bed (attached to particulate matter) continuously replenish PCBs on the top layer of nearshore sediments. Surficial sedimentary PCB concentrations in southern Lake Michigan are generally higher than in the northern portion of the Lake (Armstrong 1980). Nearshore zone, lake-bed sediments just outside the Harbor are also more highly contaminated than for comparable areas outside uncontaminated southern Lake Michigan harbors (Armstrong 1980).

Game fish which may be present in the Waukegan area and, hence, experience detrimental effects owing to PCBs in the water column, sediments, and surface film, include coho salmon, chinook salmon, lake trout, brown trout, rainbow trout, whitefish, northern pike, largemouth and smallmouth bass, sunfish, black crapple, yellow perch and smelt. To date, 29 fishes (representing a total of 9 species and 6 game species) have been captured in the Harbor for the purpose of determining bioconcentration factors for PCBs. The relative scarcity of some fish in the Waukegan vicinity as evidenced by the low number of species captured could be connected to the high levels of PCBs

Additional Data for Section 1.2.4. and Section 4.1.8.; Plankton

Introduction

Both present and projected future concentrations of PCBs in the water column of Waukegan Harbor have been described in detail by Thomann and Kontaxis (USEPA 1981). The effects of ambient levels of PCBs on photosynthesis by phytoplankton have been estimated through field experiments conducted on the Great Lakes (McNaught et al. 1981). The inhibition of phytoplankton photosynthesis by PCB levels of 5, 100, and 500 nanograms per liter (ng/l) is discussed in this section. Because these toxic compounds have been present in the Great Lakes for for nearly 50 years, the discussion also includes an examination of the effects of their degradation or decomposition products on phytoplankton populations. Current PCB concentrations and PCB concentrations projected to result from the dredging of Waukegan Harbor were used to predict the effect of the dredging on phytoplankton photosynthesis. This prediction is important because phytoplankton form the base of the food chain in Lake Michigan and thus the photosynthesis by these organisms ultimately determines the poundage of sport fish that can be produced in the Lake.

Experimental Effects of Ambient Levels of PCBs on Phytoplankton

The effects on phytoplankton of ambient levels of PCBs, characteristic of present-day environments near Waukegan, Illinois, were estimated on the basis of previous research results (McNaught et al. 1981). The methodology used to obtain these data is described in the following paragraph.

Phytoplankton samples were collected by pump on Saginaw Bay, Lake Huron. Two samples were taken at each of three depths: 0.5, 2.5, and 5.0 meters (m). The small nanoplankton were separated from the larger (less than 22 micrometers in diameter) netplankton by filtration. Six control samples of 1 liter volume (two of each type of plankton) were innoculated with carbon-14 and incubated for 4 hours at the collection depths for measurement of baseline photosynthesis. The experimental samples were incubated in a similar manner after the addition of one of two PCB isomers to each sample. One isomer had six chlorine atoms (hexachlorobiphenyl) and the other had two atoms (dichlorobiphenyl). The former compound is commercially identified as Aroclor 1232 and

Table 10. Relative effects (percent crease or decrease) of hexach obiphenyl on photosynthesis in Lake Huron. Concentrations used were 5, 100, and 500 nanograms per liter (ng/l). Each original value represents the average of three samples, taken at depths of 0.5, 2.5, and 5.0 meters. Photosynthesis was calculated in milligrams of carbon fixed per square meter per hour (mg $C/m^2/hr$).

	Nanoplankton (less than 22 um)			Netplankton (greater than 22 um)		
Date	5 ng/l	100 ng/l	500 ng/l	5 ng/l	100 ng/l	500 ng/l
6 May 1978	+ 3.6	-18.8	-17.3	--	- 8.8	-10.9
10 June 1978	-17.5	--	-27.7	+9.5	-14.0	+ 0.6
9 July 1978	- 6.8	-25.8	-58.9	-1.7	- 2.9	-41.8
13 August 1978	+ 0.3	+13.9	+13.9	-9.6	- 9.8	- 9.9
8 September 1978	- 8.2	- 4.7	- 4.7	-2.1	- 3.3	- 4.1
Mean inhibition	- 5.7	- 8.9	-18.9	-1.0	- 7.8	-13.2

Table 12. Relative effects of hexachlorabiphenyl[(a)] on photosynthesis by plankton in Lake Huron during 1978 (McNaught et al. 1981). Effects are indicated by a percent increase or decrease in photosynthesis, measured in milligrams of carbon fixed per square meter per hour (mg $C/m^2/hr$) over a 5-meter water column.

	Nanoplankton (less than 22 um)			Netplankton (greater than 22 um)		
Month	Parent Isomer	OH-PCB[(b)]	CDBF[(c)]	Parent Isomer	OH-PCB[(b)]	CDBF[(c)]
May	-18.8	- 8.9	-10.6	- 8.8	-2.7	± 0
June	--	--	--	-14.0	+1.5	-16.6
July	-25.8	-52.3	--	- 2.9	-48.6	--
August	+13.9	+13.0	+15.5	- 9.8	-12.2	-26.5
September	- 4.7	- 7.6	- 1.6	- 3.4	- 8.6	-14.4
Mean inhibition	- 8.9	-14.0	- 2.2	- 7.8	-14.1	-14.4

[a]At concentration of 100 nanograms per liter (ng/l).

[b]OH-PCB = 2', 3', 4', 5,5' pentachloro-2-biphenylol, the intermediate hydroxylated degradation product.

[c]CDBF = achlorodibenzofuran, the final furan degradation product

Table 13. Projected levels of PCB in Waukegan Harbor and (Thomann and Kontaxis 1981). Concentrations are per liter (ng/l).

Treatment and Criteria	Projected PCB Level in Harbor Waters	P i
No dredging; continuation of present conditions	300 to 400	
Dredge Slip #3 to reduce sediment PCB level to 500 ug/g	50	
Dredge Slip #3 to reduce sediment PCB level to 50 ug/g	10	

Table 14. Projected inhibition of nanoplankton photosynthe Harbor and nearshore areas, as related to degree (McNaught et al. 1981).

Site	PCB Levels in Water (ng/l)	Percent Phytopla Dichchlo biphen
Waukegan Harbor	500	-11.3
	100	- 2.8
Nearshore Areas	5	- 0.9

Table 15. The effect of dichlorobiphenyl on diatoms (McNaught et al. 1981). The concentratio grams per liter (ng/l).

Dominant Group and Genus	Date	P P
Large diatoms (Stephanodiscus)	6 May 1978	
Small green algae (Scenedesmus)	10 June 1978	
Large green algae (Pediastrum)	10 Ju	

previously known if this phenomenon also occurred in the Great Lakes. If PCBs in the Lakes select against diatoms, other forms of phytoplankton would be expected to be more abundant.

Data on the percentage inhibition of photosynthesis relative to phytoplankton community composition are presented in Table 15. Clearly, the community of phytoplankton dominated by a species of large diatom (Stephanodiscus) that was observed during June was inhibited to a greater degree than was the community observed during July, which was dominated by green algae (Scenedesmus and Pediastrum).

Thus it is apparent that PCBs not only are toxic, but that they are selectively toxic to the phytoplankton of the Great Lakes. If it is intended that a balanced phytoplankton community be maintained, these contaminants and their degradation products must be kept from the waters of the Great Lakes. Furthermore, the PCB concentrations now present in Waukegan Harbor waters are three to four times the level shown to inhibit more than 30% of diatom photosynthesis, and thus would select against the existence of diatom populations within the Harbor. When, as these data indicate, diatoms are more strongly selected against them are the green algae, green algae can be expected to predominate. In a similar fashion, the PCBs may also select for pollution tolerant organisms such as blue green algae. The consequences of such shifts in plankton species abundance may extend to the Great Lakes fish which have evolved to take advantage of an historically different plankton community. It is possible that certain fish species are now indirectly selected against by the presence of PCBs in the water column which reduce the availability of important food (plankton) organisms.

FOR THE EASTERN DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA	:	
	:	
Plaintiff	:	
	:	
v.	:	Civil Action No.
	:	
UNION CORPORATION,	:	
METAL BANK OF AMERICA,	:	
IRVIN G. SCHORSCH, Jr.	:	
JOHN B. SCHORSCH,	:	
	:	
Defendants.	:	

AFFIDAVIT

CHARLES S. STEINER, JR. being duly sworn, deposes and says:

1. I am an aquatic biologist employed by the United States Environmental Protection Agency, Region V, Central Regional Laboratory.

2. I have a Bachelor of Science degree in Education, and a Master of Science in Biological Sciencies. My area of expertise is in aquatic biology with my major emphasis on biomonitoring of toxic chemicals in the aquatic environment.

   Based on my research and observations, I have concluded that polychlorinated biphenyls ("PCBs") in water at very low levels are bioaccumulated by fish in that water. Bioaccumulation is the concentration and storage of "chemical compounds", or there metabolites, within the matrix of a living organisms. That is the magnification of low levels of a given compound, found in the biologic organism's environment, to levels in the organism many times that of the environment.

   Thus, even though PCBs may be present in water at relatively low levels, these PCBs build up in fish in that water to very high levels.

3. In November 1978 I supervised fish bioassay studies using water from Lake Michigan, Waukegan Harbor and the North Ditch tributary to Lake Michigan. These studies were designed to see whether fish bioaccumulated PCBs, and the amount of bioaccumulation.

4. In these studies, live fish yellow perch (Perca flavescens) and bluegill (Lepomis macrochirus)) were placed in cages in Waukegan Harbor.

5. Polychlorinated biphenyls (PCBs) had previously been detected in the waters of Waukegan Harbor. The PCBs during the study measured at concentrations from 2.7 up to 5.0 micrograms per liter (parts per billion).

6. Sixty-five bluegill and forty-three perch were used for the study. Five bluegill and five perch were used as control organisms.

7. Composites of five fish of each species were collected from the cages after 2, 4, 8, 14, 21 and 28 days of exposure to the waters of Waukegan Harbor.

8. On days 0, 14 and 28 water samples were taken from Waukegan Harbor and analyzed for PCBs.

9. The fish composites which were collected were returned to the EPA laboratory and analyzed for PCB content.

10. The results of the analysis are as follows:

    a) After zero days of exposure to the water in Waukegan Harobr, the perch contained 0.156 mg/kg (parts per million PCBs). The bluegill contained 0.207 parts per million (ppm) PCBs.

    b) After two days of exposure to the water in Waukegan Harbor, the perch contained 1.5 ppm PCBs. The bluegill contained 1.29 ppm PCBs.

    c) After four days of exposure to the water in Waukegan Harbor, the perch contained 4.2 ppm PCBs and the bluegill contained 1.81 ppm PCBs.

    d) After eight days of exposure to the water in Waukegan Harbor, the perch contained 5.6 ppm PCBs and the bluegill contained 3.8 ppm.

    e) After fourteen days of exposure to the water in Waukegan Harbor, the perch contained 10.1 ppm PCBs and the bluegill contained 4.2 ppm PCBs.

    f) After twenty-one days of exposure to the water in Waukegan Harbor, the perch contained 19.0 ppm PCBs and the bluegill contained 16.9 ppm PCBs.

    g) After twenty-eight days of exposure to the water in Waukegan Harbor, the perch contained 29.9 ppm PCBs and the bluegill contained 19.7 ppm PCBs.

11. This data shows that the PCBs very rapidly bioaccumulate in fish tissues to alarmingly high levels. This bioaccumulation occurs to such high levels even though the concentration of PCBs in the water in under 5.0 parts per billion.

CHARLES S. STEINER, JR.

Date:

Sworn to and subscribed before me
this 13th day of April 1980.

Mink Farmers Get $1 Million In Damages

CONCORD — A $1,026,400 U.S. District Court jury plaintiff's verdict has been awarded to three mink farmers, one of Bethlehem, for damages allegedly done to mink breeding operations caused by faulty and toxic feed.

The award, one of the largest in recent Concord U. S. District Court history, went to the Bethlehem Mink Farm Inc. which was awarded $658,100; Verner Pettersson of Middleboro, Mass., who obtained $34,300, and James Poole of Sudbury, Mass., who was given a judgment of $334,000.

Defendants in the case were Jurgieloewicz Duck Farm of Riverhead, N. Y.: Agway Inc. of Syracuse, N. Y.: Rozansky Feed Co., Inc. of Seekonk, N. J., and Monsanto Inc. of St. Louis, Mo.

In the complex case, it was charged that through a chain of events involving sales and processing among the defendants, toxic feed reached the plaintiffs which caused between 7 and 20 per cent livestock mortality.

Awards were apportioned on what the jury determined to be negligence and failure to make good on warranty guarantees.

The Bethlehem farm is owned by Dr. Arnold Polansky.

Other awards were determined in third party actions among the defendants. It was determined that Monsanto was responsible in negligence 25 per cent to Jurgielewicz and Agway to Jurgielewicz 75 per cent.

