

Health Consultation

**CORNELL DUBILIER ELECTRONICS INCORPORATED
SOUTH PLAINFIELD, MIDDLESEX COUNTY, NEW JERSEY**

CERCLIS NO. NJD981557879

SEPTEMBER 9, 1997

**U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Agency for Toxic Substances and Disease Registry
Division of Health Assessment and Consultation
Atlanta, Georgia**

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Prepared by:

Exposure Investigation and Consultation Branch
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Background and Statement of Issues

The Region II U.S. Environmental Protection Agency (EPA) has requested that the Agency for Toxic Substances and Disease Registry (ATSDR) review analytical data of fish samples collected from surface water near the Cornell-Dubilier Electronics (CDE) site and determine if polychlorinated biphenyls (PCBs) are present in fish at levels of public health concern.

The CDE site is located at 333 Hamilton Boulevard in South Plainfield, Middlesex County, New Jersey [1]. The 25 acre site is located in an industrial/commercial/residential area and is bordered by commercial businesses and residences on the south, west, and north, and on the southeast, east, and northeast by an unnamed tributary to Bound Brook [1].

During the 1950s, Cornell-Dubilier Electronics, Inc. manufactured electronic parts and components, and tested transformer oils. Discarded electronic components were landfilled onsite and transformer oils contaminated with PCBs were reportedly dumped directly onto site soils [1]. The company vacated the site in the early 1960s.

The site is currently known as the Hamilton Industrial Park and is occupied by an estimated 15 commercial businesses. Numerous companies have operated at the site as tenants over the years [1].

An unnamed creek that borders the site to the southeast, east, and northeast flows into Bound Brook. The confluence of the unnamed creek and Bound Brook is approximately 800 meters downstream of the site. Bound Brook then flows west for approximately 3,000 meters and enters New Market Pond. Available information indicates that fish are being caught and eaten from Bound Brook and New Market Pond [2].

The EPA has conducted sampling events at the site. In mid-1996, several surface soil samples (0 - 3 inches and 0 - 6 inches) were collected from a 1.5 acre fenced area at the site and analyzed for PCBs; PCBs were detected at a maximum concentration of 51,000 parts-per-million [3].

In mid-1996, the EPA collected surface soil samples (0 - 3 inches) from 23 locations at the site [1]. Samples were analyzed for PCBs; PCBs were detected at concentrations ranging from 3.6 to 3,000 ppm [1].

A fish sampling event was conducted in surface waters adjacent to and near the CDE site. Fish were collected from the following locations:

Three areas of Bound Brook located downstream from the CDE site

Two areas of New Market Pond

The unnamed creek at a location immediately adjacent to the CDE site

The unnamed creek at a reference location 1,000 meters upgradient of the CDE site [4].

Fish filets were analyzed for PCBs. PCBs were detected at maximum concentrations indicated in Table 1 [4].

Table 1. Maximum Concentrations of PCBs Detected in Fish Filets

<u>Location</u>	<u>Concentration (ppm)</u>
Bound Brook	12.2
New Market Pond	36.0
Adjacent, CDE	9.8
Reference Location	7.8

Note: Fish ranged in total length from 4.1 to 25.6 inches (average = 10.9 inches). Fish ranged in total weight from 0.8 to 35.4 ounces (average = 9.7 ounces)

Discussion

PCBs are persistent in the environment and break down slowly. In water, PCBs partition significantly from water to aquatic organisms, such as fish [5]. The bioconcentration factors (BCF) of various PCBs in aquatic animals vary from 26,000 to 660,000; BCF is defined as the ratio of the concentration of a contaminant in aquatic organisms to the concentration of the contaminant in the surrounding water. Evidence also indicates that PCBs biomagnify within the food chain [5].

In humans, long-term exposure to PCBs can affect the skin and liver; reproductive, endocrine, immunosuppressive, and carcinogenic effects have been observed in animal studies [5,6] PCBs have very low potential for producing acute toxic effects [6].

Consumption of fish that contain elevated levels of PCBs can result in exposures at levels of public health concern. The Food

and Drug Administration (FDA) has set tolerances for PCBs in the edible portions of fish at 2 ppm [7]. Tolerances are established at levels that are sufficient for the protection of public health [8]. The tolerance level of 2 ppm PCBs was exceeded in at least one sample of each of the species collected [4].

Conclusions

Based on the available data, ATSDR concludes that PCBs in fish collected in surface water near the Cornell-Dubilier Electronics Site in South Plainfield, New Jersey exceed FDA tolerance levels for PCBs in fish and are at levels of public health concern.

Recommendations

Fish that contain greater than 2 ppm PCBs in the edible portion of the fish should not be eaten.

If further clarification is required or if additional information becomes available, please do not hesitate to contact this office at 404/639-0616.



Steven Kinsler, Ph.D.
Senior Toxicologist

References

1. ATSDR Record of Activity, Cornell-Dubilier Electronics, Log # 97-1004, S. Kinsler, October 30, 1996.
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4. Bound Brook Sampling and Edible Fish Tissue Data Report, Cornell-Dubilier Electronics Site, South Plainfield, New Jersey, Prepared By: Environmental Response Team Center, Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, July 1997.
5. Toxicological Profile for Polychlorinated Biphenyls, U.S. Department of Health and Human Services, Agency for Toxic Substances and Disease Registry, April 1993.
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7. Code of Federal Regulations, Title 21, Volume 2, Chapter 1, Part 109, Section 109.30--Tolerances for polychlorinated biphenyls (PCBs), April 1, 1996.
8. Code of Federal Regulations, Title 21, Volume 2, Chapter 1, Part 109, Section 109.4--Establishment of tolerances, regulatory limits, and action levels. April 1, 1996.