United States Environmental Protection Agency
Region III
POLLUTION REPORT

Date: Friday, March 5, 2004
From: Robert Kelly

Subject: Site Assessment
Chauncey WV PCB Site
Route 40 South, Chauncey, WV

POLREP No.:	6	**Site #:**	A3W3
Reporting Period:		**D.O. #:**	
Start Date:		**Response Authority:**	CERCLA
Mob Date:		**Response Type:**	
Demob Date:		**NPL Status:**	
Completion Date:		**Incident Category:**	Removal Assessment
CERCLIS ID #:		**Contract #**	
RCRIS ID #:			

Site Description
The Site has not been defined as a specific delineated area, but is considered to include the Town of Chauncey. The Site's major locations of interest include the following areas: the unnamed hollow containing Miller's Branch of Island Creek; Chaffin Hollow; Chauncey's residences; the old mining salvage recycling facility and surrounding grounds; Omar Elementary School, including the playground area, and the UPS facility; and Island Creek. Portions of the Site have been identified by local residents as the locations for illegal dumping of hazardous materials and the possibility of dumping of transformer oil.

Current Activities
This POLREP provides an evaluation of analytical results of sampling events conducted as part of an effort to assess possible contamination of environmental media in specific areas of Chauncy, West Virginia. Samples of soil, surface water, creek sediment, drinking water, and water pooled in an old power house building were analyzed for both inorganic and organic parameters.

Environmental samples were collected from many areas. These areas included an old power house building, several reaches of waterways in the assessed area, an elementary school grounds, a background location, drinking water stations, and from residential locations.

The OSCs evaluation of the analytical results indicates that widespread contamination is not present in the sampled area. The analytical data do, however, suggest a limited area of soil contaminated by lead near the parking lot next to the old power house and a package distribution center. Additionally, the evaluation indicates that low levels of organic compounds (e.g., dioxin) detected within water pooled within the lowest levels of an old power house building have not adversely affected the nearby environment. Finally, the evaluation indicates that an elevated reading of arsenic is likely not indicative of a contamination event.

In general, the OSCs evaluation of the analytical data suggest that the old power house building is not contaminating the environment, that the limited area of lead contamination could plausibly result from historic structures or land use, that arsenic levels do not suggest environmental contamination, and that drinking water and surface water collected throughout the area are not impacted at levels that adversely affect human health or the environment.

The drinking water and creek water results are not summarized in this POLREP as all drinking water samples indicated levels within drinking water standards and all creek water samples show no impact.

Lead

Elevated concentrations of lead (over 7000 mg/kg in one sample) were detected in a few soil samples collected from a small area of soil adjacent to an area currently used for parking ("parking area soil"). The

area of contaminated soil is estimated to be less than 1000 square feet (50 x 10). Historically, a cooling tower was at this location. Currently, a segment of old fence, a water tower, and the brick power house structure are nearby. Many samples of soil collected between this location and the nearby creek, which is downgradient, do not contain elevated concentrations of lead. The data pattern strongly suggests a very local source without migration. Plausible explanations for elevated lead in the soil of this area include vehicle emissions and weathering of lead-based paint.

The analytical results indicate that the element lead occurs naturally in the Chauncy area between levels of approximately 8 to 21 mg/kg. This range fits well within expected background averages/means for this element documented in several literature sources (e.g., Shacklette and Boerngen, 1984) of approximately 10 to 17 mg/kg. Anthropogenic sources of lead (e.g., vehicle emissions, lead-based paint, etc.) may increase the concentration of lead in soil by orders of magnitude. Concentrations greater than 1000 mg/kg would not be unexpected.

Lead concentrations in the soil collected from the elementary school playground are well within the background range. Samples collected from the school ground are slightly higher than natural background; typically, twice background. Vehicle emissions and drip line effects are plausible reasons.

EPA evaluates threats posed by lead in soil by considering the average concentration of lead in the soil, the potential for exposure (which includes an evaluation of the soil vegetation cover), the duration of exposure, and multiple pathways of exposure (see, for example, OSWER 9285.7-50). A soil lead concentration above 400 mg/kg is typically considered to be the threshold where further evaluation of exposure should be completed. As such, soil at the school, residences, and all other areas outside of the limited area noted above as “parking area soil” should not pose any threat from the element lead.

Soil lead levels above approximately 1200 mg/kg should be considered to pose potential threats to human health since continued exposure to the soil could contribute to elevated blood lead levels. EPA is especially sensitive to potential exposure to small children. Response actions to address areas of elevated lead could include actions to limit exposure through construction of barriers (e.g., covers or fencing) or prevent exposure through removal. The conditions surrounding the area of contamination will factor into the response decision, if any.

Arsenic

A sample of soil collected along an approximate 2000 square foot area of the creek bank contained an elevated concentration of the element arsenic (92.3 mg/kg). More than 10 soil samples also collected in this area of the creek bank and some of which surrounded the location containing elevated arsenic contained significantly lower levels. The arsenic in all other samples along the creek bank ranged from 4 to 14.5 mg/kg. This data pattern indicates that the contaminated sample is isolated, limited, and not related to surrounding soils.

