NPL Site Narrative for Fox River NRDA/ PCB Releases

FOX RIVER NRDA/PCB RELEASES
Green Bay, Wisconsin

This listing addresses the zone of contamination (ZOC) for the Fox River Natural Resources Damage Assessment (NRDA)/PCB Releases (Fox River PCB Releases) beginning on the Neenah Channel and Menasha Channel sections of the Fox River, 38.2 miles upstream from Green Bay, and including at a minimum 21.5 miles into the bay. The Neenah and Menasha Channels and Little Lake Butte des Mortes (LLBM), are sections of the Fox River which are included in the ZOC. This section of the Fox River includes what is considered the highest concentration of papermills in the world, and also includes six publicly owned treatment works (POTWs). Approximately 270,000 people reside in the communities along the river. Although the river is no longer used for commercial shipping, twelve dams and locks are located on the Fox River near towns and industries.

As a result of papermill operations, sediments in the Fox River have become contaminated with polychlorinated biphenyls (PCBs). PCBs were used in manufacturing carbonless copy paper between 1957 and 1971, and made up 3.4% of the finished product. The greatest discharge of PCBs into the Fox River has been from facilities which recycled carbonless copy paper. However, PCBs have been detected in effluent from other papermills which did not recycle carbonless copy paper. This indicates that the greatest mass of PCBs released, occurred during the years when PCBs were not monitored. As a result of the papermill operations, sediments in the ZOC have been contaminated with PCBs, mercury and other compounds. The greatest discharge of PCBs into the Fox River were from facilities which deinked and repulped carbonless copy paper. However, PCBs have been detected in effluent of other papermills which did not process carbonless copy paper, and effluent of POTWs which received wastewater from papermills. PCBs have also been detected in effluent samples collected from Neenah Foundry.

The following list of facilities have had PCBs detected in samples of effluent discharged to the Fox River: Kimberly Clark-Badger Globe Combined Treatment Plant; PHGlatfelter-Bergstrom Division; Kimberly Clark-Lakeview Division; Neenah Menasha Combined POTW; Wisconsin Tissue Mills; Riverside-Kerwin Division; Consolidated Papers-Appleton; Appleton POTW; Thilmany Paper; DePere POTW; Fort Howard; James River/American Can; Green Bay Packing; and Green Bay POTW. Facilities which discharge PCBs into POTW collection systems have not been evaluated as sources of PCBs to the Fox River in this HRS package at this time.

PCBs have been detected in both surface water and sediment samples throughout the Lower Fox River and Green Bay. Extensive sampling of PCBs in sediments and surface water has been conducted as part of several mass balance studies conducted by the Wisconsin Department of Natural Resources (WDNR), the USGS, USEPA Great Lakes National Program Office (GLNPO) and individual papermills. The PCBs released in the effluent adsorb to the sediments in the riverbed and remain in the environment. PCBs adsorb strongly to soil and sediment particulates which have a high organic matter or clay content. Sediments which have a high organic matter content and low density have been shown to become resuspended in the water column and transported downstream. The PCB-contaminated sediments in the Fox River between Lake Winnebago and the DePere Dam have accumulated behind dams and in

depositional areas away from the original points of discharge. PCB-contaminated sediments in LLBM are the source of the majority of contaminated sediments up to and behind DePere Dam, and are carried over the dam during periods of high flow. These sediments, combined with sediments contaminated by sources below the dam, are the major sources of PCBs detected in Green Bay. Approximately 8,500 kilograms (kg) of PCBs have been identified in Green Bay sediments. Approximately, half of the PCBs in Green Bay sediments are located in three sediment deposition areas located within the 35 kilometers (21.7 miles) from the mouth of the Fox River.

Fishing is common throughout the Fox River and Green Bay. PCBs were initially detected in samples of fish tissue collected in 1976; a consumption advisory was issued by WDNR the same year. In 1976, commercial carp fisheries in Green Bay were severely limited due to high levels of PCBs in these fish and other high fat species of fish. Consumption advisories are still in effect for many species on the Fox River, Green Bay and Lake Michigan. Surveys indicate that a large percentage of anglers are unaware of the fish consumption advisory. Also a large percentage of those who are aware of the advisory continue to consume fish on a subsistence basis (Campbell, Susan. AAdvisories on fish eating ineffective. Green Bay Press-Gazette, 16 September 1997, p. A-1). Three pairs of bald eagles have nests on the Fox River and Green Bay, and use this habitat as a source of food. A number of eagles also spend the winter on the Fox River. The area below the DePere Dam is an important spawning area for walleye. The largest wetlands, approximately 3,000 acres, occur on the shore of Green Bay near the mouth of the Fox River. These wetlands are part of the Green Bay West Shores State Wildlife Area and the Bay Beach Wildlife Sanctuary. Approximately 2 miles of wetland frontage occur withing the Fox River ZOC, with the largest areas along the shore of LLBM, and along the river near Lost Dauphin State Park.

For more information about the hazardous substances identified in this narrative summary, including general information regarding the effects of exposure to these substances on human health, please see the Agency for Toxic Substances and Disease Registry (ATSDR) ToxFAQs. ATSDR ToxFAQs can be found on the Internet at ATSDR - ToxFAQs (http://www.atsdr.cdc.gov/toxfaqs/index.asp) or by telephone at 1-888-42-ATSDR or 1-888-422-8737.