Data from Vicinity of Monsanto Co., Sauget, IL.

Aroclors have been produced by Monsanto Co. at the Sauget, Illinois site since prior to 1957. PCB mixtures ranging from 16 percent chlorine to 68 percent chlorine have been produced over the years. Production of the higher percent chlorine mixtures has been voluntarily reduced since 1970 and lower substituted isomers have been introduced. Polychlorinated terphenyls and chlorinated benzenes have also been produced at this facility. It is reported (Papageorge, 1975) that terphenyl production was suspended in 1971.

A typical chromatogram of a soil sample taken in the vicinity of the Monsanto facility is shown in Figure 8 along with the chromatogram of several other PCBs run under the same instrument conditions. This particular soil sample contains 11 ppm Aroclor 1242, 9.3 ppm Aroclor 1260 and 1.0 ppm decachlorobiphenyl. Lighter chlorinated Aroclor mixtures are likely present as well. The instrument conditions employed, however, do not give adequate separation of these mixtures to permit accurate quantification. The presence of decachlorobiphenyl at the concentrations observed is interesting. Decachlorobiphenyl has been reported as a component of only one Aroclor mixture, Aroclor 1268 (Hutzinger, Safe and Zitko, 1974). Whether it may be a component of any of the terphenyl mixtures or biphenyl/terphenyl mixtures or a by-product is not known.

