

O.H. MATERIALS

**Innovative
Solutions to
Contaminated
Facilities**



OHM

THE ENVIRONMENTAL SERVICES COMPANY

There is no substitute for experience

Contamination of structural or process facilities means wasted assets—lost production and lost opportunities. Based on current regulatory trends, contaminated facilities are virtually unsaleable. Where you have contamination problems, you need experience to solve them effectively and minimize current and future liabilities.

OHM offers the experience of thousands of successfully completed environmental projects throughout the United States and Canada since 1969, including hundreds of projects involving facilities contaminated with:

- PCBs
- Dioxins
- Pesticides/Herbicides
- Cyanides
- Asbestos
- Mercury
- Radioactive materials
- Military agents
- Pharmaceuticals
- Process chemicals/intermediates/by-products
- Other toxic materials

From this extensive experience, we have developed a wide range of action oriented services to help clients solve contamination problems. These services include:

- Site investigations
- Evaluation of remedial action alternatives
- Decontamination services
- On-site detoxification/treatment of contaminants

Clients may use these OHM services individually or in combination to fit their needs. By utilizing a turnkey approach, our full range of decontamination services coupled with project management can significantly reduce clients' costs and speed project completion by eliminating or minimizing subcontractor involvement.

Site Investigations

These investigations identify and quantify the type and extent of contamination. We begin with a detailed site assessment and review of any existing data. If additional sampling and analysis are required, OHM has experienced sampling technicians versed in proper techniques for maintenance of sample and data integrity.



Sampling prior to decontamination of electrical substation equipment involving PCBs.

OHM fixed and mobile laboratories excel in all aspects of environmental and analytical chemistry. Equipped with the most advanced organic/inorganic analytical instrumentation, including AA, GC, GC/MS, and other wet methods and instrument techniques, we routinely provide analyses on complex matrices.

Throughout the decontamination process, pre-contamination samples are compared to on-going analysis to document progress and final results. 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.



Hazardous waste analysis using GC and GC/MS

Evaluation of Remedial Action Alternatives

From information gathered during site investigations, a complete technical approach and work plan is developed. OHM's assessment and evaluation services are based on hundreds of man years of actual decontamination project experience by our extensive staff of degreed professionals which includes:

- Toxicologists
- Industrial Hygienists
- Chemists/Chemical Engineers
- Environmental Engineers
- Civil/Mechanical Engineers
- Microbiologists/Hydrogeologists



Data evaluation and problem characterization are enhanced through computer technology

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

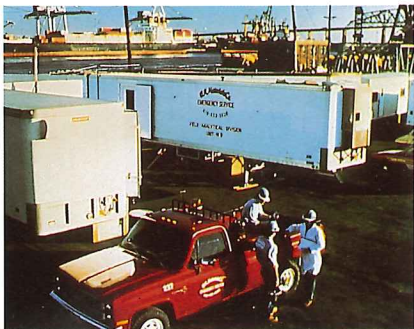
- Review extent/urgency of situation
- Environmental risk assessment
- Remedial alternatives identification
- Evaluation of alternatives
- Preliminary/final cost estimates
- Bench/pilot testing programs
- Detailed engineering design
- Remedial action plan
- Agency/client negotiations assistance

OHM is familiar with all proven decontamination technologies and is not tied to any particular approach. This enables us to offer our client the most objective evaluation of alternatives and most cost efficient remedial action plan. For complex problems, the decontamination plan may include bench testing of operational alternatives to verify the optimum decontamination methodology.

Decontamination Services

OHM's experience has involved a wide range of contamination resulting from fires, spills and process applications such as metal plating lines, paint manufacturing, painting/coating operations and machining, and planned changes in chemical processes at both pilot and process facilities.

We have decontaminated electric generating stations and substations, electrical/electronic components, transformer vaults, retail stores, offices, food processing plants, schools, warehouses, chemical and manufacturing plants, houses, tanks, heat exchangers, process lines, building exteriors, and even streets and sidewalks. Because of our nationwide network of response centers, we can provide decontamination services on either an emergency or planned remedial basis.



OHM mobile labs are often used on decontamination projects to monitor progress and verify results.

Through years of experience, OHM has pioneered many decontamination technologies to cost effectively return facilities to productive use. Successful techniques may include:

- Solvent application/ extractions
- High pressure surfactant cleaning
- Hydroblasting
- Steam cleaning
- Sand blasting
- Various wet/dry abrasive cleaning techniques
- Chemical detoxification



Hydraulic shears are cost effective tools for cutting up tanks, process lines and other structures during decontamination projects.