McLANE, GRAF, GREENE, RAULERSON & MIDDLETON
PROFESSIONAL ASSOCIATION
BOX 326
FORTY STARK STREET
MANCHESTER, NEW HAMPSHIRE 03105
TELEPHONE (603) 625-6464

July 17, 1979

Ms. Kay Jacobs
Enforcement Division
U.S. Environmental Protection Agency
230 South Dearborn
Chicago, Illinois 60604

Dear Ms. Jacobs:

Enclosed please find some materials which you requested by telephone. I do have depositions from two different cases of Mr. Papageorge of Monsanto as well as many other materials which you might want to examine if you come to New Hampshire to review the file. As I indicated, the file is approximately four file drawers.

Very truly yours,

James R. Muirhead

JRM:kml

Enclosures

APPENDIX A

HARVARD SCHOOL OF PUBLIC HEALTH

1. Symposium On Certain Chlorinated Hydrocarbons dated 6-30-37.

2. Experiments to determine the possible toxicity of the following substances:
   -- chlorinated diphenyl #1268
      mixture of chlorinated diphenyl and chlorinated diphenyl benzene #5460 dated 9-15-38 by Cecil K. Drinker. M.D.

THE BARNARD FREE SKIN AND CANCER HOSPITAL
St. Louis, Missouri

1. Project W-31 Arolclor (1254) Report on Patch Testing, dated 12-22-49.

THE KETTERING LABORATORY
Cincinnati, Ohio

1. The Toxicity of the Fogs Formed by Dropping Pydraul F-9, Aroclor 1248, and Tricresyl Phosphate, Upon the Surface of a Heated Inconel - dated March 11, 1953.

2. The Toxicity of the Vapor of Aroclor 1242 and of Aroclor 1254, dated June 28, 1955.

SCIENTIFIC ASSOCIATES
St. Louis, Missouri

1. The Acute Oral Toxicity (LD_{50}) of Aroclor 1254 for Rats, dated November 10, 1953.

2. The Acute Oral Toxicity (LD_{50}) of Aroclor 1242 for Rats, dated December 11, 1953.

INDUSTRIAL BIO-TEST LABORATORIES, INC.
Northbrook, Illinois

1. Subacute Dermal Toxicity of Aroclor 1221 dated 3-28-63.

2. Toxicity, Reproduction and Resdie Study on Aroclor 1242, 1254, 1260 in White Leghorn Chickens dated 6-4-70. IBT #J7300.

3. Acute Toxicity Studies With Aroclor 1221, Aroclor 5442, and MCS 1016 dated 3-25-71. IBT #A9378.

APPENDIX A

INDUSTRIAL BIO-TEST LABORATORIES, INC. (Continued)

4. Toxicity, Reproduction and Residue Study With Aroclor 1242, Lot AK-255 in White Leghorn Chickens dated 6-15-71. IBT #J8746.

5. Teratogenic Study With Aroclor 1242 in Albino Rats dated 9-8-71. IBT #B9350.

6. Teratogenic Study With Aroclor 1260 in Albino Rats dated 9-8-71. IBT #B9352.

7. Two-Year Chronic Oral Toxicity Study With Aroclor 1242 in Beagle Dogs dated 11-1-71. IBT #C7299.

8. Two-Year Chronic Oral Toxicity Study With Aroclor 1254 in Beagle Dogs dated 11-1-71. IBT #C7299.

9. Two-Year Chronic Oral Toxicity Study With Aroclor 1260 in Beagle Dogs dated 11-1-71. IBT #C7299.

10. Three-Generation Reproduction Study With Aroclor 1242 in Albino Rats dated 11-1-71. IBT #B7297.

11. Three-Generation Reproduction Study With Aroclor 1254 in Albino Rats dated 11-1-71. IBT #B7297.

12. Three-Generation Reproduction Study With Aroclor 1260 in Albino Rats dated 11-1-71. IBT #B7297.

13. Two-Year Chronic Oral Toxicity With Aroclor 1254 in Albino Rats dated 11-12-71. IBT #B7298.

14. Two-Year Chronic Oral Toxicity With Aroclor 1242 in Albino Rats dated 11-12-71. IBT #B7298.

15. Two-Year Chronic Oral Toxicity With Aroclor 1260 in Albino Rats dated 11-12-71. IBT #B7298.

16. Ninety-Day Subacute Oral Toxicity Study With Aroclor 1221 in Beagle Dogs dated 12-30-71. IBT #C9885.

17. Four-Day Static Fish Toxicity Studies With Aroclor 1221, Aroclor 5432, Aroclor 5442, Aroclor 5460, and MCS 1016 in Bluegills and Channel Catfish dated 1-12-72. IBT #A9380.

APPENDIX A

INDUSTRIAL BIO-TEST LABORATORIES, INC. (continued)

18. Mutagenic Study With Aroclor 1242 in Albino Mice dated 1-13-72. IBT #E621.

19. Mutagenic Study With Aroclor 1254 in Albino Mice dated 1-13-72. IBT #E622.

20. Mutagenic Study With Aroclor 1260 in Albino Mice dated 1-13-72. IBT #E623.

21. 90-Day Subacute Oral Toxicity Study With Aroclor 1221 in Albino Rats dated 4-28-72. IBT #B9888.

22. Toxicity, Reproduction and Residue Study With Aroclor 1221 in White Leghorn Chickens dated 6-20-72. IBT #J900.

YOUNGER LABORATORIES
St. Louis, Missouri

1. Toxicological Investigation of OS-95 dated 2-22-58.

2. Toxicological Investigation of OS-95 dated 10-20-58.

3. The Toxicity of the Thermal Decomposition Products of OS-95 dated 12-8-58.

4. Oral Toxicity (LD_{50}) Rats and Skin Absorption (MLD) Rabbits - Various Aroclors:

Aroclor 1221	6-13-62
Aroclor 1232	6-6-62
Aroclor 1242	6-19-62
Aroclor 1248	6-19-62
Aroclor 1254	6-25-62
Aroclor 1260	6-25-62
Aroclor 1262	6-25-62
Aroclor 1268	7-9-62

5. Toxicological Investigation of: MCS 1109 dated 10-27-71.

APPENDIX A

MONSANTO INDUSTRIAL CHEMICALS COMPANY
Applied Sciences Section
St. Louis, Missouri

1. Determination of Polychlorinated Bipenyl Residues in Albino Rats from a Two-Year Chronic Oral Toxicity Study dated October, 1971 - W. M. Mees, E. S. Tucker, W. J. Litschgi. Job #1348006.

2. Determination of Polychlorinated Biphenyl Residues in Beagle Dog Tissues from a Two-Year Oral Chronic Toxicity Study, dated December, 1972 - W. M. Mees, E. S. Tucker, W. J. Litschgi, J. Cowell. Job #13840.

3. Determination of Polychlorinated Biphenyl Residues in White Leghorn Chickens from a Toxicity, Reproduction and Residue Study with Aroclor 1242, Aroclor 1254, and Aroclor 1260, dated March, 1973 - W. M. Mees, E. S. Tucker, W. J. Litschgi, J. Cowell. Job #1348006.

4. Presentation to the Interdepartmental Task Force on PCBs, Washington, D. C. - May 15, 1972 by Monsanto Company.

UNITED STATES DISTRICT COURT
DISTRICT OF NEW HAMPSHIRE

Bethlehem Mink Farm, Inc. v. Jurgielewicz Duck Trucking, Inc., et al	Civil Action No. 3456
Bethlehem Mink Farm, Inc. v. South Shore Packers, Inc., et al	Civil Action No. 72-148
James Poole and Verner Pettersson v. Jubilee Food Supply, Inc., et al	Civil Action No. 72-273

O R D E R

The Clerk of this Court shall enter judgments in the primary actions in the above-captioned cases as of November 13, 1974, and in the third-party actions as of November 14, 1974. Interest on the judgments shall be computed from the date of the complaints to the date of the judgment at the rate of six per cent (6%) per annum and at the rate of six per cent (6%) per annum from the date of the judgment to the date of satisfaction, plus costs.

Interest will be computed and costs will be taxed by the Court on November 27, 1974, at 2 P. M.

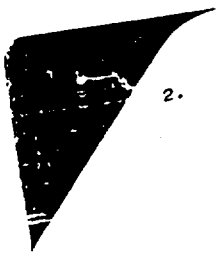
In the judgments, the parties shall be designated as follows as their interest may appear in the pleadings:

Bethlehem Mink shall include Bethlehem Mink Farm, Inc. and Jubilee Food Supply, Inc.

Jurgielewicz shall include Jurgielewicz Duck Trucking, Inc.; South Shore Packers, Inc.; Edward Jurgielewicz, Joseph Jurgielewicz, Ted Jurgielewicz, individually and/or as partners and doing business as Jurgielewicz Duck Farm

Agway shall include Agway, Inc. and Suffolk-Agway Cooperative, Inc.

Bethlehem Mink as plaintiff -
Jubilee Food Supply as defendant only



2.

Monsanto shall include Monsanto Company

Rozansky shall include Rozansky Feed Company, Inc.

Poole shall include James Poole

Pettersson shall include Verner Pettersson

November 20, 1974

United States District Judge

cc
Stanley M. Brown, Esq.
Ronald L. Snow, Esq.
Lawrence E. Spellman, Esq.
Philip G. Peters, Esq.
N. Michael Plaut, Esq.
Thomas H. Richards, Esq.

JUDGMENT ON JURY VERDICT — CIV 31 (7-69)

United States District Court

FOR THE

DISTRICT OF NEW HAMPSHIRE

CIVIL ACTION FILE NO. 72-148

Bethlehem Mink Farm, Inc.
Plaintiff

vs.

South Shore Packers, Inc., et al
Defendants

JUDGMENT

This action came on for trial before the Court and a jury, Honorable Hugh H. Bownes, United States District Judge, presiding, and the issues having been duly tried and the jury having duly rendered its verdict, in the amount of One Million Twenty-Six Thousand Four Hundred Dollars and No Cents ($1,026,400.00)

It is Ordered and Adjudged that the plaintiff recover of the defendants the amount of ONE MILLION TWENTY-SIX THOUSAND FOUR HUNDRED DOLLARS and No Cents ($1,026,400.00), plus interest and costs as follows:

THIRD-PARTY ACTIONS

In the third-party actions, the third-party plaintiffs recover from the third-party defendants, provided, however, that no executions shall issue until the Court has evidence of satisfaction of judgment in the primary action, as follows:

JURGIELEWICZ v. AGWAY

On the Count in Strict Liability
On the Count in Negligence
On the Count in Warranty

JURGIELEWICZ v. MONSANTO

On the Count in Negligence

In the third-party actions, judgment for third-party defendants, and the third-party plaintiffs take nothing as follows:

AGWAY v. ROZANSKY

AGWAY v. MONSANTO

ROZANSKY v. MONSANTO

ROZANSKY v. MONSANTO

Dated at Concord, New Hampshire, this November 14, 1974 day of November, 1974.

November 14, 1974

cc
Stanley M. Brown, Esq.
Ronald L. Snow, Esq.
Lawrence E. Spellman, Esq.
Philip G. Peters, Esq.
N. Michael Plaut, Esq.

Clerk of Court

CIV 31 (7-03)

United States District Court

FOR THE

DISTRICT OF NEW HAMPSHIRE

Bethlehem Mink Farm, Inc.,
Plaintiff

vs.

Jurgielewicz Duck Trucking, Inc., et al
Defendants

CIVIL ACTION FILE NO. 3456

JUDGMENT

This action came on for trial before the Court and a jury, Honorable Hugh H. Bownes, United States District Judge, presiding, and the issues having been duly tried and the jury having duly rendered its verdict, in the amount of Six Hundred Fifty Eight Thousand One Hundred Dollars and No Cents ($658,100.00)

It is Ordered and Adjudged that the plaintiff recover of the defendants the amount of SIX HUNDRED FIFTY EIGHT THOUSAND ONE HUNDRED DOLLARS and No Cents ($658,100.00), plus interest and costs as follows:

THIRD-PARTY ACTIONS

In the third-party actions, the third-party plaintiffs recover from the third-party defendants, provided, however, that no executions shall issue until the Court has evidence of satisfaction of judgment in the primary action, as follows:

JURGIELEWICZ v. AGWAY

On the Count in Strict Liability
On the Count in Negligence
On the Count in Warranty

JURGIELEWICZ v. MONSANTO

On the Count in Negligence

In the third-party actions, judgment for third-party defendants, and the third-party plaintiffs take nothing as follows:

AGWAY v. ROZANSKY

AGWAY v. MONSANTO

ROZANSKY v. MONSANTO

Dated at [illegible], New Hampshire
of November, 1974.

cc
Stanley M. Brown, Esq.
Ronald L. Snow, Esq.
Lawrence E. Spellman, Esq.
Philip G. Peters, Esq.
N. Michael Plaut, Esq.
Thomas H. Richards, Esq.

