

## Preassessment Screen for the Ashtabula River and Harbor

### Action:

Preassessment Screen on Ashtabula River and Harbor, Ohio by the Ohio Environmental Protection Agency (Ohio EPA) and United States Department of the Interior (DOI), in cooperation with the United States Department of Commerce (DOC) (collectively, the Trustees).

### Authority:

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended, 42 U.S.C. 9601 et seq., the Oil Pollution Act of 1990 (OPA), 33 U.S.C. 2701 et seq., and the Federal Water Pollution Control Act (FWPCA), as amended, 33 U.S.C. 1251 et seq., authorize the Federal Government and States to recover, on behalf of the public, damages for injuries to natural resources and their supporting ecosystems, belonging to, managed by, appertaining to, or otherwise controlled by the Federal Government or a State.

The President has designated federal natural resource trustees in the National Oil and Hazardous Substances Pollution Contingency Plan (NCP), 40 C.F.R. § 300.600 and through Executive Order 12580, dated January 23, 1987. Pursuant to the NCP, the Secretary of the DOI acts as a trustee for natural resources and their supporting ecosystems, managed or controlled by the DOI. In this matter, the U.S. Fish and Wildlife Service (Service) is acting on behalf of the Secretary of the DOI as trustee for the natural resources under its jurisdiction. The Secretary of the DOC acts as trustee for natural resources and their supporting ecosystems managed or controlled by the DOC and for natural resources and their supporting ecosystems managed or controlled by other federal agencies that are found in, under, or using waters navigable by deep draft vessels, tidally influenced waters, or waters of the contiguous zone, and the exclusive economic zone. The Secretary of the DOC has delegated his authority to act as trustee to the Administrator of the National Oceanic and Atmospheric Administration.

In accordance with 42 U.S.C. 9607(f)(2)(B) and the NCP, the Director of Ohio EPA has been designated the natural resource trustee by the Governor of Ohio pursuant to Executive Order 2000-20T, June 26, 2000. Ohio EPA acts on behalf of the public as trustees for natural resources, including their supporting ecosystems, within the boundary of the State of Ohio or belonging to, managed by, controlled by, or appertaining to the State of Ohio. The Ohio EPA has or shares trusteeship over fish and wildlife in the Ashtabula River and Harbor.

**Requirement:**

Federal regulations at 43 CFR § 11.23(a) require Natural Resource Trustees to complete a preassessment screen and make a determination as to whether a NRDA shall be carried out at a site, before assessment efforts are undertaken pursuant to the regulations. This document fulfills that requirement for the Ashtabula River and Harbor and follows the structure of Federal Regulations at 43 CFR § 11.

**Purpose:**

The purpose of this preassessment screen is to provide a rapid review of the readily available information on releases of hazardous substances and potential impacts on natural resources in the Ashtabula River and Harbor (the Site) for which the DOI, Ohio EPA and/or the Department of Commerce may assert trusteeship under section 107(f) of CERCLA.

**Information on the Site and on the discharge or release (43 CFR §11.24 (a)).*****1) The time, quantity, duration, and frequency of the discharge or release:***

The industrial zone of Ashtabula is concentrated around Fields Brook. Manufacturing has occurred since the early 1940s in this area. The decades of manufacturing activity and waste management practices at industrial facilities have resulted in the discharge or release of hazardous substances to Fields Brook and its watershed. These releases have occurred since 1980, and, in some instances, continue to the present.

The releases include:

- Unpermitted releases of hazardous substances: During the Superfund remedial investigation for the Fields Brook source control unit, more than 100 potential sources of recontamination were identified. Six of these source areas were determined to require remediation in order to prevent Fields Brook sediments from being recontaminated to the extent that sediment cleanup goals could be exceeded. These six areas are examples of unpermitted releases of hazardous substances to Fields Brook which have occurred since 1980 and which, in some cases, continue to the present. In addition, previously unknown areas of soil extensively contaminated with chlorinated solvents and other hazardous substances have recently been discovered along the banks of Fields Brook. It is estimated that approximately 15,000 cubic yards of this material will have to be excavated to prevent further recontamination of Fields Brook and the Ashtabula River and Harbor;
- Documented exceedances of National Pollutant Discharge Elimination System (NPDES) permitted discharge limits by the Fields Brook potentially responsible parties (PRPs).
- Unpermitted waste water discharges by the Fields Brook PRPs: as documented in

Ohio EPA industrial waste water files, the unpermitted hazardous substances discharged include chlorinated phenols, 1,1-dichloroethane, 1,1-dichloroethene, hexachlorobenzene, hexachlorobutadiene, hexachlorocyclopentadiene, phthalates, polynuclear aromatic hydrocarbons (PAH), trichloroethane, trichloroethylene, tetrachloroethane, and tetrachloroethylene.

