

# O.H. MATERIALS

**Innovative  
Solutions to  
Uncontrolled  
Hazardous  
Waste Sites**



**O H M**

**THE ENVIRONMENTAL SERVICES COMPANY**



## There is no substitute for experience

Disposal of wastes at illegal or uncontrolled hazardous waste sites represents serious liability concerns, cleanup responsibility, and significant cost to companies. Experience in assessing the problems and implementing timely and cost effective corrective actions is an invaluable asset.

OHM has experience at hundreds of hazardous waste site projects for private sector clients, Potentially Responsible Parties (PRPs) and generator groups, including remedial work at more than 200 Superfund National Priority List (NPL) sites. Our experience and innovative approach to designing and executing emergency and remedial actions are the keys to eliminating liabilities associated with:

- Buried/surface drums
- Surface impoundments
- Contaminated soil
- Contaminated ground water
- Above and below ground storage tanks
- Contaminated facilities

Our complete scope of action-oriented services for hazardous waste sites includes site investigations, evaluation of remedial action alternatives, and surface or subsurface remedial action. To meet specific needs, clients may use these OHM services individually or in combination.

OHM is familiar with all proven remediation technologies and is not tied to any particular remedial technique. We own no disposal sites or fixed treatment facilities. This enables us to offer our client the most objective evaluation of alternatives and most cost efficient remedial action plan.

## Site Investigations

Site investigations identify the types of waste and quantify the extent of contamination. We begin with a review of existing data, and then conduct a site-specific assessment program. If additional sampling and analysis are required, OHM utilizes its staff of experienced sampling technicians to implement the proper techniques for maintenance of sample and data integrity.



Wells are drilled for both hydrogeological investigations and ground water recovery.

OHM's fixed and mobile laboratories excel in all aspects of environmental and analytical chemistry. We routinely provide analyses on complex matrices, using the most advanced organic/inorganic analytical instrumentation, including inductively coupled argon plasma, atomic adsorption, gas chromatography, GC/MS and other wet methods and instrument techniques.

All sampling is performed under our corporate health and safety program and analysis is governed by an EPA QA/QC program to ensure reliable results.



OHM technician sampling drums during hazardous waste site cleanup involving 60,000 drums.

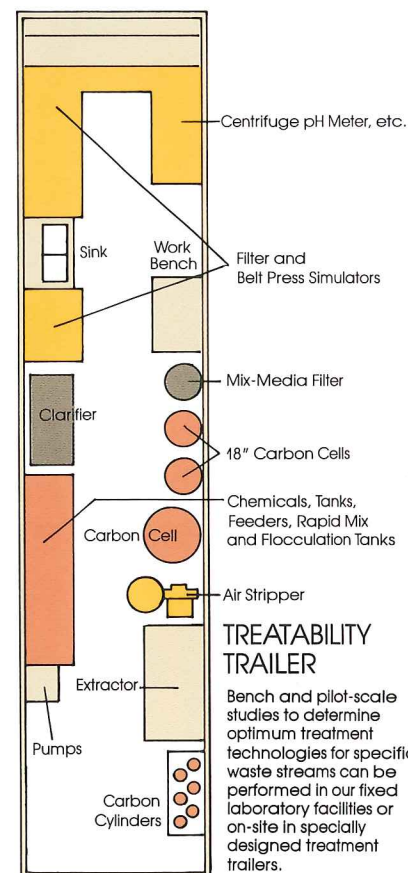
## Remedial Action Alternatives

OHM's assessment and evaluation services are based on hundreds of man years of actual hazardous waste site experience by our extensive staff of degreed professionals which includes:

- Civil/chemical engineers
- Hydrogeologists
- Geotechnical engineers
- Chemists/microbiologists
- Toxicologists
- Industrial Hygienists

These professionals combine their expertise to provide a full scope of evaluation services including:

- Review extent/urgency of situation
- Environmental risk assessment
- Remedial alternatives identification
- Evaluation of alternatives
- Project cost estimates
- Bench/Pilot testing
- Detailed engineering design
- Remedial action plan
- Assistance with agency/client negotiations





## Surface Remediation

Our unique approach involves using mechanical operations to increase production rates and decrease labor cost. An OHM-designed drum grapppler has lowered costs and provided an extra margin of safety at hundreds of sites. The special grapppler attachment rotates 360 degrees to pick up and move drums lying at any angle. It can accomplish in days what would take weeks by traditional methods.