Clerk of Court

CIV 31 (7-63)

United States District Court

FOR THE

DISTRICT OF NEW HAMPSHIRE

Verner Pettersson,
Plaintiff

vs.

Jubilee Food Supply, Inc., et al
Defendant

CIVIL ACTION FILE NO. 72-273

JUDGMENT

This action came on for trial before the Court and a jury, Honorable Hugh H. Bownes, United States District Judge, presiding, and the issues having been duly tried and the jury having duly rendered its verdict, in the amount of Thirty Four Thousand Three Hundred Dollars and No Cents ($34,300.00)

It is Ordered and Adjudged that the plaintiff recover of the defendants the amount of THIRTY FOUR THOUSAND THREE HUNDRED DOLLARS and No Cents ($34,300.00), plus interest and costs as follows:

THIRD-PARTY ACTIONS

In the third-party actions, the third-party plaintiffs recover from the third-party defendants, provided, however, that no executions shall issue until the Court has evidence of satisfaction of judgment in the primary action, as follows:

JURGIELEWICZ v. AGWAY

On the Count in Strict Liability
On the Count in Negligence
On the Count in Warranty

JURGIELEWICZ v. MONSANTO

On the Count in Negligence

In the third-party actions, judgment for third-party defendants, and the third-party plaintiffs take nothing as follows:

AGWAY v. ROZANSKY

AGWAY v. MONSANTO

ROZANSKY v. MONSANTO

Dated at Concord, New Hampshire, this day of November, 1974.

Clerk of Court

cc
Stanley M. Brown, Esq.
Ronald L. Snow, Esq.
Lawrence E. Spellman, Esq.
Philip G. Peters, Esq.
N. Michael Plaut, Esq.
Thomas H. Richards, Esq.

CIV 31 (7-63)

United States District Court

FOR THE

DISTRICT OF NEW HAMPSHIRE

James Poole,
Plaintiff

vs.

Jubilee Food Supply, Inc., et al
Defendants

CIVIL ACTION FILE NO. 72-273

JUDGMENT

This action came on for trial before the Court and a jury, Honorable Hugh H. Bownes, United States District Judge, presiding, and the issues having been duly tried and the jury having duly rendered its verdict, in the amount of Three Hundred Thirty Four Thousand Dollars and No Cents ($334,000.00)

It is Ordered and Adjudged that the plaintiff recover of the defendants the amount of THREE HUNDRED THIRTY FOUR THOUSAND DOLLARS and No Cents ($334,000.00), plus interest and costs as follows:

THIRD-PARTY ACTIONS

In the third-party actions, the third-party plaintiffs recover from the third-party defendants, provided, however, that no executions shall issue until the Court has evidence of satisfaction of judgment in the primary action, as follows:

JURGIELEWICZ v. AGWAY

On the Count in Strict Liability
On the Count in Negligence
On the Count in Warranty

JURGIELEWICZ v. MONSANTO

On the Count in Negligence

In the third-party actions, judgment for third-party defendants, and the third-party plaintiffs take nothing as follows:

AGWAY v. ROZANSKY

AGWAY v. MONSANTO

ROZANSKY v. MONSANTO

Dated at Concord, New Hampshire, this day of November, 1974.

cc:
Stanley M. Brown, Esq.
Ronald L. Snow, Esq.
Lawrence E. Spellman, Esq.
Philip G. Peters, Esq.
N. Michael Plaut, Esq.
Thomas H. Richards, Esq.

Clerk of Court

UNITED STATES DISTRICT COURT FOR THE

DISTRICT OF NEW HAMPSHIRE

Civil Actions FilesNos. 3456, et al

In the cases of Bethlehem Mink Farm, Inc., Verner Pettersson, and James Poole

v.

Jurgielewicz, Agway, Monsanto, and Rozansky

(See files and pleadings for particular description of cases.)

It is hereby ordered as follows:

1. The time for appeal is extended for thirty days from date.

2. No ruling is made at this time on any post-trial motions.

All parties have agreed that judgment will be rendered against Monsanto and Agway in the proportion of negligence found: 25% for Monsanto and 75% for Agway.

All parties have agreed not to appeal if these judgments are satisfied by December 16, 1974.

Bethlehem Mink Farm, Inc.
By: _____

Verner Pettersson
By: _____

James Poole
By: _____

Jurgielewicz
By: _____

Agway
By: _____

Monsanto
By: _____

Rozansky
By: _____

November 27, 1974

UNITED STATES DISTRICT COURT
FOR THE
DISTRICT OF NEW HAMPSHIRE

Bethlehem Mink Farm, Inc.	)	
	)	
v.	)	Civil Action No. 72-148
	)	
Monsanto Company	)	
	)	

DOCKET MARKINGS

Judgment for the plaintiff in the amount of One Hundred Ninety-Five Thousand Nine Hundred Twenty-Nine Dollars and Forty-Five Cents ($195,929.45), no interest, no costs. Judgment satisfied.

McLane Gray Green & Brown

Attorney for Bethlehem Mink Farm, Inc.

Attorney for Monsanto Company

FOR THE DISTRICT OF NEW HAMPSHIRE

Verner Pettersson, Plaintiff)
)
v.)
) Civil # 72-273
Agway, Inc. and Suffolk Agway Cooperative, Inc.,)
Defendant)

DOCKET MARKING

It is hereby stipulated and agreed by and between the undersigned attorneys for the respective parties hereto that the Concluding Docket Marking in the case Verner Pettersson be entered as follows:

1. Judgement for the plaintiff Verner Pettersson against the defendants Agway in the total amount of Twenty Eight Thousand Five Hundred Dollars ($28,500.00). Said sum includes interest from November 4, 1971 through November 13, 1974 and costs as agreed to by and between the respective parties.

2. Interest on total verdict from November 13, 1974 through December 12, 1974 in the total amount of One Hundred Thirty One and 32/100 Dollars ($131.32).

3. No further action for the same cause.

4. Judgement, costs, interest, and interest since the verdict satisfied in full.

Dated: December 12, 1974

Orr & Reno, P.A.
Attorneys for the Plaintiff

Dated: December 11, 1974

Faulkner, Plaut, Hanna & Zimmerman
Attorneys for the defendant, Agway, Inc.
and Suffolk Agway Cooperative, Inc.

UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF NEW HAMPSHIRE

James Poole, Plaintiff	)	
	)	
v.	)	Civil # 72-273
	)	
Agway, Inc., Suffolk Agway Cooperative, Inc., Defendant	)	

DOCKET MARKING

It is hereby stipulated and agreed by and between the undersigned attorneys for the respective parties hereto that the Concluding Docket Marking in the case of James Poole are to be entered as follows:

1. Judgement for the plaintiff James Poole against the defendants Agway, Inc. in the total amount of Two Hundred Seventy Nine Thousand Dollars ($279,000.00). Said sum includes interest from November 4, 1971 through November 13, 1974 and costs as agreed by and between the respective parties.

2. Interest on total verdict from November 13, 1974 through December 12, 1974 in the total amount of One Thousand Two Hundred Eighty Four and 08/100 Dollars ($1,284.08).

3. No further action for the same cause.

4. Judgement, costs, interest, and interest since the verdict satisfied in full.

Dated: December 11, 1974

Orr & Reno, P.A.
Attorneys for the Plaintiff, James Poole

Dated: December 11, 1974

Faulkner, Plaut, Hanna & Zimmerman
Attorneys for the Defendant, Agway, Inc.
and Suffolk Agway Cooperative, Inc.

No. 14429264

THE TRAVELERS

THE TRAVELERS INSURANCE COMPANY · THE TRAVELERS INDEMNITY COMPANY · THE CHARTER OAK FIRE INSURANCE COMPANY

DATE	CLAIM NO.	DATE OF LOSS	INSURED	RE	POL. FORM & NO.
12-12-7[illegible]	063LB4552901	3-1-71	Monsanto Company	Bethlehem Mink Farm	

POL. YEAR	OFFICE REP. PREM.	STATE	LINE OF INS.	KIND OF PAYMENT	F. OR A.	MISCELLANEOUS
71	STLO 184	MO	TRNSL-PD	Claim	F	

FOR

PAY ONLY ▶$195929.45*

AT SIGHT PAY TO THE ORDER OF

To Manager, P-AD, THE TRAVELERS INSURANCE COMPANY
Davidson Bldg., 1230 Elm Street, Manchester N.H. 03105

544
114

Payable Through
THE AMOSKEAG NATIONAL BANK
Manchester, N.H.

— Bethlehem Mink Farm, Inc.
AND
Stanley M. Brown, their Attorney
Manchester, NH

nal

Authorized Signature D.E. [illegible]

⑈14429264⑈ ⑆011400006⑆ 000⑉101⑉1⑈

No. 14429256

THE TRAVELERS

THE TRAVELERS INSURANCE COMPANY · THE TRAVELERS INDEMNITY COMPANY · THE CHARTER OAK FIRE INSURANCE COMPANY

DATE	CLAIM NO.	DATE OF LOSS	INSURED	RE	POL. FORM & NO.
12-12-71	92-LB-1738955	3-1-71	Agway, Inc.	Bethlehem Mink Farm	

POL. YEAR	OFFICE REP. PREM.	STATE	LINE OF INS.	KIND OF PAYMENT	F. OR A.	MISCELLANEOUS
70	NYJ	VT	TRNSL-PD	Claim	F	

FOR

PAY ONLY ▶$587692.20*

AT SIGHT PAY TO THE ORDER OF

To Manager, P-AD, THE TRAVELERS INSURANCE COMPANY
Davidson Bldg., 1230 Elm Street, Manchester N.H. 03105

544
114

Payable Through
THE AMOSKEAG NATIONAL BANK
Manchester, N.H.

— Bethlehem Mink Farm, Inc.
AND
McLane, Graf, Greene & Brown
Their Attorneys
Manchester, NH

nal

Authorized Signature [illegible]

⑈14429256⑈ ⑆011400006⑆ 000⑉101⑉1⑈

KENNETH F. GRAF
HARRIET E. MANSFIELD
JOHN R. MCLANE, JR.
ARTHUR A. GREENE
STANLEY M. BROWN
ROBERT A. MAVLERSON
JACK B. MIDDLETON
PETER GUENTHER
JOHN A. GRAF
CHARLES A. DEGRANDPRE
JAMES R. MUIRHEAD
PETER B. ROTCH
ARTHUR G. GREENE
ROBERT A. WELLS
R. DAVID DEPUY
JUDITH DUNLOP MULLIGAN
GRENVILLE CLARK, II
JAMES C. MOOD
MICHAEL P. HALL
BRUCE W. FELMLY
STEPHEN J. SELDEN
RICHARD B. SNIERSON
DAVID B. SULLIVAN

MCLANE, GRAF, GREENE & BROWN
FORTY STARK STREET
MANCHESTER, NEW HAMPSHIRE 03105
TELEPHONE (603) 625-6464

JOHN R. MCLANE
1918-1968
JOHN P. CARLETON
(RETIRED)

November 15, 1974

William H. Barry, Jr., Clerk
United States District Court
55 Pleasant Street
Concord, New Hampshire 03301

Re: Bethlehem Mink Farm, Inc., et al vs. Jurgielewicz, et al

Dear Brother Barry:

Enclosed please find plaintiff, Bethlehem Mink Farm's Bill of Costs and its Motion for Judgment with Interest and Costs.

We have calculated the interest from November 4, 1971 to the date of Judgment, namely November 13, 1971 at 6% as $119,431.63. Our costs as taxed are $11,823.96. We will request that on Monday, November 18, 1974 at 3:00 you enter Judgment as follows:

Verdict	$658,100.00 — verdict
Interest to Nov. 13	119,431.63
Costs as taxed	11,823.96
Total	$789,355.59

We have calculated that interest on the total judgment of $789,355.59 is $47,361.34 per year which is $129.76 per day.

Very truly yours,

James R. Muirhead

JRM:jct
Enclosures
cc: Philip G. Peters, Esq.
Edward Kaplan, Esq.
Neil F. Castaldo, Esq.
Thomas H. Richards, Esq.
N. Michael Plaut, Esq.

UNITED STATES DISTRICT COURT FOR THE

DISTRICT OF NEW HAMPSHIRE

Bethlehem Mink Farm	*	
vs.	*	Civil No. 3456
Jurgielewicz, et al.	*	

MOTION FOR JUDGMENT WITH INTEREST AND COSTS

NOW COMES the plaintiff in the above-entitled action and moves as follows:

1. That interest at the rate of 6% per annum from November 1, 1974 be allowed as part of the judgment in the above entitled action.

2. That the Court, in its discretion, allow as taxable costs all costs set forth in plaintiff's Bill of Costs as filed contemporaneously herewith.