Hazardous substances have migrated downstream from Fields Brook to the Ashtabula River and Harbor, contaminating bottom sediments, fish and wildlife. There are presently more than 1,000,000 cubic yards of contaminated sediment in the Ashtabula River and Harbor.

Fields Brook was placed on the National Priorities List of uncontrolled hazardous waste sites in 1983 and is being remediated under that authority. In 1994, as an alternative to the impending designation of the Ashtabula River as an operable unit of the Fields Brook Superfund Site, the Ashtabula River Partnership (Partnership) was formed to facilitate a voluntary cleanup. The Partnership is comprised of more than 50 public and private partners. Public partners include the U.S. Army Corps of Engineers (USACE), U.S. Environmental Protection Agency (USEPA), the U.S. Fish and Wildlife Service, Ohio EPA, Ohio Department of Natural Resources, Ohio Department of Health and local governments. Private partners include local businesses and industries, several of which have been named Potentially Responsible Parties (PRPs) at the Fields Brook site.

The USACE is participating in the Partnership because of its authority under the Water Resources Development Act of 1990, as amended by Section 205 of the Water Resources Development Act of 1996 (WRDA). Under WRDA, the USACE may remove and remediate contaminated sediments from navigable waters and has the authority to expend Federal funds for such work. 33 U. S. C. § 1272. The Partnership and the USACE are currently exploring the ability and the authority of the USACE to perform, and partially fund, removal, remediation and some level of natural resource restoration at the site.

In addition to the deferred option to designate the site as an operable unit of the Fields Brook NPL Site, USEPA has indicated that it also considers the Ashtabula Partnership effort a remediation "otherwise scheduled" pursuant to section 113(g) of CERCLA. USEPA has reserved its right to take action to address contamination in the Ashtabula River under any of its applicable authorities, should the Partnership fail to meet significant milestones in the remediation process.

## **2) *The hazardous substances released:***

Bottom sediments and biota of the Ashtabula River and Harbor are contaminated with PCBs, chlorinated benzene compounds, chlorinated ethenes, hexachlorobutadiene, PAHs, other organic chemicals and heavy metals that originated from Fields Brook. A partial listing of hazardous substances that have been identified in the Ashtabula River and Harbor is provided in Table 1.

**Table 1. Hazardous substances (CASRN) identified in sediments and/or biota in the Ashtabula River and Harbor.**

PCBs (1336363)	Acetone (67641)	Benzo(a)pyrene (50328)
Hexachlorobenzene (118741)	Methylene Chloride (75092)	Benzo(b)fluoranthene (205992)
Pentachlorobenzene (608935)	Vinyl Acetate (108054)	Benzo(g,h,i)perylene (191242)
Tetrachlorobenzene (95943)	Toluene (108883)	Benzo(k)fluoranthene (207089)
Trichlorobenzene (120821)	DDT/DDD (50293/72559)	Chrysene (218019)
Dichlorobenzene (25321226)	Heptachlor (76448)	Di-n-butyl phthalate (84742)
Chlorobenzene (108907)	Lindane (58899)	Fluoranthene (206440)
Hexachlorobutadiene (87683)	Dieldrin (60571)	Fluorene (86737)
Hexachloroethane (6772)	Anthracene (120127)	Indeno(1,2,3-cd)pyrene (193395)
Tetrachloroethane (630206)	Benzo(a)anthracene (56553)	Naphthalene (91203)
Trichloroethane (71556/79005)	Cadmium (7440439)	Phenanthrene (85018)
Trichloroethene (79016)	Mercury (7439976)	Chromium (7440473)
Dichloroethane (75343/107062)	Copper (7440508)	

### **3) History of the current and past use of the Site:**

The Ashtabula River is a major Lake Erie tributary. It is located in northeast Ohio, flowing in a northwesterly direction to its confluence with Lake Erie at the City of Ashtabula, Ohio. The drainage basin covers approximately 355 Km<sup>2</sup>. Tributaries include Fields Brook, Hubbard Run and Strong Brook. The city of Ashtabula, with a population of approximately 22,000, is the only significant urban center in the watershed. The rest of the drainage basin is primarily rural and agricultural. There is concentrated industrial development around Fields Brook. The Ashtabula Harbor is a significant Great Lakes harbor. Commodities such as titanium ore, limestone, iron, coal and other bulk commodities regularly transit the harbor. There is substantial marina development in the lower 2 miles of the River.