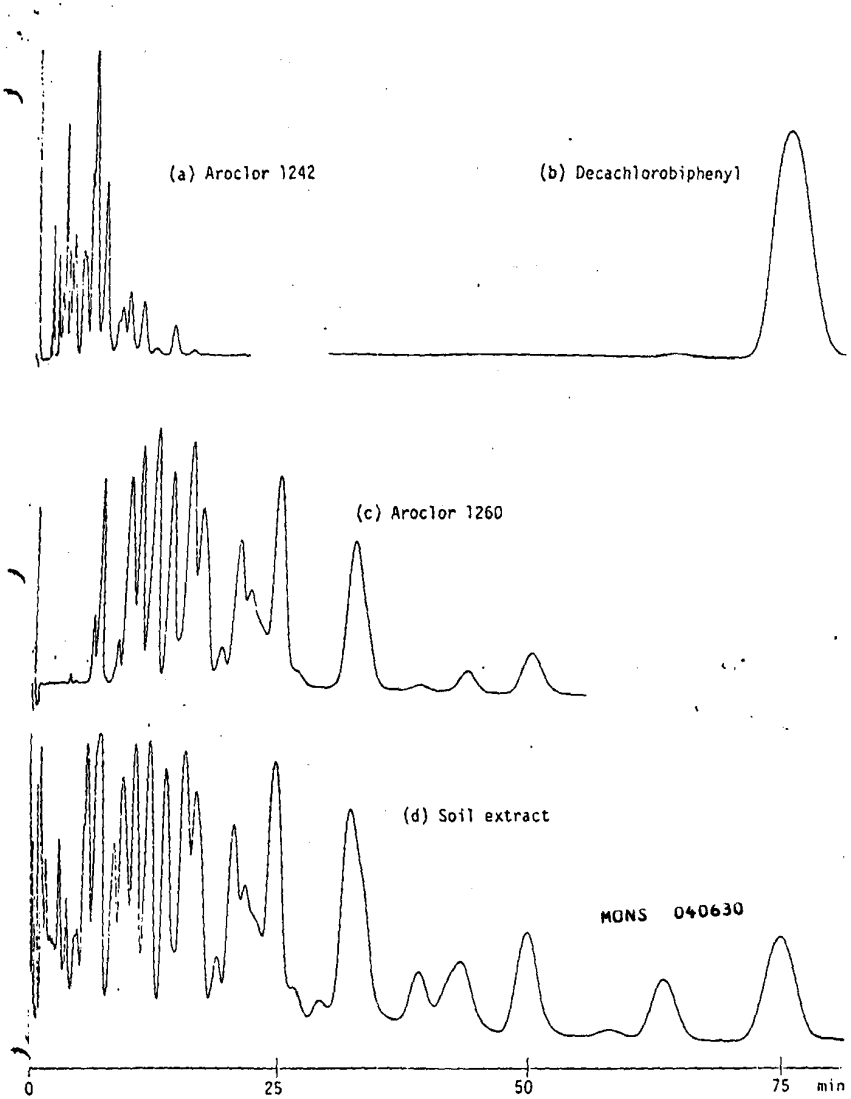

Figure 8. Typical chromatograms of standard Aroclors, decachlorobiphenyl and a soil sample taken in the vicinity of Monsanto Co., Sauget, Illinois.

The measured soil concentration of Aroclor 1242, Aroclor 1260 and decachlorobiphenyl in the vicinity of the Monsanto facility are depicted in Figures 9, 10 and 11, respectively. Figure 12 shows the long-term average wind direction in the area. The distribution of all PCBs analyzed appears to be higher near the plant site and generally decreasing with distance from the site. Furthermore, there is evidence that generally higher concentrations are present in the soils located to the southeast. This corresponds to the predominant wind direction and may suggest an airborne transport of the PCBs from the facility.

One 15 cm deep core sample was taken 1/2 mile southwest of the Monsanto site. Analysis of the bottom 11 cm of this soil yielded PCB concentrations basically equivalent to the top 4 cm.

A 24-hour composite sample from the influent and the effluent of the Sauget village sewage treatment plant taken beginning 0800 on February 17, 1975, was provided by plant personnel. The Monsanto Co. jointly owns this facility. Analysis of these samples were as follows:

	Aroclor 1242	Aroclor 1260	Decachlorobiphenyl
influent	6.8 µg/l	8.7 µg/l	<0.01 µg/l
effluent	4.5 µg/l	4.7 µg/l	<0.01 µg/l

The treatment plant effects a reduction of 34 percent Aroclor 1242 and 46 percent Aroclor 1260. No decachlorobiphenyl was detected.

