



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

**REGION 5**  
**9311 GROH ROAD**  
**GROSSE ILE, MI 48138**

**MEMORANDUM**

**SUBJECT:** Review of Arsenic Concentration Data for the Baycote Metal Finishing Site.

**FROM:** Keith Fusinski, PhD Toxicologist US EPA  
Superfund Division, Remedial Response Branch #1, Remedial Response Section #1

**TO:** Paul Atkociunas, On-Scene Coordinator, US EPA  
Superfund Division, Emergency Response Branch #2, Emergency Response Section #4

**DATE:** 1/23/2013

**Statement of the Issues**

Baycote Metal Finishing Site is a former chrome plating shop and metal finishing facility (The Site) is located at 1302 Industrial Drive in Mishawaka, Saint Joseph County, Indiana. The Site is bordered to the north and south by industrial properties; to the west by Industrial Drive, with industrial properties beyond; and to the east by a vacant lot, with industrial properties beyond. The nearest residential properties are located approximately 730 feet west of the Site

After the closure of the facility, the property owner began voluntary removal of on-site wastes but never completed the removal. According to an Indiana Department of Environmental Management (IDEM) Inspection Summary Letter dated February 15, 2010, approximately 52,000 gallons of hazardous waste were present on site.

On November 18, 2011, the U.S. EPA received a request from the Saint Joseph County Health Department (SJCHD) to mitigate the potential for imminent and substantial threats to the public health or welfare of the United States or the environment at the Site. On November 21, 2011, the U.S. EPA and SJCHD conducted an initial Site walkthrough at the facility. The inspection noted a large number of drums, totes, and vats containing various acids and caustics stored in the facility.

In December 2011, the U.S. EPA and WESTON START conducted a site assessment and identified over 332 drums, vats, and other miscellaneous containers throughout the Site. Most containers were labeled, but the volumes of the contents were unknown. Containers identified during the site assessment contained various materials, including

the following: zinc cyanide solution, chloride zinc acid, yellow chromate, acid copper bath, black hexavalent chromate post dip, sulfuric acid, hydrochloric acid, and unlabeled and unidentified materials. The site assessment documented the following conditions at the Site:

- Wastes exhibiting the characteristics of ignitability, corrosivity, Toxicity Characteristic Leaching Procedure (TCLP) cadmium, and TCLP chromium
- Contaminants in open containers in poor condition
- Questionable integrity of the building structure (collapsed roof in the former wastewater treatment area and flooding in the Line 4-7 Room)
- Close proximity of Site to residential properties and other sensitive receptors (including churches, schools, and waterways)
- Potential pathways for waste inside the on-site building to migrate to public areas

From May 29 through November 2, 2012, the U.S. EPA conducted a removal action at the Site to mitigate imminent and substantial threats to the public health or welfare of the United States or the environment at the Site. During the removal action, WESTON START collected the sludge, soil, and liquid samples.

OSC Paul Atkociunas requested a review of the soil data collected at the site to determine if there is a possible human health hazard associated with the concentrations of arsenic found on the Site.

### **Arsenic Data Review**

The laboratory analytical results for soil samples collected from the field east of the Site building have arsenic concentration which range from 6.2 mg/kg to 14.6 mg/kg. These concentrations are above the regional screening value for industrial soil of 1.6 mg/kg. However, the United States Geological Survey (USGS) published in April of 2012 on the Mineral Resources On-Line Spatial Data Website that the concentration of arsenic in Saint Joseph County, Indiana ranges from 3.8 mg/kg to 41.5 mg/kg. The USGS states that the average concentration of arsenic in Saint Joseph County, Indiana is 10.1 mg/kg (USGS-2012). Based upon the samples collected from the field east of the Site building, the average concentration at the site is 10.0 mg/kg.

The U.S. EPA Soil Screening Guidance: User's Guide states, "Generally, EPA does not cleanup below natural background levels; however, where anthropogenic background levels exceed SSLs and EPA has determined that a response action is necessary and feasible, EPA's goal will be to develop a comprehensive response to address area soils. This will often require coordination with different authorities that have jurisdiction over other sources of contamination in the area (such as a regional air board or RCRA program). This will help avoid response actions that create "clean islands" amid widespread contamination." (US EPA-1996).

It is U.S. EPA's opinion that the arsenic concentrations found in the soil at the Baycote Metal Finishing site is equivalent to the background concentration of arsenic in Saint

Joseph County and does not present any additional health risk to the population if it is left in place.

## **References**

- US EPA - 1996. US EPA Soil Screening Guidance: User's Guide. Publication 9355.4-23. Office of Solid Waste and Emergency Response.
- USGS – 2012. Mineral Resources On-Line Spatial Data Website.  
<http://mrdata.usgs.gov/geochem/county.php?place=f18141&el=As&rf=upper-midwestern>