### **4) Relevant operations occurring at or near the Site:**

Decades of manufacturing activity have resulted in the discharge or release of hazardous substances to Fields Brook and its watershed. Hazardous substances have migrated downstream from Fields Brook to the Ashtabula River and Harbor contaminating bottom sediments, water, fish and wildlife in the Ashtabula River and Harbor. With the exception of PAH compounds, there are no known operations in the Ashtabula River or Harbor that are significant sources of hazardous substances listed in Table 1.

Coal and other bulk materials are transshipped from Ashtabula Harbor. Coal shipping is a possible source of PAHs contamination in the Harbor. However, high PAH concentrations are also present in the River upstream of the coal shipping facilities, but downstream of the Fields Brook, suggesting that Fields Brook is a source for some of the PAH contamination in the Ashtabula River.

### **5) Additional hazardous substances potentially released from the Site:**

Known hazardous substances are listed in Table 1. Radionuclides potentially impacting trust resources have also been released.

#### **6) Potentially responsible parties:**

The PRPs include, but are not limited to, Archer Daniels Midland Company, ASHTA Chemicals Inc., Bee Jay Construction Co., Inc. (f/k/a Brenkus Excavating, Inc.), C. H. Heist Corp., Cabot Corporation, Consolidated Rail Corporation, Detrex Corporation, Elkem Metals Company L.P., First Energy Corporation., GenCorp Inc., Greenleaf Motor Express Inc., Koski Construction Company, Inc., Luntz Services Corporation, Mallinckrodt Inc. (f/k/a International Minerals and Chemicals Corp.), Millennium Inorganic Chemicals Inc. (f/k/a SCM Corporation and SCM Chemicals, Inc.), Millennium Petrochemicals Inc., Motta's Body & Frame Shop, Inc., Occidental Chemical Corporation, Ohio Power Company, Olin Corporation, Plasticolors, Inc., Reserve Environmental Services, Inc., RMI Titanium Company, The Sherwin-Williams Company, Union Carbide Corporation, Viacom International Inc. (f/k/a Paramount Communications, Inc.), the United States General Services Administration (as successor to the Defense Plant Corporation) and the United States Department of Energy.

See *State of Ohio, ex rel. Betty D. Montgomery, Attorney General of Ohio v. GenCorp, Inc. et al.*, Case no. 1:99-CV-1153, U.S. District Court, N.D. Ohio, E.D. (2 Consent Decrees) July 7, 1999; and *United States v. GenCorp, Inc. et al.*, Case no. 5:89-CV-1866, U.S. District Court, N.D. Ohio, E.D. (2 Consent Decrees) July 7, 1999.

#### **Damages excluded from liability under CERCLA (43 CFR §11.24 (b)).**

Damages resulting from discharge or release of PCBs and other hazardous substances (Table 1) at this site were not identified in any environmental impact statement, pursuant to the National Environmental Policy Act (NEPA), as amended, 42 U.S.C. 4321 *et seq.*

The release or discharge of PCBs and other hazardous substances (Table 1) did not occur wholly before enactment of CERCLA, nor the 1977 amendments to FWPCA. Injuries to natural resources and resultant damages to the public from release or discharge did not occur wholly before enactment of CERCLA, nor the 1977 amendments to FWPCA, 42 U.S.C. 9607(f)(1).

Damages resulting from the release or discharge of PCBs and other hazardous substances (Table 1) did not result from application of a pesticide product registered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA), as amended, 7 U.S.C. 136.

Damages resulting from the release or discharge of PCBs and other hazardous substances (Table 1) did not result from any federally permitted release as defined in section 101(10) CERCLA.

No exclusion from damages is applicable to this site, pursuant to the CERCLA and FWPCA.

### **Preliminary identification of pathways (43 CFR §11.25 (a)).**

Hazardous substances were discharged or released to Fields Brook, a tributary to the Ashtabula River, over several decades. Hazardous substances have migrated downstream from Fields Brook, contaminating natural resources in the Ashtabula River and Harbor. Injuries to trust resources in the Ashtabula River and Harbor are the result of both the direct and indirect effects of hazardous substances through the direct contact, surface water, particulate movement, and food chain pathways. Hazardous substances are present at concentrations sufficient to cause direct toxicity to trust resources. In addition, hazardous substances are present at concentrations sufficient to cause toxicity to food organisms. This injures trust resources indirectly by reducing the ability of the Ashtabula River and Harbor to provide the supporting services required by trust resources.