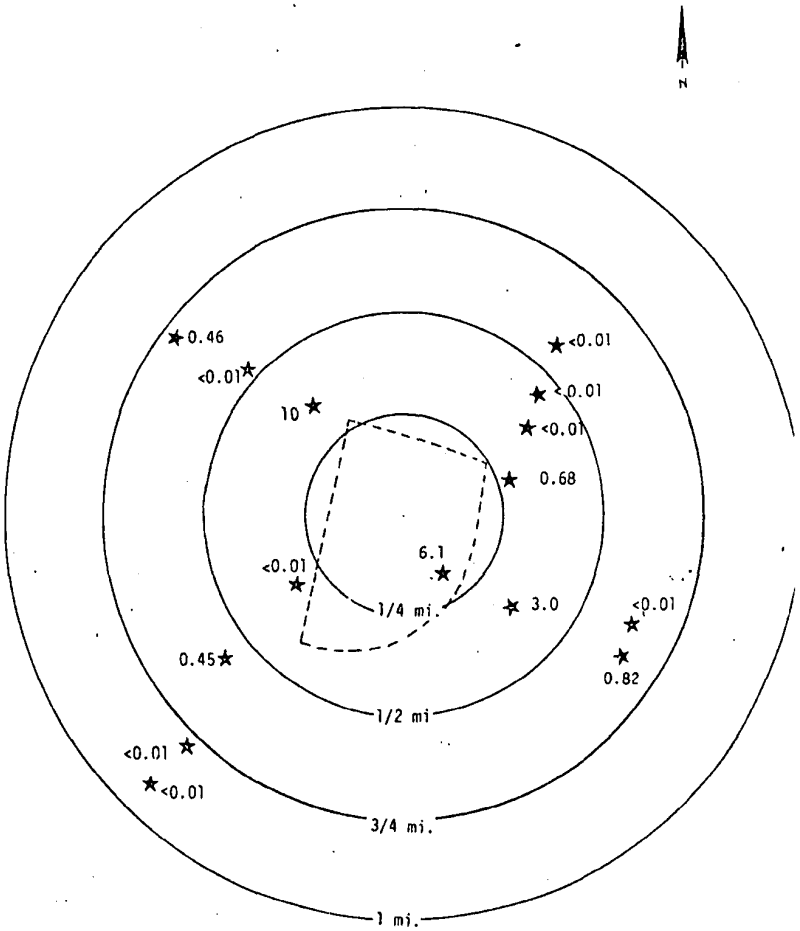

Figure 9. Concentration of Aroclor 1242 in soil as a function of distance from Monsanto Mfg. Co. Concentrations are expressed in ppm.

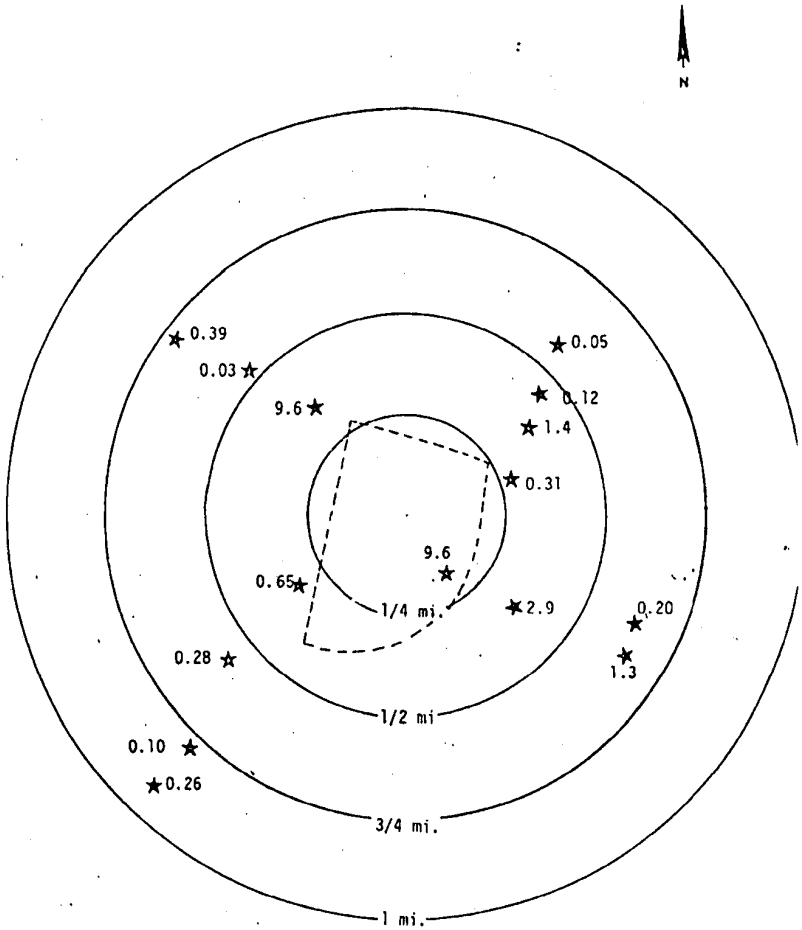

Figure 10. Concentration of Aroclor 1260 in soil as a function of distance from Monsanto Mfg. Co. Concentrations are expressed in ppm.