3. That judgment be entered for the plaintiff in the amount of Six Hundred Fifty-Eight Thousand One Hundred Dollars ($658,100.00) plus interest at 6% per annum from November 1971 and taxable costs as filed.

4. For such other and further relief as justice may require.

BETHLEHEM MINK FARM
By its attorneys
McLane, Graf, Greene & Brown

By_____

November 15, 1974

I hereby certify that on the 15th day of November, 1974, I have mailed a copy of the within Motion to all counsel.

_____

United States District Court
for the
DISTRICT OF NEW HAMPSHIRE

BILL OF COSTS

Bethlehem Mink Farm v. Jurgielewicz, et al } CIVIL ACTION FILE NO. 3456 et al

Judgment having been entered in the above entitled action on the 13th day of November, 19 74, against Jurgielewicz Duck Farm the clerk is requested to tax the following as costs:

BILL OF COSTS

Fees of the clerk	
Fees of the marshal and Secretary of State	$ 45.00
Fees of the court reporter for all or any part of the transcript necessarily obtained for use in the case	66.08
Fees and disbursements for printing	-
Fees for witnesses (itemized on reverse side)	-
Fees for exemplification and copies of papers necessarily obtained for use in case	276.00
Docket fees under 28 U. S. C. 1923	2436.05
Costs incident to taking of depositions	60.00
Cost as shown on Mandate of Court of Appeals	2900.83 2900
Other Costs (Please itemize)	
Expert fees less Statutory Allowance:	
William Fitzgerald (340.00-51.00)	289.00
Robert Haska (750.00-51.00)	699.00
John Davulis (1474.00-36.00)	1438.00
Craig Yunker (1452.00-36.00)	1416.00
Richard Aulerich (1150-51.00)	1099.00
Robert Ringer (1150-51.00)	1099.00 -6040
Total	$ 11,823.96 8540
	3283.96

State of New Hampshire
County of Hillsborough } ss:

I, James R. Muirhead do hereby swear that the foregoing costs are correct and were necessarily incurred in this action and that the services for which fees have been charged were actually and necessarily performed. A copy hereof was this day mailed to N. Michael Plaut, Lawrence E. Spellman, Philip G. Peters with postage fully prepaid thereon. and Thomas H. Richards

Please take notice that I will appear before the Clerk who will tax said costs on Monday, November 18, 19 74 at 3:00

James R Muirhead
Attorney for Bethlehem Mink Farm

Subscribed and sworn to before me this 15th day of November A. D. 19 74
at Manchester, New Hampshire

Notary Public.

Costs are hereby taxed in the amount of $ this day of , 19 , and that amount included in the judgment.

Clerk.

By Deputy Clerk.

NOTE: SEE REVERSE SIDE FOR AUTHORITIES ON TAXING COSTS.

Witness Fees (computation, cf. 28 U. S. C. 1821 for statutory fees)

Name and Residence	Attendance Days	Attendance Total Cost	Subsistence Days	Subsistence Total Cost	Mileage Miles	Mileage Total Cost	Total Cost Each Witness
William Fitzgerald, N.Y.,N.Y.	1	20.00	1	16.00	150	15.00	51.00
Robert Haska, Raveno, Ohio	1	20.00	1	16.00	150	15.00	51.00
John Davulis, Durham, N.H.	1	20.00	-	-	160	16.00	36.00
Craig Yunker, Durham, N.H.	1	20.00	-	-	160	16.00	36.00
Richard Aulerich, E. Lansing, Mich	1	20.00	1	16.00	150	15.00	51.00
Robert Ringer, E. Lansing, Mich	1	20.00	1	16.00	150	15.00	51.00
					TOTAL		276.00

NOTICE

Section 1924, Title 28, U. S. Code (effective September 1, 1948) provides:

"Sec. 1924. Verification of bill of costs."

"Before any bill of costs is taxed, the party claiming any item of cost or disbursement shall attach thereto an affidavit, made by himself or by his duly authorized attorney or agent having knowledge of the facts, that such item is correct and has been necessarily incurred in the case and that the services for which fees have been charged were actually and necessarily performed."

See also Section 1920 of Title 28 which reads in part as follows:

"A bill of costs shall be filed in the case and, upon allowance, included in the judgment or decree."

The Federal Rules of Civil Procedure contain the following provisions:

Rule 54 (d)

"Except when express provision therefor is made either in a statute of the United States or in these rules, costs shall be allowed as of course to the prevailing party unless the court otherwise directs; but cost against the United States, its officers, and agencies shall be imposed only to the extent permitted by law. Costs may be taxed by the clerk on one day's notice. On motion served within 5 days thereafter, the action of the clerk may be reviewed by the court."

Rule 6 (e)

"Whenever a party has the right or is required to do some act or take some proceedings within a prescribed period after the service of a notice or other paper upon him and the notice or paper is served upon him by mail, 3 days shall be added to the prescribed period."

Rule 58 (In Part)

"The entry of the judgment shall not be delayed for the taxing of costs."

ORR AND RENO
PROFESSIONAL ASSOCIATION
95 NORTH MAIN STREET
CONCORD, NEW HAMPSHIRE 03301

DUDLEY W. ORR
ROBERT H. RENO
CHARLES H. TOLL, JR.
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JOHN W. BARTO
RONALD L. SNOW
CHARLES F. LEAHY
RICHARD B. COUSER
LEO B. LIND, JR.
NEIL F. CASTALDO
MARY SUSAN GALWAY
WILLIAM L. CHAPMAN
DOUGLAS C. MCKENNA

TELEPHONE
AREA CODE 603
224-2381

November 18, 1974

William H. Barry, Esquire, Clerk
United States District Court
District of New Hampshire
Federal Building
Concord, New Hampshire 03301

Re: Mink Farm Litigation

Dear Mr. Barry:

I have enclosed herewith the Bill of Costs and Motion for Judgment with Interest and Costs submitted on behalf of plaintiffs James Poole and Verner Pettersson.

We have calculated the interest from December 20, 1972, to the date of judgment, November 13, 1974, at 6% as $38,048.55 in the Poole case and $3,907.38 in the Pettersson case. The bill of costs, which covers both plaintiffs, amounts to $3,438.93. We will request that on Monday, November 18, 1974, at 3:00, you enter judgment as follows:

Verdict	
James Poole	$ 334,000.00
Verner Pettersson	34,300.00
Interest to November 13	
James Poole	38,048.55
Verner Pettersson	3,907.38
Costs as taxed	3,438.93
TOTAL	$ 413,694.86

Very truly yours,

Neil F. Castaldo

NFC/d
Enclosures

cc: Philip G. Peters, Esq.
N. Michael Plaut, Esq.
Lawrence E. Spellman, Esq.
Thomas H. Richards, Esq.
James R. Muirhead, Esq.

UNITED STATES DISTRICT COURT
FOR THE
DISTRICT OF NEW HAMPSHIRE

James Poole and Verner Pettersson	
v.	Civil No. 3456, et al.
Bethlehem Mink Farm, et al.	

MOTION FOR JUDGMENT WITH INTEREST AND COSTS

NOW COME the plaintiffs in the above-entitled action, James Poole and Verner Pettersson, and respectfully move as follows:

1. That interest at the rate of 6% per annum from November 13, 1974, be allowed as part of the judgment in the above entitled action.

2. That the Court, in its discretion, allow as taxable costs all costs set forth in plaintiffs' Bill of Costs as filed contemporaneously herewith.

3. That judgment be entered for the plaintiff James Poole in the amount of Three Hundred Thirty-Four Thousand Dollars ($334,000.00) plus interest at 6% per annum from December 20, 1972 and taxable costs as filed, and for the plaintiff Verner Pettersson in the amount of Thirty-four Thousand Three Hundred Dollars ($34,300.00) plus interest at 6% per annum from December 20, 1972 and taxable costs as filed.

4. For such other and further relief as justice may require.

James Poole and Verner Pettersson

by their attorneys,
ORR AND RENO, P.A.
95 North Main Street
Concord, New Hampshire

by_____

November 18, 1974

I hereby certify that on the 18th day of November, 1974, I have mailed a copy of the within Motion to all counsel.

_____

United States District Court
for the

DISTRICT OF NEW HAMPSHIRE

Poole and Pettersson vs. Bethlehem Mink Farm, et al. } CIVIL ACTION FILE No. 3456 et al

Judgment having been entered in the above entitled action on the 18th day of November, 1974, against Bethlehem Mink Farm, Jurgielewicz, et al. the clerk is requested to tax the following as costs:

BILL OF COSTS

Fees of the clerk	$ 30.00
Fees of the marshal	53.32
Fees of the court reporter for all or any part of the transcript necessarily obtained for use in the case	--
Fees and disbursements for printing	--
Fees for witnesses (itemized on reverse side)	51.00
Fees for exemplification and copies of papers necessarily obtained for use in case	1,094.50
Docket fees under 28 U. S. C. 1923	40.00
Costs incident to taking of depositions	1,871.11
Cost as shown on Mandate of Court of Appeals	
Other Costs (Please itemize)	
John White (350 - 51.00)	299.00
Total	$ 3,438.93

State of New Hampshire
County of Merrimack } ss:

I, Neil F. Castaldo do hereby swear that the foregoing costs are correct and were necessarily incurred in this action and that the services for which fees have been charged were actually and necessarily performed. A copy hereof was this day mailed to N. Michael Plaut, Lawrence E. Spellman, Philip G. Peters, Thomas H. Richards and James Muirhead, with postage fully prepaid thereon.

Please take notice that I will appear before the Clerk who will tax said costs on Monday, November 18, 1974 at 3:00.

Attorney for James Poole and Verner Pettersson

Subscribed and sworn to before me this 18th day of November A. D. 1974
at Concord, New Hampshire

Notary Public.

Costs are hereby taxed in the amount of $ this day of , 19 , and that amount included in the judgment.

Clerk.

By Deputy Clerk.

Witness Fees (computation, cf. 28 U. S. C. 1821 for statutory fees)

Name and Residence	Attendance Days	Attendance Total Cost	Subsistence Days	Subsistence Total Cost	Mileage Miles	Mileage Total Cost	Total Cost Each Witness
John White, Needham, Mass.	1	20.00	1	16.00	150	15.00	51.00
					TOTAL		51.00

NOTICE

Section 1924, Title 28, U. S. Code (effective September 1, 1948) provides:

"Sec. 1924. Verification of bill of costs."

"Before any bill of costs is taxed, the party claiming any item of cost or disbursement shall attach thereto an affidavit, made by himself or by his duly authorized attorney or agent having knowledge of the facts, that such item is correct and has been necessarily incurred in the case and that the services for which fees have been charged were actually and necessarily performed."

See also Section 1920 of Title 28 which reads in part as follows:

"A bill of costs shall be filed in the case and, upon allowance, included in the judgment or decree."

The Federal Rules of Civil Procedure contain the following provisions:

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"Except when express provision therefor is made either in a statute of the United States or in these rules, costs shall be allowed as of course to the prevailing party unless the court otherwise directs; but cost against the United States, its officers, and agencies shall be imposed only to the extent permitted by law. Costs may be taxed by the clerk on one day's notice. On motion served within 5 days thereafter, the action of the clerk may be reviewed by the court."

Rule 6 (e)

"Whenever a party has the right or is required to do some act or take some proceedings within a prescribed period after the service of a notice or other paper upon him and the notice or paper is served upon him by mail, 3 days shall be added to the prescribed period."

Rule 58 (In Part)

"The entry of the judgment shall not be delayed for the taxing of costs."

UNITED STATES DISTRICT COURT
FOR THE
DISTRICT OF NEW HAMPSHIRE

Bethlehem Mink Farm, Inc., et al. v. Jurgielewicz Duck Trucking, et al.	Civil Action No. 3456, et al.

ANSWERS TO INTERROGATORIES PROPOUNDED BY THE
THIRD-PARTY PLAINTIFFS TO THE
THIRD-PARTY DEFENDANT, MONSANTO COMPANY

1. Identify by full name and address each and every person (as per definition #3) answering the interrogatories set forth below, specifying which questions each such person answers.

A. Mr. William B. Papegeorge, Manager, Product Acceptability, Functional Product Groups, Monsanto Industrial Chemical Company, 800 North Lindbergh Boulevard, St. Louis, Missouri, 63166, as to all answers.

2. If Monsanto is aware of the original developer of PCBs, please identify with respect thereto:

   a. Such person (as per definition #3).

   b. The study (as per definition #6) carried out by such person.

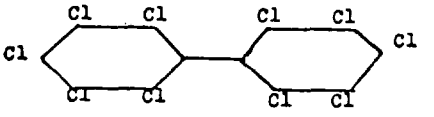
   c. Each and every report (as per definition #6) published by such person as a result of such study.