### **Exposed areas (43 CFR §11.25 (b)).**

Hazardous substances have migrated from Fields Brook to the Ashtabula River and Harbor. The extent of contamination extends downstream approximately 2 miles and covers an area of over 511 acres of River and Harbor bottom. While data are not available, it is possible that flood plain soils and groundwater have also been impacted.

The Ashtabula River is a major tributary to Lake Erie. Hazardous substances discharged to the Ashtabula River are known to migrate into Lake Erie and add to contaminant burdens in the Lake and its biota. Currently there are fish consumption advisories for Ashtabula River and Harbor, as well as Lake Erie. Several Lake Erie fish species also use the Ashtabula seasonally and receive additional exposure while in the Ashtabula River and Harbor.

### **Exposed water estimates (43 CFR §11.25 (c)).**

There are presently insufficient water column data for the Ashtabula River and Harbor with which to make a direct estimate of water column concentrations for PCBs and other hazardous substances. Sediment data indicate that the lower 2 miles, over 511 acres, of the Ashtabula River and Harbor are contaminated by a number of hazardous substances (see Table 1) at concentrations up to six orders of magnitude greater than would be expected to cause injury to biological resources.

Fish consumption advisories have been issued by the Ohio Department of Health since March 1983 and continue through the present. The U. S. Food and Drug Administration tolerance for PCBs in fish tissue has been historically, and continues to be, exceeded in some species and individuals in the Ashtabula River and Harbor.

### **Estimates of concentrations (43 CFR §11.25 (d)).**

Water column data are not available for hazardous substances in the Ashtabula River and Harbor. Loading estimates are not available from Fields Brook. Concentration ranges for several hazardous substances in bottom sediments of the Ashtabula River and Harbor are provided in Table 2.

**Table 2. Concentration ranges for selected hazardous substances in sediments and biota from the Ashtabula River and Harbor (mg/kg).**

Location	PCBs (1)	HCB (2)	HCBD (3)	Phenanthrene	Pyrene	Flouranthene	Mercury
Sediments	Nd – 660	Nd – 45000	Nd – 500	Nd – 100	Nd – 75	Nd – 50	Nd – 3.6
Fish tissue	0.06 – 74.5	0.31– 2.19	Nd – 2.8	No data	No data	No data	No data
Herring gull eggs	12.9 – 36.0	No data	No data	No data	No data	No data	No data

eggs

(1) Polychlorinated biphenyls

(2) Hexchlorobenzene

(3) Hexachlorobutadiene

Nd = less than detection

**Potentially affected resources (43 CFR §11.25 (e)).**

**1) Natural resources for which the Trustees may assert trusteeship under CERCLA have been or are likely to have been adversely affected by the discharge or release:**

The following natural resources and their supporting ecosystems have been, or potentially have been, affected: Geologic resources, ground water, surface water (including sediments) and biological resources including fish, fish eating birds, wading birds, water fowl and fish eating mammals in the Ashtabula River and Harbor. The following services to the public have or potentially have been affected: sport fishing, hunting, bird watching, navigation, boating, tourism, and passive values provided by wilderness areas, parks, forests, waterways, and a healthy ecosystem.

Migratory bird species in the Ashtabula River and harbor include, but are not limited to, the osprey (*Pandion haliaetus*), wood duck (*Aix sponsa*), Canada goose (*Branta canadensis*), common merganser (*Mergus merganser*), great blue heron (*Ardea herodias*), cliff swallow (*Hirundo pyrrhonta*), tree swallow (*Tachycineta bicolor*), Caspian tern (*Sterna caspia*), Forester's tern (*Sterna forsteri*), common tern (*Sterna hirundo*), mallard duck (*Anas platyrhynchos*), black duck (*Anas rubripes*), lesser scaup (*Aythya affinis*) and kingfisher (*Ceryle alcyon*). Numerous species of migratory Neotropical songbirds inhabit the area seasonally.

Fish species in the Ashtabula River and Harbor include, but are not limited to, yellow perch (*Perca flavescens*), white bass (*Morone chrysops*), pumpkinseed (*Lepomis gibbosus*), white crappie (*Pomoxis annularis*), goldfish (*Carassius auratus*), emerald shiner (*Notropis atherinoides*), gizzard shad (*Dorosoma cepedianum*), carp (*Cyprinus carpio*), brown bullhead (*Ictalurus nebulosus*), alewife (*Alosa pseudoharangus*), smallmouth bass (*Micropterus dolomieu*), rainbow smelt (*Osmerus mordax*), Johnny darter (*Etheostoma nigrum*), walleye (*Stizostedion vitreum*), rainbow trout (*Oncorhynchus mykiss*), spottail shiners (*Notropis hudsonius*), log perch (*Percina caprodes*), freshwater drum (*Aplodinotus grunniens*), lake sturgeon (*Acipenser fulvescens*) white suckers (*Catostomus commersoni*), coho salmon (*Oncorhynchus kisutch*) and Chinook salmon (*Oncorhynchus tshawytscha*).

