

EnviroBlend® has extensive knowledge of the fate and transport of heavy metal contamination, as well as remedial action experience. Our scientists have spent years developing cost-effective chemistries for rendering lead, cadmium, arsenic, hexavalent chromium, zinc and other heavy metal contaminants non-hazardous. This research has resulted in a number of patented products that have been widely applied for heavy metal remediation sites across the country.

### **Marina Cliffs Former Barrel Superfund Site - Wisconsin**

Stockpiled waste pit soil had been previously treated unsuccessfully with cement *ex-situ* treatment of 900 tons of soil that had a pH of 12. Reduced TCLP-chromium from hazardous limits to near the detection limits.

### **Automobile Parts Manufacturer – Indiana**

Remediated approximately 9,000 tons of chromium-impacted soil adjacent to building foundation *in-situ*. Chromium was no longer detectable in groundwater after approximately 150 days of treatment. This resulted in cost savings of approximately \$600,000 compared to traditional dig and haul alternatives.

### **Philotechnics – Tennessee**

Treated approximately 300 tons of low-level radionuclide and heavy metal impacted electric arc furnace dust in containers at this nuclear weapons manufacturing site.

### **Former Industrial Site – New Jersey**

Crushed brick and soil matrix. A 3% dosage of EnviroBlend HX was used to bring leachable chromium levels down below TCLP standard for offsite disposal.

Leaching Results							
Sample Name	Lab ID	EnviroBlend® Dosage		Screening Leaching Test Results			
		Chemical	Percentage	Pretest pH	Solution	Final pH	Chromium, mg/L
KBC-1 Crushed	09-07006	Untreated	-	2.95	TCLP 1	9.72	81.0
		EnviroBlend® HX	3.0%	-	TCLP 1	9.66	1.04
			4.0%	-	TCLP 1	9.51	0.69

### **NYSDEC Erie Canal Frankfort Section – New York**

The New York State Department of Environmental Conservation (NYSDEC) used EnviroBlend to remediate soil contaminated with cadmium and remove it offsite. TCLP levels prior to treatment were leaching above the TCLP standards. The use of EnviroBlend helped NYSDEC save \$30,000 while working to restore the Erie Canal Frankfort Section in New York.

The Erie Canal – Town of Frankfort Section site is part of New York's Inactive Hazardous Waste Disposal Site (NYHWDS) Program, also known as the State Superfund Program. Contaminants of concern in the sediment and wetland soils were polychlorinated biphenyls (PCBs), cadmium, chromium, copper, lead, and mercury. Key components of the cleanup included: dredging and off-site disposal of approximately 24,000 cubic yards of canal sediments; restoration of the excavated canal bed to promote the re-establishment of the ecological environment; imported soil fill and native plantings; and monitoring the restored areas for erosion, settlement, and growth of plantings.

### ***AIG Technical Services, Inc. – Indiana***

Soil impacted with arsenic and chromium was successfully treated with only 2% dosage of EnviroBlend® chemistry and disposed of off-site as non-hazardous soil.

### ***Ductile Iron Foundry – Texas***

A ductile iron foundry in Texas has been using EnviroBlend® CS to treat baghouse dust for the past 11 years. The metals treated annually are Lead, Arsenic, Barium, Beryllium, Boron, Cadmium, Hexavalent Chromium, Mercury, Selenium, and Silver. The baghouse dust pH levels are also of concern for the foundry and are treated with EnviroBlend. The foundry uses the baghouse injection method for application at a dosage rate of 2-3lbs per hour of baghouse run time.

While the initial Toxicity Characteristic Leaching Procedure (TCLP) levels were unknown, the waste did test as hazardous per an EPA inspection. After treatment, the TCLP levels for each metal were all below detection limits.

Since the facility has had great success with EnviroBlend treating the baghouse dust, they recently started treating the baghouse filters prior to removal with a specialized EnviroBlend chemistry. Each filter has tested as non-hazardous since the use of EnviroBlend.

The site is regulated by the Texas Commission on Environmental Quality and the U.S. Environmental Protection Agency.

### ***Former Tomco Wood-Preserving Site – Indiana***

From 1980 to the fall of 1993, Tomco Wood-Preserving used the property to pressure-treat wood products intended for exterior construction. In 1999 the presence of arsenic and chromium impacts in surface and subsurface soils were identified. In 2000, on-site buildings were demolished and a fence was erected around the facility. The Voluntary Remediation Program (VRP) accepted the Tomco application in May 2001. The remediation consisted of excavation along with *in-situ* EnviroBlend® remediation. A total of 2,872 tons of arsenic-and-chromium-containing soil and 116 tons of debris were excavated as part of the source removal operation. After groundwater was sampled for four (4) consecutive quarters, it was determined that arsenic did not exceed acceptable risk levels, and subsequently, VRP issued formal closure to the site.

### ***Industrial Waste Disposal NPL Site – South Carolina***

A site surrounded by extensive residential development required stabilization of more than 57,000 cubic yards of soil impacted by arsenic, cadmium, chromium, lead, mercury, and nickel. Advanced geostatistics and XRF analysis were used to focus the site excavation and treat and handle only affected soil. Our client constructively reused treated soil, sludge, and waste. The treated soil was used as internal berms within the on-site landfill. Results included a significant reduction in the treatment of additional material

by attributing the existing chromium to background sources. The project was performed for a final cost of \$7 million versus the preliminary cost estimate of \$12 to \$25 million, based on data from the US Environmental Protection Agency (USEPA).

### ***Marina Cliffs Barrel Site – Illinois***

Reduced TCLP-chromium from hazardous limits to near the detection limits. The 11,600 tons of stockpiled waste pit soil were pre-treated to address other metals of concern. Additionally, 1,000 tons of this segregated stockpile soil were treated *ex-situ* for chromium.