



Middletown Works  
Middletown, Ohio

**FACT SHEET No. 4**

## Site Investigations in the Dicks Creek Study Area

January 2007

### Introduction

Since PCBs were first discovered in Dicks Creek in 1995 and in Monroe Ditch in 1997, AK Steel has worked with the U.S. EPA and Ohio EPA to stop them from getting into the water, to find out where they are coming from, and to determine what areas need to be cleaned up.

### Controlling the PCBs

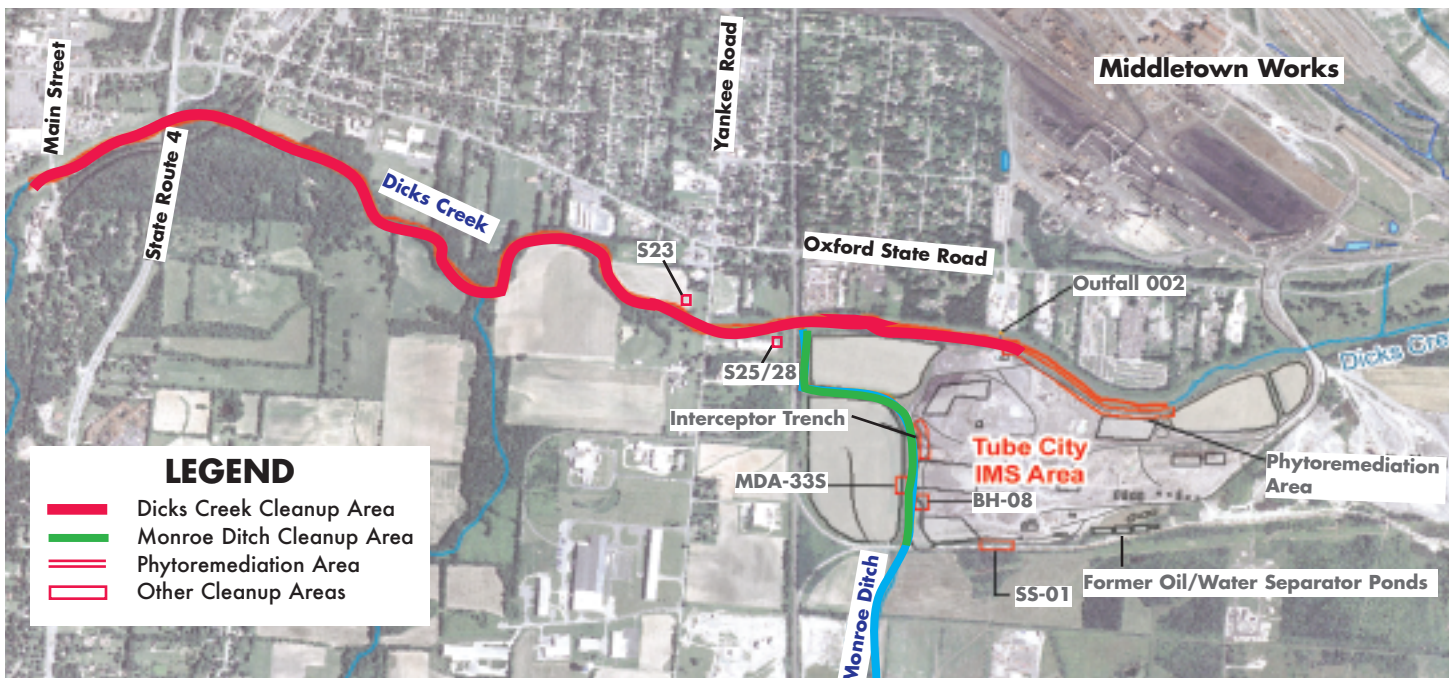
In December 1997, after PCBs in Monroe Ditch water samples were traced to groundwater seeps trickling out of its eastern bank, AK Steel took immediate action.

Within a month, the company had built an underground system to prevent contaminated groundwater from reaching Monroe Ditch, a tributary of Dicks Creek. Called an interceptor trench, this system captures the shallow groundwater before it can seep out of the ground and into the ditch. The trench is about five feet wide and 400 feet long.