Rainbow smelt (*Osmerus mordax*), rainbow trout (*Oncorhynchus mykiss*), coho salmon

(*Oncorhynchus kisutch*) and Chinook salmon (*Oncorhynchus tshawytscha*) are anadromous fish species. Great Lakes populations of lake trout (*Salvelinus namaycush*), yellow perch (*Perca flavescens*), lake sturgeon (*Acipenser fulvescens*), walleye (*Stizostedion vitreum*), and forage fish are nationally significant fish stocks pursuant to the GLFWRA.

Three fish species of Special Concern in Ohio have been listed in the Ashtabula River lacustrary. These are the Great Lakes muskellunge, blacknose shiner, and lake sturgeon.

**2) Preliminary estimate:**

Ohio EPA has designated Conneaut Creek as a reference site for the Ashtabula River and Harbor. Conneaut Creek is very similar to the Ashtabula in most important aspects, except for the presence of hazardous substances, and is an appropriate reference site from which hazardous substance injury to the Ashtabula may be calculated.

The difference in the number of fish per unit area and the number of native fish species between Ashtabula and Conneaut provide a reasonable estimate of hazardous substance injury to the fishery in the Ashtabula River and Harbor. Ashtabula and Conneaut provide similar physical habitat and water quality. The difference in the number of fish per unit area and the number of native species results from several factors related to hazardous substances in the Ashtabula. Contamination of the sediments and water column decreases productivity at lower trophic levels, reducing the food supply for fishes. Hazardous substances in the Ashtabula also directly reduce the productivity of the fishery through direct toxicity and reproductive impairment. This creates an opportunity for the proliferation of carp, carp-goldfish hybrids and other extremely hardy non-native species.

Using a sample-by-sample comparison of the number of native species and the numbers of individual fish, the Trustees have calculated the percent difference between the Ashtabula and Conneaut (Table 3). The results indicate that the service loss to the fishery (exclusive of other ecosystem components) in the Ashtabula River and Harbor is nearly 52 percent.

**Table 3. Comparison of Ashtabula and Conneaut Fisheries**

	Ashtabula	Conneaut	Percent Difference	Percent Lost Services
Native fish species/unit area	10.4	23	45%	55%
Number of fish/unit area	329.9	636.5	51.8%	48.2%

This preliminary estimate of service loss includes only injury to the fishery and is, therefore, an underestimate of total injury to natural resources in the Ashtabula River and Harbor. Data sets evaluated by the Trustees indicate that substantial injury has likely occurred to other ecosystem components including, but not limited to, benthos, migratory birds and fish eating mammals.

**Preassessment Screen Determination:**

Based upon a review of readily available data and an evaluation of the preassessment determination criteria, summarized in this document, the Trustees have reached the following conclusions:

- Releases of hazardous substances have occurred;
- Natural resources for which the trustees may assert trusteeship under CERCLA and FWPCA have been adversely affected by the discharge or release of hazardous substances;
- The quantity and concentration of the released hazardous substances are sufficient to potentially cause injury to natural resources;
- Data sufficient to pursue an assessment are readily available or likely to be obtained at a reasonable cost; and
- Response actions planned will not sufficiently remedy the injury to natural resources without further action;

The Trustees hereby determine that further investigation and assessment is warranted and should be carried out at this site in accordance with Federal Regulations at 43 CFR §11, Subparts C and E. The Trustees further determine that current information indicates that there is a reasonable probability of making a successful natural resources damage claim pursuant to section 107 of the CERCLA and section 311 of the FWPCA and that all criteria and requirements in 43 CFR part 11, generally, and 43 CFR § 11.23(a)-(g), § 11.24 and § 11.25, specifically, have been satisfied.

The information provided and conclusions made in this preassessment screen shall be used to direct further investigations and assessments and is not intended to preclude consideration of other resources later found to be affected or other parties found to be responsible for releases.

**/S/WILLIAM F. HARTWIG**

William Hartwig, Regional Director

U.S. Fish and Wildlife Service

Christopher Jones, Director

Ohio Environmental Protection Agency

Date: \_\_\_\_\_

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William Hartwig, Regional Director  
U.S. Fish and Wildlife Service

  
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Christopher Jones, Director  
Ohio Environmental Protection Agency

Date: \_\_\_\_\_

Date: MAY 18 2001