A. It is impossible for Monsanto to positively identify the originator of polychlorinated biphenyls. Apparently, studies on the subject existed in the year 1881, even before Monsanto Company and its predecessor were formed, and have been continuing since that date. Monsanto, definitly, did not develop polychlorinated biphenyls.

   Research of this type may certainly be conducted by the other parties, and it is not incumbent upon Monsanto to do their research.

3. Please describe (as per definitions #12) the similarities and/or differences of PCBs as originally developed and as presently exist; providing chemical diagrams for each status.

A. Chlorinate biphenyls are a family of chlorinated hydrocarbons having a general formula of:



where Cl indicates the possible positions of chlorine atoms. Statistically there are 210 possible variations of chlorinated biphenyls, making it impractical to describe and provide a chemical diagram for each. Polychlorinated biphenyls might be said to be those with two or more chlorine atoms so attached. Generally speaking, commercial uses of polychlorinated biphenyls are mixtures of the 210 possible isomers with the average percent weight of chlorine being used as a basis for identifying a given mixture. Thus, for example, Aroclor 1242, contains numerous isomers but has an average chlorine content of approximately 42%. Any given isomer of polychlorinated biphenyls is an identifiable chemical compound and thus is incapable of being changed and still remain the same chemical compound; over the years, of course, the relative content of the various isomers in, and other specifications of (i.e. moisture content), a given commerical mixture may have changed. See also references to Aroclor 1016 in the documentation identified in Interrogatory #23.

4. Please identify each and every name, trade name, and trademark by which PCBs have ever been known, to the best of Monsanto's knowledge.

A. Objection.

It is, obviously, possible that polychlorinated biphenyls have been labeled or known in other terms but, presently, Monsanto feels that such research is unreasonable, unnecessary, irrelevant and would be unduly burdensome to it. Furthermore, Monsanto believes that this issue bears no relationship to the issues arising in this litigation. Furthermore, all interested parties may research this matter, and Monsanto is under no obligation to undertake the laborious task of doing such work.

However, in the interest of cooperation and good faith, the following is a list of names and trade names known to the undersigned:

210 Isomers
Chlorinated Diphenyl
Chlorinated Biphenyl
Polychlorinated Diphenyl
Polychlorinated Biphenyl
*Aroclor
Kannechlor
Clophen
Chlorextol
Dykanol
Inerteen
Askarel
Nodanol
*Therminol
*Santotherm
Fenclor
Pyralene
Sovol
Capacitor 21
*Pydraul
*Santovac
*Montar
Pyroclor
*Pyranol - made by Monsanto for G.E.

*Monsanto Company and/or its subsidiary trade name.

5. Identify all manufacturers (as per definition #3), known to Monsanto, which manufacture and/or produce PCBs.

A. To the undersigned's knowledge, the following have produced polychlorinated biphenyls through the years, but it is entirely possible that others may have produced some and that the undersigned is not aware of such fact:

[redacted], Inc., North Haven, Connecticut

Asahi-Denka Kogyo K.K., Japan

Caffaro, Italy

Flix, Spain

[redacted] Industries, Inc., Houston, Texas

I. G. Farbenindustrie A. G., Germany

Kannegafuchi Chemical Company, Japan

Kuhlman, France

Mallinckrodt Chemical Company, St. Louis, Missouri

Mitsubishi Monsanto Chemical Company, Japan

Monsanto Chemical Ltd., England

Monsanto Company, Sauget, Illinois, and Anniston, Alabama (until 1972)

Prodelec, France

Progil, France

Salvanol, Russia

Possibly, there were and/or are other laboratories producing polychlorinated biphenyls.

It has been reported that polychlorinated biphenyls are formed in photodegradation of DDT and in the treatment of sewage, and from the chlorination of biphenyls discharged by users of biphenyls.

6. Identify each and every company (as per definition #3), known to Monsanto, involved in the sale of PCBs.

A. The answer to question 5 applies equally here. Monsanto has in the past utilized distributors in the sale of certain of its products containing polychlorinated biphenyls; if these are necessary, a listing can be compiled.

The business addresses of such distributors, retailers and agents of the other producers are not readily known to the undersigned; the addresses of the manufacturers have been given in the prior interrogatory.

7. State (as per definition #12) all forms in which PCBs are manufactured and/or produced with respect to:

   a. Monsanto

   b. Each company identified in answer to interrogatory #5 hereof.

A. a. Polychlorinated biphenyls range from solids to liquids. Viscosity varies, depending upon the degree of chlorination.

   b. Other companies probably manufacture polychlorinated biphenyls in substantially the same manner as Monsanto.

8. State (as per definition #12) all geographical locations in which PCBs are manufactured and/or produced, specifying as to which company referred to in answer to interrogatory #7 hereof as in each location.

A. It is our feeling that the answer to interrogatory 5 fully answers this interrogatory.

9. State (as per definition #12) all uses, of which Monsanto is aware, that involve PCBs in any manner and to any degree.

A. Obviously, it is impossible for Monsanto to answer this question with any degree of complete accuracy. It has sold polychlorinated biphenyls to many customers over the years and it cannot give "all" possible uses made by its customers, or customers of other producers of polychlorinated biphenyls, but the following list shows the major uses to which polychlorinated biphenyls have been and/or are, presently, being put:

Dielectric Fluids
Heat Transfer Fluids
Industrial Hydraulic Fluids
Inks
Vacuum Pump Fluids
Coatings
Plasticizers
Adhesives
Wax Extender
Lubricants
Caulking Compounds
Carbonless Reproducing Paper

10. State (as per definition #12) all uses which Monsanto has reason to believe involve PCBs in any manner and to any degree.

A. It is Monsanto's feeling that the answer to interrogatory 9 fully answers this interrogatory.

11. What initially led Monsanto into the field of research and development of PCBs?

A. It is extremely difficult to answer this question in 1974 because the answer requires research covering approximately forty years. Monsanto acquired the Swann Chemical Company about forty years ago, and that company was producing polychlorinated biphenyls at that time. Monsanto was also interested in this product because the electrical industry was searching for fire resistant dielectric fluids.

12. Please identify the initial study (as per definition #6) of PCBs done by Monsanto.

A. Monsanto purchased the Swann Chemical Company, of Alabama, about forty years ago. At that time, Swann Chemical Company was producing polychlorinated biphenyls. Presumably and possibly a study of some type was done at that time, but the whereabouts of such study is not now available and not known to me. Generally, records are not kept for forty years, and Monsanto has not, in fact, kept such records, as far as its present investigation has revealed.

13. Were any reports (as per definition #5) made by Monsanto as a result of the initial study of PCBs?

A. Monsanto is unable to answer this question. No reports are available at the present time, concerning such matters that took place forty years ago. The answer to interrogatory 12 applies to this interrogatory.

14. If the answer to interrogatory #13 hereof is in the affirmative, please identify each such report (as per definition #6).

A. Please see answers 12 and 13.

15. Was any report (as per definition #5) made by a person other than Monsanto as a result of Monsanto's initial study?

A. See answers 12 and 13. Since the initial study cannot be identified, we cannot answer this question.

16. If the answer to interrogatory #15 hereof is in the affirmative, please identify each such report (as per definition #6).

A. The answer to interrogatory 15 fully answers this one.

17. Prior to Monsanto's initial study of PCBs, was Monsanto aware of any other specific study (as per definition #6) of PCBs that was carried out by another person?

A. Objection.

Monsanto is unable to answer this question. The passage of forty years or more makes the answer practically impossible, as far as accuracy is concerned. It is, obviously, possible that Monsanto personnel were at that time aware of other studies but it is completely impractical to attempt to establish awareness of any fact that occurred 40 or more years ago. There are indications that people were studying this topic in 1881.

18. If the answer to interrogatory #17 hereof is in the affirmative, kindly identify each such person (as per definition #3).

A. The answer to interrogatory 17 is a complete answer to this question.

19. If the answer to interrogatory #17 hereof is in the affirmative, kindly identify each such study and/or report thereof (as per definition #6).

A. Please see the answer to interrogatory 17, which handles this subject matter adequately.

20. If the answer to interrogatory #17 hereof is in the affirmative, kindly state when such study or report thereof was brought to Monsanto's attention, indicating if it was in the form of written or oral communication.

A. The subject matter of this interrogatory is fully and adequately treated in the answer to interrogatory 17.

21. If a date is provided in answer to interrogatory #20 hereof, please state separately as to each such study or report thereof:

    a. The action followed by Monsanto as a result of such communication, including but not limited to Monsanto's own study.

    b. The results of any such action taken.

A. Monsanto is unable to answer this interrogatory. However, the answer to interrogatory 17 fully gives Monsanto's position concerning the subject matter of this interrogatory.

22. If the answer to interrogatory #17 hereof is in the negative, kindly identify by date when Monsanto first became aware of any specific study of PCBs that was carried out by another person.

A. Again, Monsanto must state that it is unable to answer this interrogatory. It is reported that polychlorinated biphenyls were in existence in 1881 and possibly somebody made studies at that time. Monsanto was organized and established in 1901. It could be assumed that pioneer scientists of Monsanto, at the turn of the century, may have known of such reports but, presently, we are unable to positively answer this question.

Opposing parties certainly have the same opportunity to research this matter, and to require Monsanto to use a battalion of workers to do research covering seventy-three years would be unduly burdensome and oppressive and it bears no relationship to the issues arising in this litigation.

23. With respect to each and every study of PCBs, of which Monsanto is aware, that was carried out by another person after Monsanto's initial study, please identify each such study (as per definition #6).

A. Objection.

Again, this question is too broad and unlimited. It is unduly burdensome, unreasonable and unrelated to the issue at hand. To be required to locate, ascertain and identify all reports so broadly described in this interrogatory would be unreasonable. In a period of over forty years, many studies may have possibly been made in the field. Studies, obviously, often do not involve the issues in this litigation, since they might involve production, manufacturing, sales and other subjects.

In a bibliography dated April 1972, Griffith Quimby listed some [redacted] studies regarding polychlorinated biphenyls from 1881 to 1971. This is a public document and available to all opposing parties. However, in the interest of cooperation and good faith, a copy is attached.

Also in the interest of cooperation and good faith, attached to these answers as Appendix "A" is a description and copies of studies regarding the effects of polychlorinated biphenyls on animals and poultry, which Monsanto believes may be relevant to the issues of this litigation and which Monsanto authorized, participated in or performed and which may not be otherwise readily available to the other parties. Monsanto sincerely believes that the providing of these studies is a fair answer to this interrogatory.

24. For each person identified in answer to interrogatory #23 hereof, please state with respect thereto:

a. Whether Monsanto requested such person to perform such a study.

b. Whether Monsanto subsidized such study, in whole or in part.

c. Whether any person involved in such study was ever employed by Monsanto, specifying whether before or after such study and the dates so employed.

A. a. Sometimes, Monsanto did request such a study.

b. At times, Monsanto did subsidize such a study.

c. The studies in Appendix "A" under the heading Monsanto Industrial Chemicals Company were performed by Monsanto personnel.

25. Identify each and every study (as per definition #6) of PCBs made by Monsanto subsequent to its initial study of PCBs.

A. The answer to this interrogatory is adequately given in the answer to interrogatory 23.

26. Was any report (as per definition #5) made by Monsanto as a result of such subsequent study?

A. "The Presentation to the Interdepartmental Task Force on PCBs" was presented to that Task Force in May of 1972 in Washington, D. C.

27. If the answer to interrogatory #26 hereof is in the affirmative, please identify each such report (as per definition #6).

A. The answer to interrogatory 26 fully answers this question. The report mentioned in answer to interrogatory 26 was given to the Federal Drug Administration, the United States Department of Agriculture, the United States Department of Commerce, E.P.A., C.E.Q., O.S.T., and the report was given to certain officials of the Canadian Government, to professors and to some of our customers. Copies of various of the other studies listed on Appendix "A" and attached hereto have been given to governmental agencies from time to time.

28. Was any report (as per definition #5) made by some person other than Monsanto as a result of Monsanto's subsequent study?

A. Industrial Bio-Test Laboratories, Inc. presented a summary of certain of its tests at the December 1971 conference on polychlorinated biphenyls at the Quail Roost Conference Center, Rougemont, North Carolina.

29. If the answer to interrogatory #28 hereof is in the affirmative, please identify each such report (as per definition #6).

A. See answer to question 28.

30. With respect to the initial study of PCBs by Monsanto, please list all effects noted on animals, poultry, vegetables, minerals, or chemical substances, describing (as per definition #12) each such effect.

A. The answer to interrogatory 12 fully and adequately replies to this interrogatory.

31. For each effect described in answer to interrogatory #30 hereof, state (as per definition #12) separately each and every change in PCBs made by Monsanto including but not limited to chemical composition, labelling, warnings, cautions, marketing procedures and safety factors.