The captured groundwater is pumped from the trench to an above ground treatment system where it is filtered through carbon to remove the PCBs. The clean, treated water is stored on site for later reuse in slag processing operations. The used carbon is disposed in an off-site landfill.

This groundwater collection and treatment system, which will be operated until the cleanup is complete, is located in the slag processing area owned by AK Steel but currently leased to and operated by Tube City IMS (*see map*).

In fall 2000, AK Steel also began a groundwater seep inspection program, which is ongoing. To date, 43 seeps have been identified and sampled; only five have contained PCBs, two along Monroe Ditch and three along Dicks Creek. AK Steel has taken steps to control these seeps by replacing the soil in these areas with peat and sulfur and/or injecting a vinegar solution. This reduces the pH of the soil, which keeps the PCBs in place and unlikely to seep into the creek. No PCB seeps have been observed since 2003.



Map of the Dicks Creek Study Area in Middletown, Ohio

**Where are the PCBs Coming From?**

In early 1998, AK Steel began an extensive investigation to determine where the PCBs were coming from. Much of this work is detailed in the *Soil & Groundwater Investigation Report* that can be found in the AK Steel Information Repository (labeled AK-4).

The company did thorough research, including interviewing former and current employees, reviewing aerial photos and other historical records, and collecting and testing soil and groundwater samples from the slag processing area.

The results of this investigation show that a major source of PCBs in Dicks Creek and Monroe Ditch was former oil/water separator ponds on the south side of the slag processing area (*see map*). AK Steel's predecessor, Armco, used these ponds between 1966 and 1983 to separate and recycle oils used in hydraulic machinery. The oils contained PCBs, which were a standard ingredient at the time because of their ability to help prevent industrial fires.

PCBs were most likely released to the environment when the ponds overflowed, probably during heavy rain storms. The PCBs were either carried via a nearby drainageway into Monroe Ditch and from there into Dicks Creek, or they entered shallow groundwater and reached Monroe Ditch and Dicks Creek through seeps. Although the ponds were cleaned up and closed in 1983, some soil in the drainage ditch will require cleanup (*see SS-01 on the map*).

AK Steel will also remove PCBs from soil near Mill Scale Area 3 (*see BH-08 on the map*) and from shallow groundwater near a former closed landfill (*see MDA-33S on map*). The PCBs at MDA-33S are in a dense, oily liquid. AK Steel will need to conduct further studies in the area and plans to install a barrier wall and recovery wells to prevent the movement of the oil.

**What Needs to be Cleaned Up?**

Following the investigation of the slag processing area, AK Steel began to look at how far the PCB contamination had spread off site. To date, the company has collected and tested thousands of samples of sediment and surface water in Dicks Creek and Monroe Ditch, floodplain soil along both waterways, and groundwater around the slag processing area.

The results of these investigations show the following:

- Sediment will be removed from Dicks Creek and the Outfall 002 channel (*see map*).
- Soil will be removed from some floodplain areas on both sides of Dicks Creek — between Outfall 002 and about 2,400 feet west of Yankee Road.
- Sediment will be removed from Monroe Ditch (*see map*).

**Next Steps**

AK Steel expects to conduct additional sampling of the Dicks Creek floodplain and the slag processing area in 2007. Once this is complete, the company will begin preparing "design" documents that detail how the cleanup will be done.

Although most of this work began before AK Steel signed an Environmental Consent Decree in 2006, the investigation and cleanup are now governed by this agreement.

Therefore, before any cleanup work can begin, all AK Steel activities and documents (e.g., sampling plans, data reports and design documents) must be approved by the U.S. EPA, in consultation with the Ohio EPA, Sierra Club and Natural Resources Defense Council.

**Additional information is available from the following sources:****Interim Measures  
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**AK Steel  
Information Repository**

Middletown Public Library  
125 S. Broad Street  
Middletown, Ohio  
Hours of operation:  
Monday - Friday: 9:00 am – 9:00 pm  
Saturday: 9:00 am – 5:00 pm  
Sunday: 1:00 pm – 5:00 pm (closed on Sundays from Memorial Day weekend through Labor Day weekend)