Mobile labs located on-site are a key element in OHM-pioneered bulking procedures which have been shown to dramatically reduce analytical, transportation and disposal costs. Instead of making a waste characterization analysis of each drum, we perform a simple compatibility analysis in a mobile lab to determine if contents of different drums can be bulked. Detailed waste characterization analyses are then performed only on the bulked material and the waste is shipped in bulk, again saving time and money.

Empty or full drums, building components, or debris can be shredded in OHM's mobile shredders



Mobile shredders can be used as volume reduction and cost-saving tools.

to significantly reduce the volume required for packaging, transportation, and disposal.

OHM employs various on-site treatment techniques whenever feasible to detoxify, neutralize, destroy, or reduce the volume of hazardous waste. Off-site disposal, if necessary, is coordinated using licensed transporters and EPA-approved disposal or incineration facilities.

To control the possible spread of contamination, specific entry and exit zones are set up. All personnel and equipment are decontaminated before leaving work areas and wash water is collected and treated on-site.

## Subsurface Remediation

OHM's experience covers hundreds of subsurface projects involving a wide range of organic and inorganic contaminants including petroleum fuels, petrochemicals, both chlorinated and non-chlorinated solvents, pesticides, metals, PCBs, dioxin and other toxic materials.

OHM's services for restoration of contaminated subsurface environments include:

- Source removal
- Recovery of phased liquids
- Recovery/treatment of contaminated ground water
- Flushing of residuals
- Removal/treatment of soils



Fully equipped on-site mobile labs perform cost effective analysis on a rapid turnaround basis.

Projects directed toward recovery of pure or phased products usually involve automated recovery systems. Ground water decontamination efforts often require more complex recovery systems which may include:

- Interceptor/recovery wells
- Injection recovery points
- Skimmer/scavenger wells
- Biologically enhanced flushing systems
- Containment walls/barriers

These systems, with the addition of dynamic flushing with OHM's patented Underground Recovery and Treatment system, may also be used to decontaminate unsaturated zones.



Extractions of contaminants from soil using custom-designed on-site treatment or destruction technology.



In order to perform both surface and subsurface on-site treatment, OHM has designed and fabricated a wide range of mobile treatment equipment, including:

- Carbon adsorption filters
- Clarifiers and separators
- Multimedia prefilters
- Polymeric exchange adsorbers
- Equilization/aeration vessels
- Air and steam stripping units
- Mixing/transfer equipment
- Bio-reaction vessels
- Retention pools
- Solids dewatering systems



OHM's biotechnology laboratory assists in evaluating techniques to destroy contaminants on-site and minimize off-site disposal requirements.

The traditional technology of removing organic chemicals from ground water by activated carbon filtration can be made much more cost effective by using physical and chemical pre-treatment techniques prior to carbon filtration.



On-site treatment systems can be housed in portable buildings for year-round operation.



OHM enhances project safety and productivity by the use of mechanized material handling systems.

Biological treatment, as an alternative or polishing technique, can also be used with a growing number of contaminants to increase treatment efficiency.

OHM's mobile treatment units can be linked to form custom treatment systems on-site when multiple treatment technologies are required. To ensure that the

most efficient treatment system is designed for each project, bench and/or pilot scale studies are performed. Our treatment systems reduce cost by decreasing transportation and disposal requirements, and more importantly, reduce or eliminate the liability associated with off-site disposal.

**O.H. Materials Corp.**  
 16406 U.S. Route 224 East  
 Findlay, OH 45840  
 419-423-3526  
 800-537-9540

**Response Centers**

Princeton, New Jersey  
 Sacramento, California  
 Grand Rapids, Michigan  
 Orlando, Florida  
 Minneapolis, Minnesota  
 Findlay, Ohio  
 Houston, Texas  
 Joliet, Illinois  
 Worcester, Massachusetts  
 St. Louis, Missouri  
 Richmond, Virginia  
 Mobile, Alabama  
 Baton Rouge, Louisiana  
 Atlanta, Georgia

**OHM is your total-scope environmental services company**

In addition to hazardous waste site cleanup, our scope of services includes:

- Ground Water Recovery and Treatment
- On-site Treatment Equipment
- Facilities Decontamination
- Biological Treatment
- Technical Advisory Services
- Laboratory Services
- Management of Underground Storage Tanks
- Emergency Response
- Surface Impoundment Restoration
- Explosives/Reactives Handling

 **OHM**  
**A Subsidiary of ETTC**

Environmental Treatment and Technologies Corporation