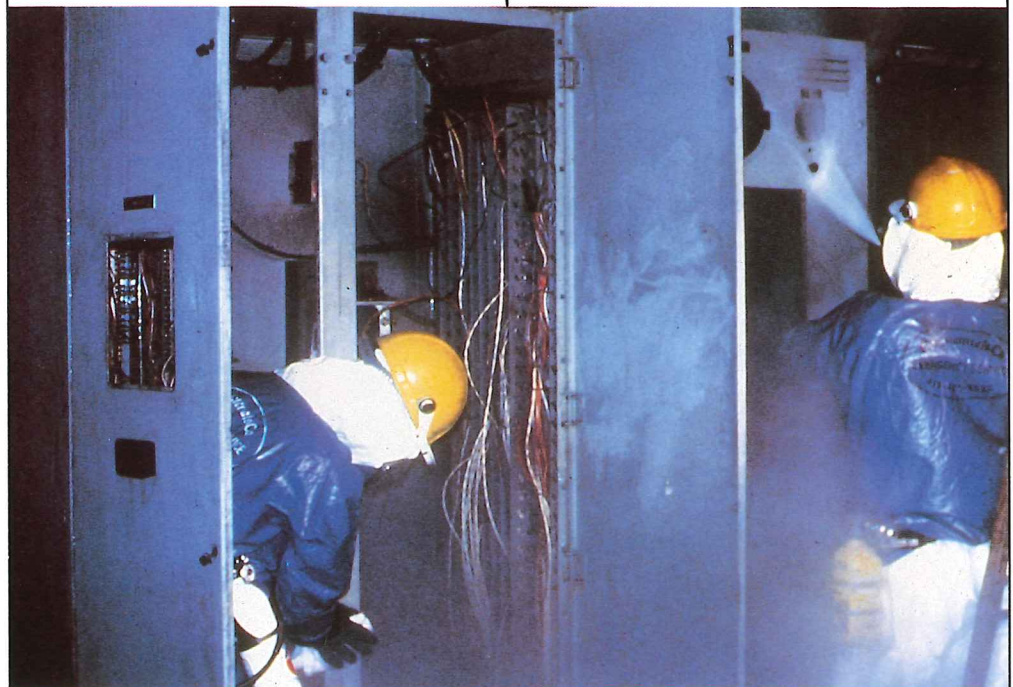
Some porous materials such as wood or concrete may have absorbed contamination. A surface cleaning followed by application of special sealing



Porous materials after initial surface cleaning can be sealed with an airless application of special sealants.

materials may prove to be more cost effective than removal and disposal.

OHM also specializes in maintaining complete client confidentiality and low visibility at project sites. For projects at operating facilities, particular attention is placed upon minimizing disruptions. This is accomplished by segregating work areas and scheduling tasks during non-peak production hours. Engineering controls are employed to prevent the spread of contamination, protect on-site personnel, and facilitate project completion.



OHM technicians cleaning electrical panels contaminated with PCBs by applying FREON based solvents.

On-Site Treatment

In many cases, on-site treatment can destroy, neutralize, or reduce the volume of the contaminants. This eliminates or minimizes our clients' future liabilities, and is often less costly than traditional transportation and disposal.

A variety of mobile and modular equipment, designed and fabricated by OHM for high process rates and long retention times, can be used for such applications. This equipment may include:

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

Unique contamination problems may require specialized on-site treatment. In these cases, OHM uses its resources to design, fabricate, test and implement both pilot and full-scale systems for on-site applications.



OHM treatment system prior to enclosure for winter operations on a major decontamination project.

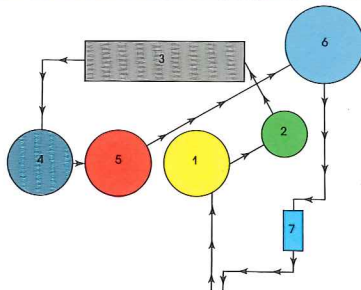


Diagram and photo show typical on-site system for treatment of contaminants: (1) vacuum receiver (2) transfer station (3) clarifier (4) mixed media pre-filter (5) carbon filter (6) 12,000 gal. pool (7) 22gpm HYDRO-LASER.

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Atlanta, Georgia
Baton Rouge, Louisiana
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Grand Rapids, Michigan
Minneapolis, Minnesota
Orlando, Florida
Ottawa, Illinois
Princeton, New Jersey
Richmond, Virginia
Sacramento, California
St. Louis, Missouri
Worcester, Massachusetts

OHM is your total-scope environmental services company

In addition to decontamination of facilities, our scope of services includes:

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

 **OHM**
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Environmental Treatment and Technologies Corporation