The analytical results indicate that the element arsenic occurs naturally in the Chauncy area between levels of approximately 1.6 to 8.9 mg/kg. This range fits well within expected background averages/means for this element documented in several literature sources (e.g., Shacklette and Boerngen, 1984) of approximately 5 to 7.4 mg/kg. It is likely that contributions from coal-related activities could slightly increase the level of arsenic in soil above the expected background level. For example, although most sediment samples for arsenic were in the background range, the sample collected from the “mine seep” was 16.7 mg/kg. It is noted here that one sediment sample contained arsenic at 268 mg/kg, but the duplicate was 3.7 mg/kg indicating that the single increased number is highly suspicious.

The analytical data suggest that soils nearer to the substation area contain arsenic levels that are slightly higher than the background. Typically, soil nearer the substation may be twice the background range. The material comprising the ground for the substation appears to be similar to cinders and not similar to surrounding soil. The soils between the substation and the creek are within the background range indicating that the elements within the cinders are not readily migrating to adjacent areas. The substation area is fenced; access and exposure is not likely.

PCB

Several samples of soil contained notable levels of PCB (arochlor 1260). The samples with the highest concentrations (between 6 and 15 mg/kg) were within a concrete foundation which appeared to be attached to the power house building. The foundation is likely part of the former cooling tower structure serving the power house. Soils near to the substation contained PCB concentrations between 0.13 and 4.3 mg/kg. PCB was not detected in samples collected from the school area, residential properties, and from soils near to the creek.

The data suggest that a source of PCB contamination existed near to the power house building. The presence of heavy vegetation suggests a historical source. The data also suggest that the PCBs have not migrated from the substation or the foundation area to adversely impact the environment.

The Toxic Substances Control Act (TSCA) regulates many activities dealing with PCB and PCB contamination. The area is not entirely fenced, but access into the old foundation would occur infrequently. A PCB level of 15 mg/kg within the old foundation does not, by itself, require response actions to protect human health.

A low level of PCB was also found in the sample of water collected from a lower basement of the old power house building. The water sample included material floating on the surface of the water and, thus, is not necessarily indicative of PCB contamination throughout the water column. It is plausible that the low elevation of the basement causes it to receive water seeping in through exterior walls or yet unknown structures, including the nearby "old foundation". The water in the basement does not pose a threat to human health or the environment while inside. The owner has been informed by EPA that the water should not be pumped out "as is".

Dioxin

EPA collected samples of dioxin from various environmental media. Dioxin results from the combustion of organic matter, especially containing chlorine atoms. As such, burning of fuel (inclusive of wood and coal) and especially burning of trash containing plastic increases the level of dioxin in the environment. Dioxin also results from the combustion of certain vehicle fuels. Dioxin is found throughout the natural environment as a result of mans activities.

Typically, dioxin levels of about 50 ppt in the soil would not be expected to contribute to human health risk (e.g., ATSDR 1998) and Agency policy would not necessarily indicate the need for response actions with levels up to about 1 ug/kg.

A dioxin concentration of about 137 ppt was found in the sample of water collected from the basement of the old power house building. The sample included floating material and is, thus, not characteristic of water throughout the water column. It is plausible that ash material on the water surface has contributed to dioxin concentrations in the water.

Due to concern that dioxin in the water may have contaminated nearby soils if it were pumped from the old power house, EPA collected and analyzed soil samples specifically within the drainage pathway from the building to the creek. Dioxin concentrations in these soils do not suggest increased contamination from basement water.

Sediment

At this time there are not standards applicable to creek sediment. However, the National Oceanographic and Atmospheric Administration has produced a compilation of information that may be used to conduct screening of potential contamination issues (see NOAA Screening Quick Reference Tables). NOAAs screening levels indicate contaminant levels at which potential effects to aquatic life may occur from these contaminants in sediment. When comparing the arsenic and lead screening levels to levels for these elements found in the Chauncy area, the data suggest that creek sediment would not pose adverse impacts to aquatic life.

ACTIONS TAKEN

A. On Tuesday, January 17, 2004, OSC's Bob Kelly and Mike Towle mobilized to the Site. The purpose of the Site visit was to familiarize OSC Towle with the Site and to view the locations where additional elevated levels of lead and arsenic were found during the November sampling event.
B. On Wednesday, January 18, 2004, OSC's Kelly and Towle met with the owner of the old salvage building to discuss the findings on his property and future actions. It was explained to the property owner what was found and where. The property owner had agreed to erect a temporary fence around the contaminated lead area and to post no trespassing signs. The temporary fencing is being put into place at this time due to the fact the property owner believing that the location of where the contaminated lead area has been identified is not on his property.

Planned Removal Actions
There are no planned removal actions at this time.

Next Steps

FUTURE ACTIONS

A. OSC Kelly will continue correspondence with local, state, and federal officials.

B. There has been a news report that pesticides have been buried under the ball field where children are playing t-ball. The OSC has decided that in order to assure the safety of the children, EPA will conduct a sampling event at this location. This event will occur as soon as possible.

C. Since the property owner believes he does not own the property that has the elevated lead levels and the deeds could not properly state that he owns it, the OSC has directed the START contractor to sub-contract a land surveyor to conduct a current survey.

D. START will prepare to accompany EPA during a public meeting in the town of Chauncey, WV, during which the analytical results from the sampling assessment and an explanation of their meaning will be presented to the public.

E. OSC Kelly will determine if any future actions will be required at the Site.

Key Issues

The key issues are the possible illegal dumping of hazardous materials and discharge of PCB's.

response.epa.gov/chauncey