A. The answer to interrogatory 12 constitutes an answer to this interrogatory.

32. For each change described in answer to interrogatory #31 hereof, state (as per definition #12) separately with respect thereto:

a. The basis for each such change.

b. Whether such change initiated further study: identifying such study and any report (as per definition #6) resulting from such study, if affirmative.

A. Please see the answer to interrogatory 12.

33. For each effect described in answer to interrogatory #30 hereof, state (as per definition #12) separately each and every change in PCBs, to the best of Monsanto's knowledge, made by a person other than Monsanto, including but not limited to chemical composition, labelling, warnings, cautions, marketing procedures and safety factors.

A. Please study the answer to interrogatory 12.

34. For each change described in answer to interrogatory #33 hereof, state (as per definition #12) separately with respect thereto, to the best of Monsanto's knowledge:

a. The basis for each such change.

b. Whether such change initiated further study: identifying such study and any report (as per definition #6) resulting from such study, if affirmative.

A. The answer to interrogatory 12 adequately replies to this interrogatory.

35. With respect to each subsequent study of PCBs by Monsanto, please list all effects noted on animals, poultry, vegetables, minerals or chemical substances, describing (as per definition #12) separately each such effect.

A. This interrogatory is answered by answer 23 and the referenced and attached studies.

36. For each effect described in answer to interrogatory #35 hereof, state (as per definition #12) separately each and every change in PCBs made by Monsanto, including but not limited to chemical composition, labeling, warnings, cautions, marketing procedures and safety factors.

A. Objection.

With respect to changes in polychlorinated biphenyls, see answer 3. The balance of the question is objected to because it is too broad, unlimited, irrelevant, immaterial and not restricted to the issues involved in this litigation. The question should limit itself to the specific type of polychlorinated biphenyl germane to this case.

However, in the interest of cooperation and good faith, material labelings, warnings and cautions, on the part of Monsanto, are attached as Appendix "B", and we feel that these materials constitute a fair answer to this interrogatory.

37. For each change described in answer to interrogatory #36 hereof, state (as per definition #12) separately with respect thereto:

a. The basis for each such change.

b. Whether such change initiated further study: identifying such study and any report (as per definition #6) resulting from such study, if affirmative.

A. The answer and the documents relating to interrogatory 36 speak for themselves and constitute a full answer to this interrogatory.

38. For each effect described in answer to interrogatory #35 hereof, state (as per definition #12) separately each and every change in PCBs, to the best of Monsanto's knowledge, made by a person other than Monsanto, including but not limited to chemical composition, labelling, warnings, cautions, marketing procedures and safety factors.

A. It is respectfully submitted that Monsanto, in all fairness, is not in a position to accurately and positively describe the actions of "other persons."

39. For each change described in answer to interrogatory #38 hereof, state (as per definition #12) separately with respect thereto:

a. The basis for each such change.

b. Whether such change initiated further study: identifying such study and any report (as per definition #6) resulting from such study, if affirmative.

A. Please see answer to interrogatory 38.

40. With respect to each study of PCBs by another person prior to Monsanto's initial study, please list all effects noted on animals, poultry, vegetables, minerals or chemical substances, describing (as per definition #12) separately each such effect.

A. Please see answer to interrogatory 17.

41. For each effect described in answer to interrogatory #40 hereof, state (as per definition #12) separately each and every change in PCBs, including but not limited to chemical composition, labelling, warnings, cautions, marketing procedures and safety factors made:

a. By such other person.

b. By Monsanto.

A. The reply to interrogatory 17 gives a full answer to this question.

42. For each change described in answer to interrogatory #41 hereof, state (as per definition #12) separately with respect thereto:

a. The basis for each such change made:

i. By such other person.

ii. By Monsanto.

b. Whether such change initiated further study:

i. By such other person: identifying such study and reports (as per definition #6) resulting from such study, if affirmative.

ii. By Monsanto: identifying such study and reports (as per definition #6) resulting from such study, if affirmative.

A. The answer to interrogatory 17 should be utilized as an answer to this question.

43. With respect to each study of PCBs by another person after Monsanto's initial study, please list all effects noted on animals, poultry, vegetables, minerals or chemical substances, describing (as per definition #12) separately each such effect.

A. Objection.

An analysis of the answer to interrogatory 23, together with all the documents included or referenced therein, will give an answer to this question.

44. For each effect described in answer to interrogatory #43 hereof, state (as per definition #12) separately each and every change in PCBs, including but not limited to chemical composition, labelling, warnings, cautions, marketing procedures and safety factors:

a. Made by such other person.

b. Made by Monsanto.

A. a. Please see answer to interrogatory 38.

b. Please see answer to interrogatory 36.

45. For each change described in answer to interrogatory #44 hereof, state (as per definition #12) separately with respect thereto:

a. The basis for each such change made:

i. By such other person.

ii. By Monsanto.

b. Whether such change initiated further study:

i. By such other person: identifying such study and report (as per definition #6) resulting from such study, if affirmative.

ii. By Monsanto identifying such study and report (as per definition #6) resulting from such study, if affirmative.

A. a. i. Please see answer to interrogatory 38.

ii. Please see answer to interrogatory 36.

b. i. Unknown.

ii. See answer 36.

46. Describe (as per definition #12) each and every change in form, composition, trademark, trade name or other difference from the time Monsanto first developed PCBs to the present, specifying dates.

A. It has already been stated that Monsanto did not develop polychlorinated biphenyls. As to changes in polychlorinated biphenyls, see answer 3. Furthermore, there has been no substantial changes in the original trade names, but others have been added for new applications.

Monsanto sells or has sold polychlorinated biphenyls under trade names listed as such in answer 4.

47. State (as per definition #12) separately whether any of the changes mentioned in answer to interrogatory #46 hereof were the result of:

a. Finding side effects, whether by Monsanto or by another person.

b. Studies, whether by Monsanto or by another person.

c. Complaints, whether made to Monsanto or to another person.

d. Safety factors, whether relating to Monsanto or to another person.

e. Quality control, whether Monsanto's or another person's.

A. a.)
b.)
c.) See answer to interrogatory 46.
d.)
e.)

48. As to each of the answers to interrogatory #47 hereof in the affirmative, describe (as per definition #12):

a. Each side effect found, indicating whether by Monsanto or by another person (identifying such person as per definition #3).

b. Each study, indicating whether done by Monsanto or by another person (identifying such person as per definition #3).

c. Each complaint, indicating whether made to Monsanto or to another person (identifying such person as per definition #3).

d. Each safety factor, indicating whether relating to Monsanto or to another person (identifying such person as per definition #3).

e. Each quality control factor, indicating whether Monsanto's or another person's (identifying such person as per definition #3).

A. The answer to this interrogatory is explained in the answer to interrogatory 46.

49. Please identify each complaint (as per definition #7) referred to in answer to interrogatory #48 hereof.

A. Please see answer to interrogatory 46.

50. State (as per definition #12) all divisions of Monsanto in which quality control work is done.

A. Monsanto has four operating companies as follows:

1. Monsanto Industrial Chemical Company;

2. Monsanto Commercial Products Company;

3. Monsanto Polymers & Petrochemicals Company;

4. Monsanto Textiles Company.

Furthermore, Monsanto has two divisions; one is the International Division, and the other is the New Enterprise Division.

All of the above companies and divisions have their own separate quality control work.

51. Identify the person or persons (as per definition #3) responsible for planning and carrying out the quality control work in each division and referred to in answer to interrogatory #50 hereof.

A. Objection.

Monsanto objects to answering this question, insofar as it concerns any divisions or operating company not involved with polychlorinated biphenyls. It is irrelevant and immaterial as to those divisions and operating companies.

William B. Papageorge has an overall monitoring and coordinating responsibility of the quality control program of polychlorinated biphenyls at Monsanto Industrial Chemical Company.

52. State (as per definition #12) each and every division of Monsanto in which PCBs are produced.

A. Monsanto Industrial Chemicals Company of United States, the operating company, and Monsanto Chemicals, Ltd, of Newport, Wales, United Kingdom.

53. State (as per definition #12) each and every division of Monsanto in which quality control work is done for PCBs.

A. The answer to interrogatory 52 adequately answers this question.

54. Identify the person or persons (as per definition #3) responsible for planning and carrying out the quality control work in each division referred to in answer to interrogatory #53 hereof.

A. Monsanto has answered this interrogatory in answer to question 51.

55. Identify the person or persons (as per definition #3) in charge of quality control for each division of Monsanto.

A. OBJECTION.

Monsanto respectfully objects to this question because it was not restricted to the operating company that produced polychlorinated biphenyls. What other divisions do is completely irrelevant and immaterial, insofar as the issues involved in this litigation. The information is unnecessary and unreasonable.

56. Identify the person or persons (as per definition #3) at Monsanto having responsibility among divisions for quality control.

A. No single individual within Monsanto is in charge of quality control for all divisions. Each division has its own quality control person or persons.

57. State every date upon which quality control work was done by Monsanto with respect to PCBs.

A. The quality control work by Monsanto, with respect to polychlorinated biphenyls, is of a constant and continuous nature. This type of work goes on regularly every day that polychlorinated biphenyls are manufactured.

58. For every date listed in answer to interrogatory #57 hereof, please state (as per definition #12) separately with respect thereto:

a. The reason for which the work was performed (including but not limited to complaints and requests, identifying the same if applicable).

b. The place where the work was performed.

c. The results of the work.

d. The person who performed it.

e. Whether any changes were made in the substance PCBs due to the results.

A. a. Obviously, quality control work is performed to make certain that the specifications for each desired product are met and that the order is completed according to the specifications.

b. The quality control work is done in the plant where the manufacturing takes place, with occasional support and cooperation from research services.

c. The product meets specifications satisfactorily. Occasionally, when the specifications are not met, the product is rejected.

d. All the employees in quality control laboratory are involved, together with all the employees concerned in the work.

e. No.

59. Please identify each and every study (as per definition #6) made as an integral part of the quality control work for PCBs.

A. Throughout the years, many tests have been made on products concerning color, density, viscosity, conductivity in the normal course of business, utilizing test methods generally recognized as appropriate in the industry.

The records of the results of these tests are generally not kept over an extended period of time. It is possible that some records of old procedures may still be available but it would be an unduly burdensome and unreasonable task to search for them.

Present quality control procedures and results will be made available to all opposing parties at the plant or Monsanto's St. Louis offices if the opposing parties desire to inspect the procedures and results.

60. State (as per definition #12) all divisions of Monsanto in which environmental control work is done.

A. OBJECTION.

Monsanto respectfully objects to this question because it is unrestricted, too broad and ambiguous. It is not restricted to divisions concerned with polychlorinated biphenyls, and the extreme breadth of the interrogatory bears no relationship to issues arising in this litigation. It is irrelevant and immaterial.

61. Identify the person or persons (as per definition #3) responsible for planning and carrying out the environmental control work in each division referred to in answer to interrogatory #60 hereof.

A. Please analyze the answer to interrogatory 60.

62. State (as per definition #12) each and every division of Monsanto in which environmental control work is done for PCBs.

A. OBJECTION.

Monsanto objects to this question on the same grounds that it objected to in interrogatory 60.

However, Monsanto will state that the Monsanto Industrial Chemicals Company has undertaken activities relating to the relationship between polychlorinated biphenyls and the environment subsequent to discoveries of polychlorinated biphenyls in the environment. Copies of this type of work have already been marked in the appendix attached to the answers.

63. Identify the person or persons (as per definition #3) responsible for planning and carrying out the environmental control work in each division referred to in answer to interrogatory #52 hereof.

A. Objection.

Please see the answer to interrogatory 62. Obviously, the question is irrelevant and immaterial, insofar as it relates to divisions not concerned with polychlorinated biphenyls.

At the present time, Messrs. William B. Papageorge and Desmond B. Hosmer are responsible for implementing the environmental control work on polychlorinated biphenyls.

64. Identify the person or persons (as per definition #3) who are in charge of environmental control for each division of Monsanto.

A. OBJECTION.

Monsanto objects to this interrogatory on the same grounds as enumerated in answer to interrogatory 60.

65. Identify the person or persons (as per definition #3) at Monsanto having responsibility among divisions for environmental control.

A. There is no single individual who has charge of environmental control per se "among divisions." Each division and operating company has men involved in this type of work, as already described in prior answers.

One of Mr. [redacted] present assignments is co-ordinating Monsanto's environmental activities.

66. State every date upon which environmental control work was done by Monsanto with respect to PCBs.

A. Objection.

It is believed that the answer to 23 fairly answers this interrogatory. Copies of studies, adequately describing the work done, are attached as answer to interrogatory 23. As a matter of fact, many other studies and dates are included in our answer to interrogatory 23 and are to be considered as part of the answer to this interrogatory.