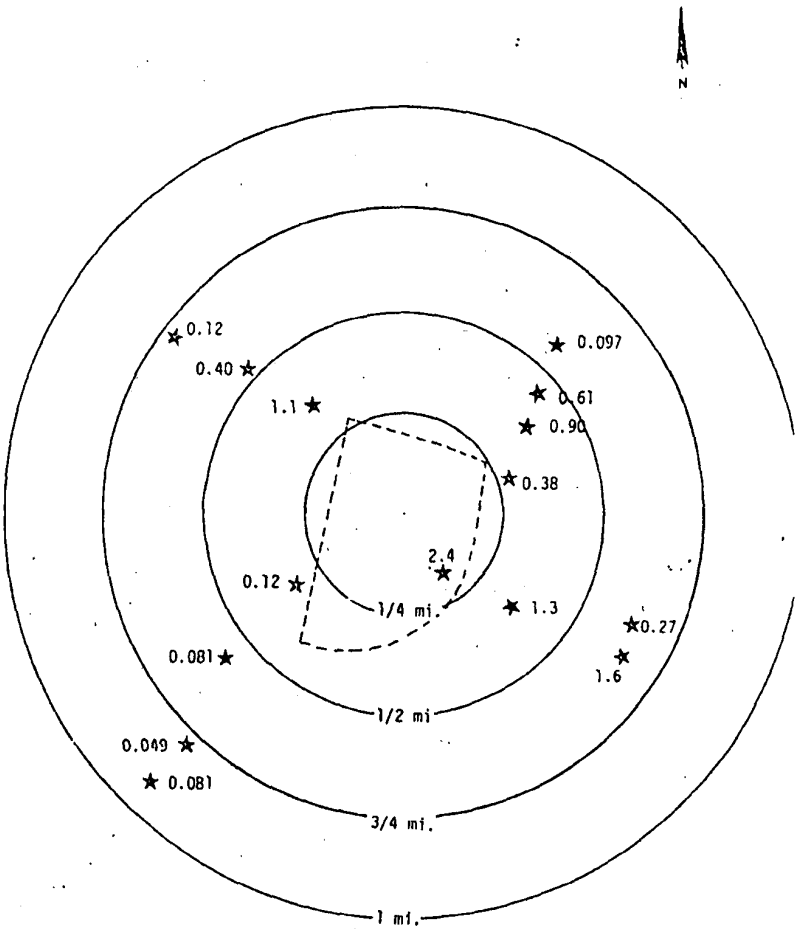

Figure 11. Concentration of decachlorobiphenyl in soil as a function of distance from Monsanto Mfg. Co. Concentrations are expressed in ppm.

MONS 040634

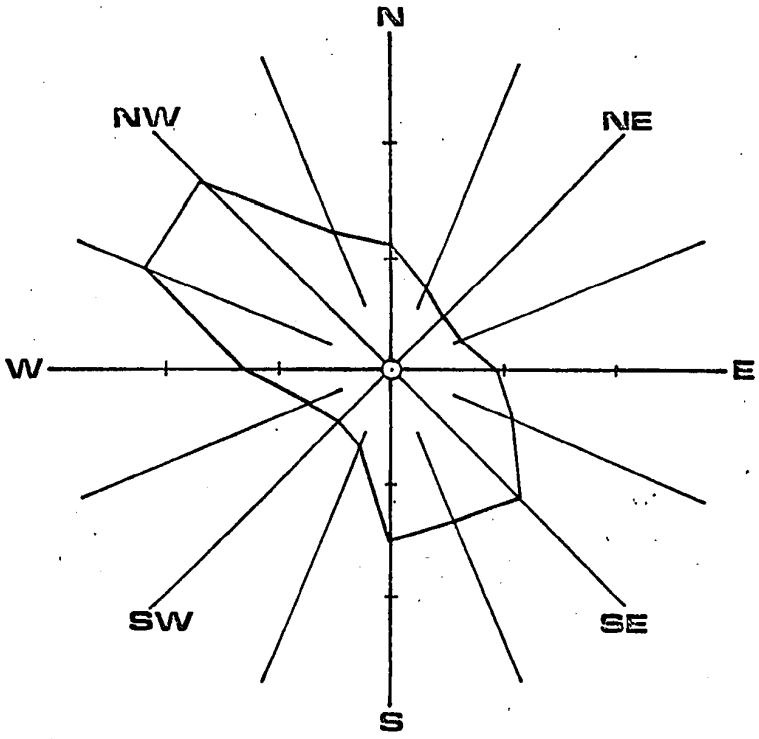

Figure 12. Ten Year Averaged Wind Rose for St. Louis, Missouri, January through March, 1951-1960.

Scale: 1" = 5% Calm Winds = 2.0%

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