

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.

Former Herbicide Manufacturing Plant - Missouri

The Armour Road site was used for railroad herbicide manufacturing and blending from 1948 to 1986. Powdered arsenic (95% pure), monosodium arsenic, and various other chemicals were part of the herbicide production. Subsurface testing showed significant arsenic contamination in over 40,000 tons of soil. The EnviroBlend team formulated site-specific treatment chemistry for the contaminated soil that was effective at low doses, saving the owner considerable off-site disposal costs.

Soil Arsenic Concentration, mg/kg	EnviroBlend(R) Dosage, weight %
<2,000	1.15
2,000-5,000	1.75
5,000-15,000	2.3

Approximately 11,000 cubic yards of soil were initially treated at dosages ranging from 0.75 to 2.3 percent by weight. Table 1 provides a summary of full-scale treatability data on the initial soil stockpiles.

Table 1. Initial Full-scale Treatability Data Summary

	Pre-Treatment		Post Treatment	
	Dose	Total Arsenic	TCLP Arsenic	TCLP Arsenic
Range	0.75% – 2.30%	1,700 – 10,600	1.7 – 63.6	0.28 – 2.90
Median	1.25%	5,220	15.1	1.20
Mean	1.53%	5,450	20.7	1.32

Former Mining Site - Missouri

Site soils ranged from 1,000 mg/kg to 5,000 mg/kg arsenic, leaching from non-hazardous to over 30 mg/L. The soil was variable with some mine tailing inclusions. A 2% dosage of EnviroBlend CR50 was appropriate for the majority of site soils, and a 3% dosage of EnviroBlend CR50 was used for the pile/source area soils.

Leaching Results							
Sample Name	Lab ID	EnviroBlend® Dosage		Screening Leaching Test Results			
		Chemical	Percentage	Pretest pH	Solution	Final pH	Arsenic, mg/L
Composite	14-02015	Untreated	-	3.57	TCLP 1	5.52	4.45
		EnviroBlend® CR50	2.0%	-	TCLP 1	5.83	0.087
Source	14-02016	Untreated	-	1.87	TCLP 1	5.50	30.7
		EnviroBlend® CR50	2.0%	-	TCLP 1	5.64	3.87
			4.0%	-	TCLP 1	6.08	0.53

Former Manufacturing Site - Missouri

C Comp and D Comp samples resulted in 1,170 mg/kg and 4,900 mg/kg TCLP arsenic, respectively. Treatment with EnviroBlend HX or EnviroBlend 50/50 HX produced exceptional treatment results at dosage rates of 1-4% wt./wt. EnviroBlend 50/50HX selected for application across affected areas at rates of 1-4%wt./wt. dosage.

Sample Name	EnviroBlend [®] Dosage				
	Chemical	Percentage	Solution	Final pH	Arsenic mg/L
C Comp	Untreated	-	TCLP 1	5.52	4.45
	EnviroBlend [®] HX	1.0%	TCLP 1	5.11	0.87
	EnviroBlend [®] 50/50 HX	2.0%	TCLP 1	5.83	0.087
D Comp	Untreated	-	TCLP 1	5.50	30.7
	EnviroBlend [®] 50/50 HX	2.0%	TCLP 1	5.64	3.87
		4.0%	TCLP 1	6.08	0.53