67. For every date listed in answer to interrogatory #66 hereof, please state (as per definition #12) separately with respect thereto:

a. The reason for which the work was performed (including but not limited to complaints and requests, identifying the same if applicable.)

b. The place where the work was performed.

c. The results of the work.

d. The person who performed it.

e. Whether any changes were made in the substance PCBs due to results.

A. Monsanto respectfully states that a, b, c and d are fully answered in the studies specifically enumerated in the answers to interrogatories 23 and 66.

As to changes in polychlorinated biphenyls, see answer 3.

68. Please identify each and every study (as per definition #6) made as an integral part of the environmental control work for PCBs.

A. Please see answer to interrogatory 66.

69. Did Monsanto ever consider or conclude that PCBs should not be used in any specific areas and/or by specific persons or groups of persons and/or in any specific products and/or for any specific uses?

A. Yes.

70. If the answer to interrogatory #69 hereof is in the affirmative, please state (as per definition #12) with respect thereto:

a. The specific areas and/or specific persons or groups of persons and/or specific products and/or specific uses for which or by whom PCBs should not be used.

b. Whether such belief or decision was based upon a study or report, identifying such study or report (as per definition #6), if affirmative.

c. Whether sales were reduced and/or stopped by Monsanto or by others (identifying such persons as per definition #3) as a result.

d. Whether any warning was issued as a result by Monsanto or by others (identifying such persons as per definition #3).

e. Whether any label change was made by Monsanto, providing copies of all labels before and after change, if affirmative.

A. Objection.

a. To fully and completely answer this interrogatory would require an investigation and file review of scope that would be unreasonable, unnecessary and would be unduly burdensome to Monsanto. In the interest of cooperation and good faith, the warning letters attached to these answers which were sent to customers and distributors describe this program. In addition, sales for carbonless reproduction paper were phased out beginning in the fall of 1970 and completed in April 1971.

b. This action was based on all studies mentioned and listed in the answers to these interrogatories and upon the state of knowledge at that time.

c. Yes, as to Monsanto's activities. Inquiries should be made directly to the other producers.

d. Yes, as to Monsanto; Monsanto sent the warning letters previously described and made other contacts with customers. Inquiries should be made directly to the other producers.

e. There were some label changes made by Monsanto, and the changes have already been listed and identified.

71. If any changes were made in PCBs as a result of a study or report referred to in answer to interrogatory #70 hereof, please state (as per definition #12) the following with respect to such changes:

a. The nature of the change.

b. The reason for the change.

c. The date of the change.

d. Whether the change was accompanied by any warnings or cautions.

e. The persons or areas or products or uses affected by such change.

A. As to changes in polychlorinated biphenyls, see answer 3.

72. State (as per definition #12) each and every division of Monsanto which handles any type of complaint.

A. Objection.

Monsanto respectfully objects to this question as being immaterial and irrelevant. The interrogatory is overly broad and unduly burdensome. It would require months of work to get answers to "any" type of complaint in a company which employs a large number of employees and handles hundreds of products at various locations. The question should be restricted so that it conforms to the issues relating to this litigation.

73. Set forth the general procedure for each and every division of Monsanto upon the receipt of a complaint.

A. Objection.

Monsanto respectfully objects to this question because it is too broad, unrestricted and does not relate to the issues of this litigation.

74. Identify the chain of authority upon receipt of a complaint.

A. Objection.

Monsanto respectfully objects to the question as being too vague, ambiguous and too broad. It is not restricted to the issues of this litigation, and the so-called method of authority varies for different types of complaints.

75. State each and every step taken on each complaint concerning PCBs, identifying:

a. Each person (as per definition #3) involved in handling each step.

b. The time involved in handling each step.

c. Detailed description (as per definition #12) of action taken at each step, including but not limited to shipping, storage, use, purchasing, packaging, quality control and selling.

A. Objection.

Monsanto is unable to answer this question because it is too broad and ambiguous. The procedure for handling complaints is different in relation to the type of complaint made to the company. The question is too broad.

76. State (as per definition #12) the basis for each step referred to in answer to interrogatory #75 hereof.

A. Please see answer to interrogatory 75.

77. State (as per definition #12) the steps taken leading directly or indirectly to accomplish the final handling of complaints.

A. Please see answer to interrogatory 75.

78. Identify the place in which all complaints received by Monsanto are filed.

A. OBJECTION. Monsanto is unable to answer this question because it is too broad, unlimited and too vague. There is no one place where all complaints are filed.

79. Identify the person or persons (as per definition #3) who maintain records of each and every complaint:

a. As to the entire company, i.e. Monsanto.

b. As to each and every individual division of the company, i.e. Monsanto.

A. a. None.

b. OBJECTION. This question is overly broad and is not restricted to the issues of this litigation.

80. List all studies made known to Monsanto and/or performed by Monsanto and/or performed at Monsanto's request, concerning PCBs on animal life and/or poultry life.

A. This question has already been answered in interrogatory 23.

81. With respect to each such study answered in interrogatory #80 hereof, please identify each such study (as per definition #6).

A. It is apparent that Monsanto has fully responded to this interrogatory in the answer to question 23.

82. With respect to each such study answered in interrogatory #80 hereof, please state (as per definition #12):

a. The type of animal and/or poultry involved.

b. The type of effect upon each such animal and/or poultry, specifying each type as to:

i. Males:

(a) In control groups.

(b) Not in control groups.

ii. Females:

(a) In control groups.

(b) Not in control groups.

iii. Babies:

(a) In control groups.

(b) Not in control groups.

iv. Fetuses:

(a) In control groups.

(b) Not in control groups.

v. Embryos:

(a) In control groups.

(b) Not in control groups.

c. The occurrences of PCBs in contact with animal and/or poultry life.

d. The mortality rate for each animal and/or poultry, specifying each type as to:

i. Males:

(a) In control groups.

(b) Not in control groups.

ii. Females:

(a) In control groups.

(b) Not in control groups.

iii. Babies:

(a) In control groups.

(b) Not in control groups.

iv. Fetuses:

(a) In control groups.

(b) Not in control groups.

v. Embryos:

(a) In control groups.

(b) Not in control groups.

e. Whether sterility resulted, specifying each type as to:

i. Males:

(a) In control groups.

(b) Not in control groups.

ii. Females:

(a) In control groups.

(b) Not in control groups.

f. The relationship between PCBs and the percentage of births, answering separately as to each type of animal and/or poultry.

A. Monsanto's answer to interrogatory 23 serves as a complete answer to this question.

However, it should be stated, emphatically, that all parties to this litigation have ample opportunity to secure all the reports now available, and Monsanto should not be required to do the homework for its opponents.

83. State (as per definition #12) all intentional or unintentional contact of PCBs with animal life and/or poultry life that has occurred, to the best of Monsanto's knowledge.

A. The intentional and unintentional exposures are inherent in the studies described in the answer to interrogatory 23.

Monsanto has knowledge of varying degrees with respect to unintentional contacts of polychlorinated biphenyls in fishmeal in North Carolina, silos in several states, poultry feed in New York and Maine, mink feed in New Hampshire and Massachusetts, and turkeys in Minnesota, Missouri and California. Most of this information has already been supplied to the opposing parties.

84. State (as per definition #12) all possible contact of PCBs with animal life and/or poultry life, to the best of Monsanto's knowledge.

A. Objection.

Monsanto respectfully submits that this question is not subject to an answer.

85. List separately each and every governmental regulation concerning PCBs as it affects production, control, quality control, labelling, warnings, areas of sale, manners of sale and call backs.

A. As of January 1, 1971, there were none, to our knowledge, except laws and regulations of general application to chemicals and other materials.

86. Was Monsanto ever required by any governmental agency or department to perform a study because of PCBs, in part or in whole?

A. No. In connection with obtaining of construction and operation permits (i.e. incinerator) and developing pollution control compliance programs (i.e. Refuse Act of 1899 Permit Applications), studies of plant operations or of equipment are sometimes necessary; to the extent that polychlorinated biphenyls are produced, used or incinerated, they would be included in such studies but this type of study would have no bearing on this litigation.

87. If the answer to interrogatory #86 hereof is in the affirmative, please state (as per definition #12):

a. The governmental agency or department requesting such study.

b. The full name and address of the individual making each such request.

c. The manner in which such request was made.

d. The reason for the request.

A. No answer required.

88. If the answer to interrogatory #86 hereof is in the affirmative, please describe (as per definition #12):

a. The action taken by Monsanto to comply with each such request.

b. The place where the test was made.

c. The identity of the person (as per definition #3) making the test.

d. The date or dates when the test was made.

e. The results of the test.

f. The type of test made.

g. The changes made, if any, in the composition of PCBs, as a direct or indirect result of the test.

A. No answer required.

89. Please identify all information made known to Monsanto through its own research and/or other means which sets forth the dangers of PCBs to animal life and/or poultry life.

A. This question is already answered in the documents produced relating to interrogatory 23.

90. List all action taken by Monsanto to follow precautions with respect to the known or possible dangers of PCBs to animal life and/or poultry life referred to in answer to interrogatory #89 hereof; stating separately as to each type of animal and/or poultry.

A. Monsanto did take action. Please analyze the warning letters listed in the answers and the labels described in the answers.

Furthermore, Monsanto took steps to limit sales of polychlorinated biphenyls, accepted return for incineration, offered reduced prices on replacement material, refunded purchase price on unused material, developed replacement products, provided analytical assistance, researched degradation, financed studies, etc. In addition, numerous educational and warning conferences were held with customers, governmental agencies, trade associations, equipment suppliers, and other groups to acquaint them with the knowledge as it then existed.

91. For each of the following ingredients commonly used in mink feed, state (as per definition #12) whether Monsanto has knowledge or has reason to believe that PCBs could come into contact with each such ingredient:

a. Cereal mix, including but not limited to breakfast food cereals, alfalfa meal, soy bean meal.

b. Vitamins, including but not limited to A.D.E.

c. Duck byproduct.

d. Beef byproduct.

e. Liver.

f. Fish meal.

g. Cracklings.

h. Midlings.

i. Raw fish.

j. Dried bakery products.

k. Chicken byproducts.

A. Objection.

This question is too speculative because anything is possible.

Very little was known about this issue, if anything, in 1970 and early 1971.

92. For each of the ingredients answered in interrogatory #91 hereof in the affirmative, please state (as per definition #12) separately in what manner the PCBs could come into contact with each such ingredient:

a. Cereal mix, including but not limited to breakfast food cereals, alfalfa meal, soy bean meal.

b. Vitamins, including but not limited to A.D.E.

c. Duck byproduct.

d. Beef byproduct.

e. Liver.

f. Fish meal.

g. Cracklings.

h. Midlings.

i. Raw fish.

j. Dried bakery products.

k. Chicken byproducts.

A. Objection.

Please see answer to interrogatory 91.

93. Please state (as per definition #12) whether Monsanto has taken any measures to insure that PCBs would not come into contact with each of the following ingredients:

a. Cereal mix, including but not limited to breakfast food cereals, alfalfa meal, soy bean meal.

b. Vitamins, including but not limited to A.D.E.

c. Duck byproduct.

d. Beef byproduct.

e. Liver.

f. Fish meal.

g. Cracklings.

h. Midlings.

i. Raw fish.

j. Dried bakery products.

k. Chicken byproducts.

A. This question is answered in the reply to interrogatory 90, together with the listing of the warning letters, label changes and limitations on product sales. Obviously, it is impossible for Monsanto to "insure" for many reasons. Other people manufactured and/or are manufacturing the product, and the product is also imported. A guarantee, obviously, is impossible.

94. Please state (as per definition #12), to the best of Monsanto's knowledge, whether it has knowledge or has reason to believe that PCBs have come into contact with any feed ingredient produced and/or sold by each of the following:

a. South End Grain.

b. Ralston Purina.

c. Quaker Oats.

d. Kellogg.

e. Van Brody.

f. Jurgielewicz Duck Farm.

g. Boston Feed Supply.

h. Eastern Boneless Beef.

i. George Hutt.

j. Coastal Fish.

A. As of April 15, 1971, Monsanto had no knowledge of the above allegations.

95. Please state (as per definition #12), to the best of Monsanto's knowledge, whether it has knowledge or has reason to believe that PCBs have come into contact with any feed ingredient produced and/or sold in any of the following geographical locations, specifying further as to city and/or county and/or state, if known:

a. New Hampshire.

b. Massachusetts.

c. Pennsylvania.

d. New Jersey.

e. New York.

f. Great Lakes region.

A. The records reveal that, ultimately, Monsanto learned of claims and allegations in the above enumerated areas, but all opposing counsel have been given this information by Monsanto in prior sets of interrogatories.

Respectfully submitted,

MONSANTO COMPANY

By: _____
William B. Papageorge

AFFIDAVIT

I, William B. Papageorge, am furnishing the foregoing answers to interrogatories on behalf of Monsanto Company. In doing so, I have answered the questions to the best of my knowledge, information and belief, and taking into consideration my interpretation of the interrogatories.

