Minnesota

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.

Twin Cities Army Ammunition Plant – Arden Hills, Minnesota

The former Twin Cities Army Ammunition Plant (TCAAP) is a 4-square mile site located in New Brighton/Arden Hills, Minnesota. The extent of the contamination covers a 25-square mile area. Land use in the area consists of residential, commercial, and industrial with on-site wetlands and woodlands surrounding Rice Creek watershed. From 1941 to 1981, the site was used to manufacture, store, and test small arms ammunition and related equipment. Waste materials such as VOCs, heavy metals, corrosive materials, and explosives were disposed of at 14 source areas, several of the source areas impacted by test-firing activities were targeted for remediation to remove metals and reduce the toxicity characteristics concentrations of the soil.

The remedial objective for this work included on-site stabilization of contaminated soil to below the Toxicity Characteristics Leaching Procedure (TCLP) criteria for lead and antimony and off-site disposal.

Phytoremediation and lead-extraction processes were implemented in earlier remediation phases of the TCAAP project. In 1998 EnviroBlend was selected in a competitive bid process to stabilize additional soil. Total lead concentrations in the soil were between 113,000 and 330,000 mg/kg. Stabilization with EnviroBlend achieved results below the TCLP criteria of 5.0 mg/L for lead.

Contaminated soil at the TCAAP site was characterized, excavated, and stockpiled. A coarse granular EnviroBlend was thoroughly mixed in the stockpiles using conventional construction equipment at a recommended dosage rate of 3%. The EnviroBlend stabilization process does not require the use of water or a curing period. The treated material was then analyzed using the TCLP test. All stabilized material passed the TCLP criteria and was disposed of in a Subtitle D landfill. Ethylenediaminetetraacetic (EDTA) acid was found in soil at a portion of the site, potentially leftover from former lead-extraction processes implemented at the site. EDTA complexes lead and other heavy metals and increases their leachability. Through a quick-turnaround treatability study in a chemistry laboratory, it demonstrated the treatment effectiveness using EnviroBlend on a representative sample of soil contaminated with lead and EDTA.

EnviroBlend was used for the stabilization of 47,000 tons of soil. The total project cost was $777,000 for soil stabilization assistance, including treatability studies, technical assistance, pilot studies, and reagent supply.

Railroad Company – Minnesota

On-site stabilization with EnviroBlend recently saved a large railroad company over $8 million in hazardous waste transportation and disposal costs. Historical sandblasting operations had generated a stockpile of over 90,000 tons of hazardous lead-impacted soil. The site had been included on both the Superfund National Priorities List (NPL) and the Minnesota Permanent List of Priorities.

EnviroBlend treatment additives were mixed with the stockpile of lead-impacted soil to stabilize the hazardous material on-site. The stabilized soil was then disposed of at an off-site Subtitle D non-hazardous landfill.

By using EnviroBlend, this railroad company realized a number of benefits in addition to substantial cost savings, including:

- EnviroBlend was mixed with the contaminated material using conventional construction equipment.
- Soil treated with EnviroBlend is stable over a wide pH range and will not leach in the environment. This translates into long-term liability protection as supported by the USEPA's National Risk Management Laboratory.
- EnviroBlend has been used on over 50 remediation sites across the country and is widely accepted by regulatory agencies.

CMC Lite Yard – Former Pesticide Production - Minnesota

Pesticides were produced from 1938-1968 at this 5-acre former railroad yard adjacent to a residential area. Tests identified significant contamination, both on the site and in the surrounding neighborhoods. The remedial action plan called for the arsenic to be treated in place and disposed of off-site. EnviroBlend chemistry for arsenic was found to be the best overall chemistry for the on-site treatment due to its effectiveness at very low doses and its low cost per treated ton of soil. More than 15,000 tons of contaminated soil were treated and removed from the site.

Privately Held Firing Range - Minnesota

Treated approximately 2,000 cubic yards of lead-based soil in stockpiles ex-situ with backhoes. The material was left on-site.