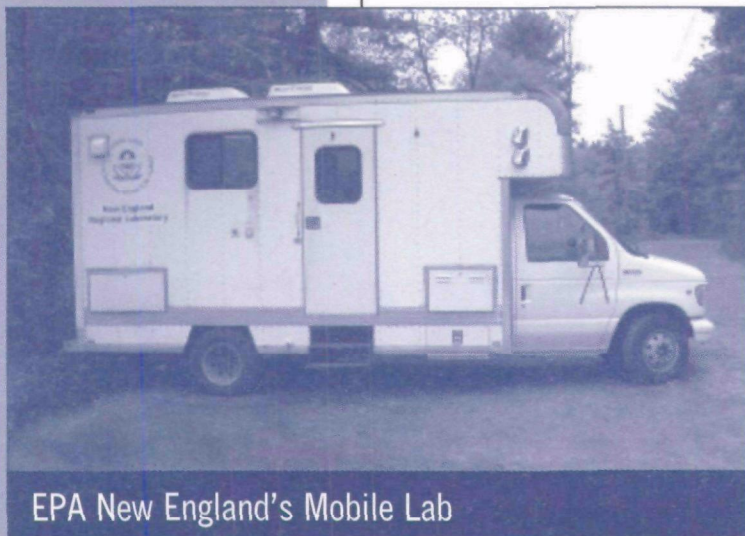




THE MOBILE LABORATORY



EPA New England's Mobile Lab

INTRODUCTION

The EPA New England Regional Laboratory's (NERL) mobile field laboratory provides rapid, cost-effective, on-site analysis of air, water and soil samples for the Brownfields, Superfund, Underground Storage Tank (UST) and Emergency Removal programs. The on-site analysis that the mobile lab provides gives site managers, on-scene coordinators and other field staff immediate information at a site and allows them to make sound decisions about where and how to remediate. Site managers use mobile lab sample analysis to characterize a site, determine the extent of contamination, monitor cleanup and treatment operations and detect potential sources of contamination.

PARTNERS & RELATED PROGRAMS

- EPA New England, Boston
- New England States
- EPA Office of Research & Development
- USGS

CONTACTS

EPA New England
Regional Laboratory
11 Technology Dr.
North Chelmsford, MA
01863
1 (888) 372-7341 (in NE)
1 (617) 918-8300
www.epa.gov/ne/lab

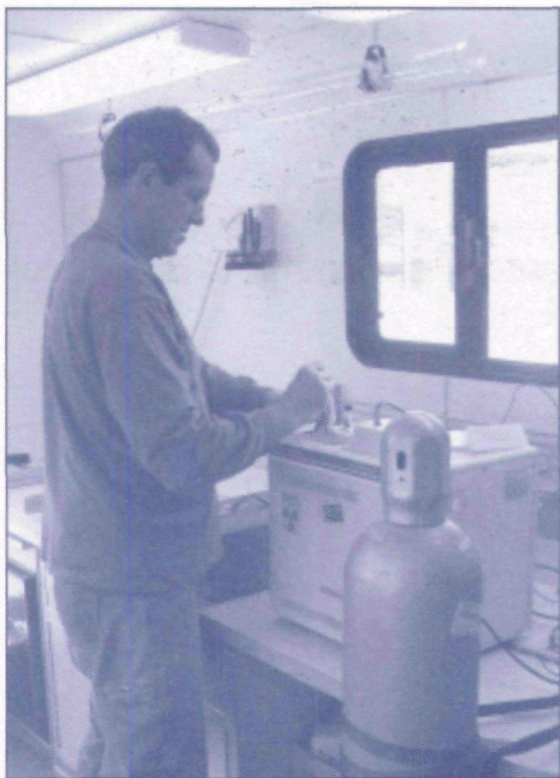
The types of field analysis EPA chemists conduct out of the mobile lab include analysis of volatile organic chemicals (VOCs) such as perchloroethylene (perc), trichloroethylene (TCE) and benzene in water, soils, sediment, sludge and in waste drums. Staff also test for VOCs in indoor air and in soil gas; for pesticides in soil and sediment; for asbestos in soils and bulk materials; for heavy metals in soil, including lead, chromium, arsenic, cadmium, and others; and for polychlorinated biphenyls (PCBs) in soil, sediment, sludge and oil. EPA field chemists also conduct immunoassay tests for such toxics as dioxins, pentachlorophenols, and polyaromatic hydrocarbons (PAHs), and perform wet chemistry tests for dissolved oxygen (DO) and pH in water.

Typically, EPA staff spend four to five days each week working out of the mobile lab, driving from site to site throughout New England to meet the sampling needs of site managers and on-scene coordinators. Currently, the mobile lab conducts between 30 and 50 percent of all the samples analyzed by the region's chemistry department and generates a large percentage of the region's fixed lab work.

BENEFITS OF USING THE MOBILE LAB

Use of the mobile lab provides quick turnaround time for sample analysis so the removal action can proceed without any delay. Mobile analyses maximize efficiency on the job. In addition, waste

continued ➤



EPA Chemist Inside Mobile Lab

characterization makes it possible to determine the most appropriate disposal method and rapid field analyses allow a program manager to minimize soil volumes going to high-cost disposal facilities.

GREEN STREET SITE, HOULTON, MAINE

This PCB and lead contaminated property was eligible for a removal action. The on-scene coordinator had samples collected for analysis during the removal so quick turn around results could be used to determine what soils had to be excavated. On-site analysis also was used to characterize the waste for disposal. Disposal costs associated with PCBs greater than 50 ppm are much greater than costs for the lower level PCB-contaminated soil. PCB analysis in the mobile lab is done on a portable gas chromatograph. Lead analysis is conducted in the mobile lab using a field portable X-ray fluorescence instrument. Thousands of dollars were saved both in analytical cost and by minimizing the amount of soil that needed to be disposed at hazardous waste landfills.

NEW FRANKLIN LAUNDRY SITE, BANGOR, MAINE

Perchloroethylene (perc) used at the New Franklin cleaning facility has contaminated soils and groundwater at the site. A groundwater plume contaminated with perc is migrating off the site and has impacted a nearby residential neighborhood. Perc is also volatilizing out of the groundwater and entering homes via vapor intrusion. Three studies were performed during

August and September of 2003 and January of 2004 to determine the plume location, extent of contamination on the facility's property, and which homes were impacted by the contamination plume. Air samples were collected in soil gas around home foundations, inside home basements (foundation cracks, floor drains etc.) and the first floor living space areas. Samples were analyzed on-site in the mobile laboratory to determine the impact from the perc plume. In some homes, staff were able to pinpoint vapor intrusion locations and took remedial action — sometimes within a day of sampling and identification of a problem area. Quick, accurate, on-site analysis enabled sampling of many homes in the affected neighborhood in a short time period. With information in hand, it was possible to determine which homes need remediation and which homes needed further testing using more sophisticated equipment in a fixed site laboratory.

SUMMARY

The Mobile Laboratory provides EPA site managers the ability to conduct timely, cost-effective, efficient, and thorough site characterizations by facilitating the investigation process with rapid analytical information.

EPA New England's mobile field laboratory provides
rapid, cost-effective, on-site analysis
of air, water and soil samples.