FOR THE DISTRICT OF NEW HAMPSHIRE

Bethlehem Mink Farm, Inc., Plaintiff v. Jurgielewicz Duck Trucking, Inc., Edward Jurgielewicz, Joseph Jurgielewicz and Ted Jurgielewicz, individually and d/b/a Jurgielewicz Duck Farm, Defendants and Third-Party Plaintiffs v. Agway, Inc. and Monsanto Co., Third-Party Defendants	Civil Action No. 3456

MONSANTO'S ANSWERS TO INTERROGATORIES PROPOUNDED BY JURGIELEWICZ

1. In what state or states is this defendant incorporated?

   A. Delaware.

2. In what state or states, and at what address or addresses does this defendant have its principal place of business and/or principal places of business?

   A. 800 North Lindbergh Boulevard, St. Louis, Missouri 63166

3. By what corporate name is this defendant presently known?

   A. Monsanto Company.

4. Under what corporate name or names has this defendant done business during each of the last ten calendar years?

   A. Monsanto Chemical Company; after April 1964, Monsanto Company.

5. What is the nature of this defendant's business?

   A. Chemicals, plastics, electronics, petroleum and man-made fibers.

6. Does this defendant have any wholly owned subsidiary corporations?

   A. Yes.

7. Does this defendant, as a practical matter, control any other companies which are not wholly owned by it?

   A. The meaning of this question is unclear. However, for purposes of these answers, "subsidiary" shall mean any company in which Monsanto Company, directly or indirectly, owns more than fifty per cent of the stock entitled to vote for the election of directors thereof.

8. Does this defendant or any such subsidiary or such controlled company manufacture any product comprised, in whole or in part, of substances known generically, or otherwise, as:

a. Chlorinated hydrocarbons, including DDT, DDE, endrin and dieldrin;

A. Neither Monsanto Company nor any of its subsidiaries manufacture DDT, DDE, endrin or dieldrin. However, Monsanto Company and its subsidiaries presently manufacture other chemical products which are included in the broad term "chlorinated hydrocarbons."

b. Polychlorinated biphenyls;

A. Yes.

c. Chlorinated dibenzofurans;

A. Neither Monsanto Company nor any of its subsidiaries manufacture chlorinated dibenzofurans.

d. Aroclor, and

A. Yes.

e. Mercury compounds, including methyl and ethyl mercury and metallic and organic mercury?

A. Neither Monsanto Company nor any of its subsidiaries manufacture mercury or mercury compounds.

9. If your answer to Interrogatory #8 is in the affirmative, please state by corporate name, address, and place of incorporation, which of said companies manufactures each of said products comprised, in whole or in part, of substances known generically, or otherwise, as:

a. Chlorinated hydrocarbons, including DDT, DDE, endrin and dieldrin;

A. Neither Monsanto Company nor any of its subsidiaries manufacture DDT, DDE, endrin or dieldrin. In addition to Monsanto Company, 800 North Lindbergh Boulevard, St. Louis, Missouri 63166 (incorporated in the State of Delaware), the following subsidiaries of Monsanto Company presently manufacture other chemicals included in the broad term "chlorinated hydrocarbons:"

Monsanto Australia Limited
East Tower, Princes Gate
151 Flinders Street
Melbourne, Victoria 3000
Australia
Place of Incorporation: Melbourne, Australia

Monsanto Europe S. A.
1, Place Madou
1030 Brussels, Belgium
Place of Incorporation: Brussels, Belgium

Monsanto Chemicals Limited
Monsanto House
10-18 Victoria Street
London SW 1, England
Place of Incorporation: England

b. Polychlorinated biphenyls;

A. In addition to Monsanto Company, 800 North Lindbergh Boulevard, St. Louis, Missouri 63166 (incorporated in the State of Delaware), Monsanto Chemicals Limited, Monsanto House, 10-18 Victoria Street, London SW 1, England (place of incorporation: England) presently manufactures polychlorinated biphenyls.

c. Chlorinated dibenzofurans;

A. Not applicable.

d. Aroclor, and

A. Same as answer to question 9 b above.

e. Mercury compounds, including methyl and ethyl mercury and metallic and organic mercury.

A. Not applicable.

10. Please state the brand name, trade name, or any other name by or under which the defendant or any such subsidiary or company so controlled markets each of its products so comprised, in whole or in part, of substances known generically, or otherwise, as:

a. Chlorinated hydrocarbons, including DDT, DDE, endrin and dieldrin;

A. Neither Monsanto Company nor any of its subsidiaries manufacture DDT, DDE, endrin or dieldrin. See attached Table I for other chlorinated hydrocarbons manufactured by Monsanto Company and its subsidiaries.

b. Polychlorinated biphenyls;

A. See attached Table II for polychlorinated biphenyls manufactured by Monsanto Company and its subsidiaries.

c. Chlorinated dibenzofurans;

A. Not applicable.

d. Aroclor, and

A. See attached Table II for Aroclor manufactured by Monsanto Company and its subsidiaries.

e. Mercury compounds, including methyl and ethyl mercury and metallic and organic mercury.

A. Not applicable.

11. As to each product named in answer to Interrogatory #10 hereof, please state the uses known to or anticipated by this defendant (such subsidiary and/or company so controlled) to which each such product can or may be put.

A. Present common uses are set forth in Tables I and II attached.

12. In what states of the United States does this defendant (such subsidiary and/or company so controlled) attempt to prohibit the re-sale or use of any product named in answer to Interrogatory #10 hereof; answering separately as to each such product?

A. Not relevant because jurisdiction is not being contested.

13. As to each product named in answer to Interrogatory #10 hereof, please state separately whether this defendant (such subsidiary or company so controlled):

a. Sells such product to customers in New Hampshire,

b. Sells to other customers, outside of New Hampshire, with any expectation or belief that such product will be resold or used within the State of New Hampshire.

A. Not relevant because jurisdiction is not being contested.

14. As to each such product named in answer to Interrogatory #10 hereof, please state what reason, if any, this defendant (such subsidiary or company so controlled)has for believing that such product would not be resold or used in New Hampshire.

A. Not relevant because jurisdiction is not being contested.

15. Please identify by name and address all persons, whether corporate or otherwise, who have made claims against this defendant (such subsidiary or company so controlled) for damages allegedly arising out of the use of any product manufactured by them comprised, in whole or in part, of substances known generically, or otherwise, as polychlorinated biphenyls.

A. This question is too general and completely unrestricted. It has no limit as to time and is too broad in its request.

16. Please identify by the name of the plaintiff, the name of the defendant, and the name of the court in which such action was brought, all suits against this defendant (such subsidiary and/or company so controlled), which allege damages arising out of the use of any product manufactured by them comprised, in whole or in part, of substances known generically, or otherwise, as polychlorinated biphenyls.

A. This question is too general and completely unrestricted. It has no limit as to time and is too broad in its request.

17. Please state which of the suits identified in answer to Interrogatory #16 hereof are still pending.

A. See answers to questions 15 and 16.

18. Please identify, by name and address, all companies known to this defendant, or believed by this defendant, to be manufacturers of products comprised, in whole or in part, of substances known generically, or otherwise, as polychlorinated biphenyls.

A. In addition to Monsanto Company and Monsanto Chemicals Limited, the following companies are known to Monsanto Company or believed by Monsanto Company to be present manufacturers of polychlorinated biphenyls:

Geneva Industries, Inc.
Houston, Texas

Kuhlman-Progil
77 Rue de Miromesnil
Paris 8e, France

Bayer
509 Leverkusen-Bayerwerk
Germany

Caffaro
SpA, Via Privata Uasto
Milano, Italy

Flix,
Spain

Salvanol
Russia

STATE OF MISSOURI

COUNTY OF ST. LOUIS

C. B. Holleran, being first duly sworn on oath, deposes and says that he is Assistant Secretary of Monsanto Company; that he has read the foregoing answers to interrogatories and subscribes to the same on behalf of Monsanto Company; that the foregoing answers to interrogatories are based on information communicated to him by Monsanto Company personnel and other persons, and information obtained from books and

records of Monsanto Company, his personal knowledge, and he believes the foregoing answers to interrogatories are true and correct.

MONSANTO COMPANY

By C. B. Holleran
C. B. Holleran
Assistant Secretary

Subscribed and sworn to, before me, this 2nd day of October, 1972, at St. Louis County, Missouri.

Notary Public

MARY F. HARKER, Notary Public
St. Louis County, Missouri
My Commission expires Feb. 16, 1973

Dated:

Attorney for Monsanto Company

TABLE I

TRADE MARK	TRADE NAME	CHEMICAL NAME OF CHLORINATED HYDROCARBON	COMMON USES
		para-Toluenesulfonyl Chloride	Intermediates for dyes, tanning agents, pharmaceuticals, disinfectants, photographic chemicals
Opalon® Ultron® Vyram®		Polyvinyl Chloride	Coatings, foams, films, tubing
Monflex® Monsat® Polvin®		Ethyl Vinyl Chloride	Carpet backing, paper coatings
		ortho-Chlorophenol ortho-Hydroxychlorobenzene 2-Chlorohydroxybenzene	Intermediates for dyes
		para-Chlorophenol para-Hydroxychlorobenzene 4-Chlorohydroxybenzene	Intermediate for dyes, pharmaceuticals, germicides, miticides
		2,4-Dichlorophenol 2,4-dichlorohydrobenzene	Intermediate for dyes, herbicides, germicides, fungicides
		ortho-Nitrochlorobenzene ortho-Chloronitrobenzene	Intermediate for dyes
		para-Nitrochlorobenzene para-Chloronitrobenzene	Intermediate for dyes and pharmaceuticals
		Phthalyl Chloride Phthaloyl Chloride	Plasticizers and resins

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TRADE MARK	TRADE NAME	CHEMICAL NAME OF CHLORINATED HYDROCARBON	COMMON USES
		Vinyl Chloride Monomer	Resins
Tetrathal®		Tetrachlorophthalicanhydride	Flame retardant
Ramrod®		2-Chloro-N-Isopropylacetanilide	Weed control
Randox®		a-Chloro-N-N-diallylacetamide	Weed control
Randox T®		a-Chloro-N-N-diallylacetamide and trichlorobenzyl chloride	Weed control
Far-Go®		S-2,3,3-Trichloroallyl diisopropylthiocarbamate	Weed control
Vegadex®		2-chloroallyldiethyldithiocarbomate	Weed control
		Ethyl chloroacetate	Intermediate for plasticizers
		parachlorometacresol	Rubber additive
		parachlorometazylol	Rubber additive
		Chlorinated Cresylicacid	Rubber additive
Lasso®	Alachlor	2 Chloro-2',6'-diethyl-N-(methoxy methyl) acetanilide	Weed control

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TRADE MARK	TRADE NAME	CHEMICAL NAME OF CHLORINATED HYDROCARBON	COMMON USES
		3,4,4' Trichlorocarbanilide (TCC)	Germicide
ACL®		Trichloroisocyanuric Acid [(Monotrichloro)tetra-(monoO potassium dichloro)]penta-isocyanurate Potassium dichlorosiocyanurate Sodium dichloroisocyanurate	Sanitizer, bleach
		Chlorowax	Coatings, oil additives
Santopoid® S		Tetrachloropropene	Oil Additive Intermediate

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TRADE MARK	TRADE NAME	CHEMICAL NAME OF CHLORINATED HYDROCARBON	COMMON USES
		3,4 Dichloroaniline (3,4 DCA)	Intermediate for dyes and germicides
		Benzyl Chloride alpha-Chloro toluene	Intermediate for dyes, esters, plasticizers, resins, wetting agents, germicides, rubber accelerators, pharmaceuticals, gasoline additives
		ortho-Dichlorobenzene	Degreasing formulations, spot removers, polishes, insecticides, odor control
Santochlor®		para-Dichlorobenzene	Mask odors, mothicide, mildew control, control peach tree borers
		ortho-Chloroaniline ortho-Aminochlorobenzene 2-Chloroaminobenzene	Intermediate for the manufacture of dyes and insecticides
		para-Chloroaniline para-Amino-chlorobenzene 4-Chloro aminobenzene	Intermediate for dyes
	Penta	Pentachlorophenol, technical	Fungicide, termite control, herbicides, bactericide
Santobri e®		Sodium Pentachlorophenate, technical	Preservative, fungicide, herbicide, bactericide
Santoph l Germ e		ortho-benzylparachlorophenol	Germicide

TABLE II

TRADE MARK	TRADE NAME	COMMON USES
Aroclor®	Askarel	Dielectric fluid
Capacitor 21®	Askarel	Dielectric fluid
Inerteen®	Askarel	Dielectric fluid
Pyranol®	Askarel	Dielectric fluid
Pydraul®		Industrial hydraulic fluid