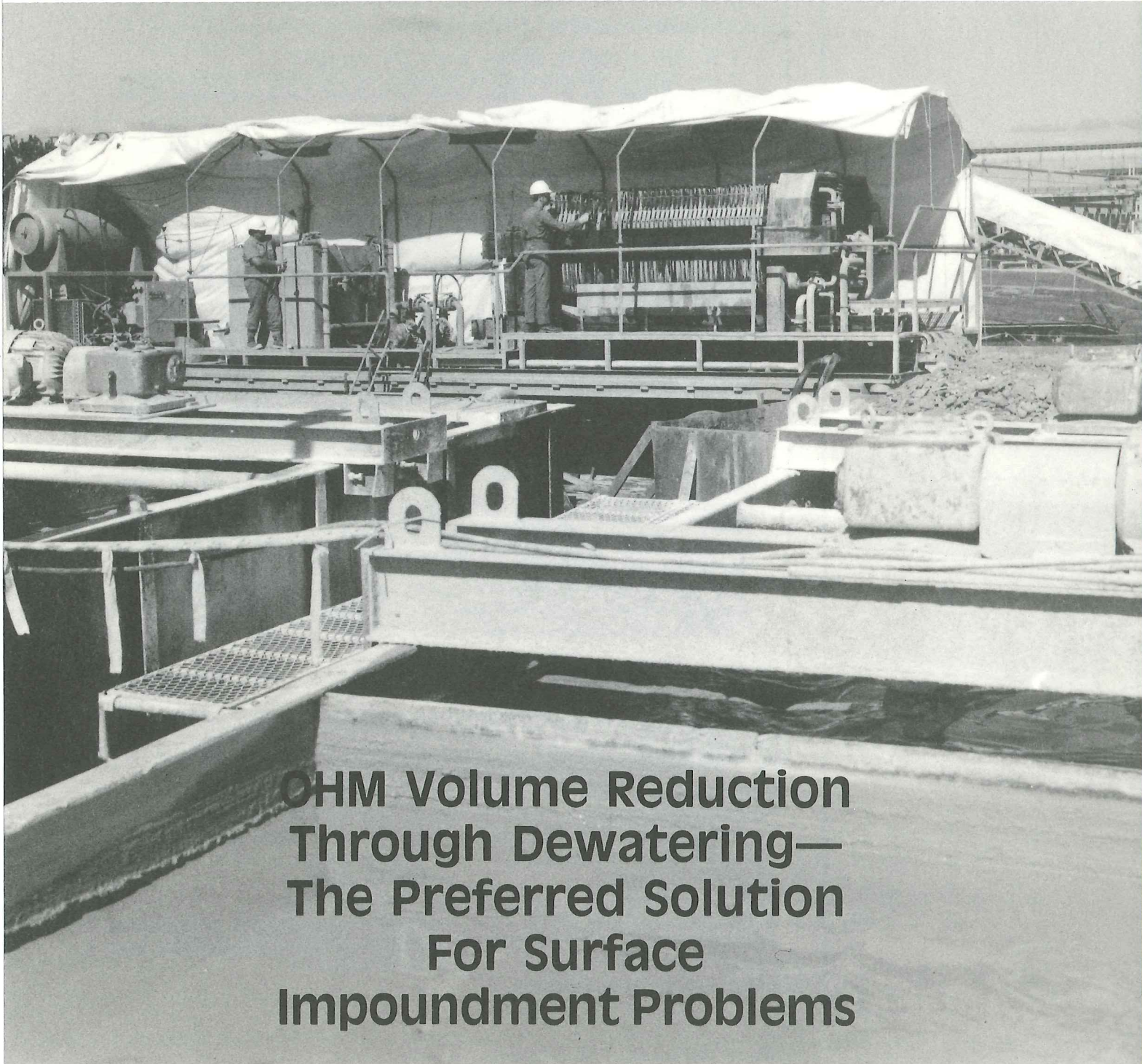


# Dewatering Services

**O.H. Materials Corp.**



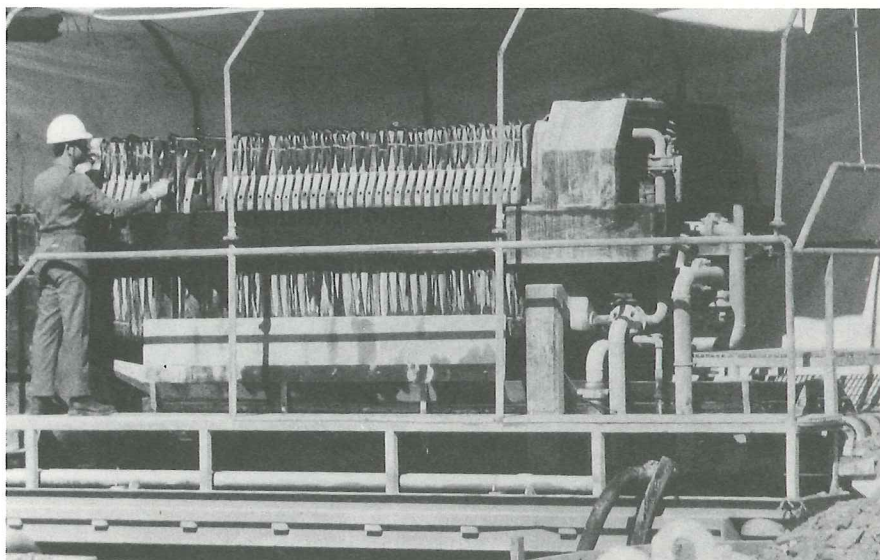
**OHM Volume Reduction  
Through Dewatering—  
The Preferred Solution  
For Surface  
Impoundment Problems**

## OHM's Dewatering Services Can Eliminate or Reduce Problems Associated With:

- RCRA land disposal restrictions
- Landfill capacity shortages
- High transportation, disposal and treatment costs
- RCRA retrofit and monitoring requirements
- Long-term liability associated with transportation and disposal
- High solids effluent in settling ponds

## Recessed-Chamber Filter Press Capabilities

- Influent solids: .5% - 50%
- Solids in cake: 35% - 65% by weight
- pH range in sludge: 4-9 (Others can be treated and neutralized)
- Cubic yards per cycle: 1.97 - 3.74
- Processing rate: 30,000 gpd - 100,000 gpd in situ
- Volume reduction: 50% - 90%



## Sludges Dewatered

- API Separator Sludges
- Biological Sludges
- Calcium Carbonate Sludges
- Calcium Chloride Sludges
- Carbon Sludges
- Chlorinated Organic Sludges
- Creosote Sludges
- Dissolved Air Flotation Sludges
- Lime Treatment Sludges
- Metal Hydroxide Sludges
- Oil- and Water-Based Drilling Muds
- Oil-Production Wastes
- Paper and Pulp Sludges
- Paint Sludges
- PCB Sludges
- Plating Wastes
- Refinery Wastes
- Rubber-Production Wastes
- Tank Bottoms

# OHM's Total Project Cost Benefits

The following example is based on the assumption that there are 5000 wet tons of sludge in situ with a solids content of 15%. Please note the significant savings on total cost with OHM's higher level of volume reduction. Note that lower per-ton costs do not necessarily reduce total project cost.

## TREATMENT BY SOLIDIFICATION WITH KILN DUST

*Assume .5 pound kiln dust mix ratio per pound of sludge.*

### SOLIDIFICATION COST:

Kiln Dust . . . . .	2500 tons × \$20/ton . . .	\$ 50,000.00
Mixing . . . . .	7500 tons × 10/ton . . .	75,000.00
Transportation . . .	7500 tons × 30/ton . . .	225,000.00
Disposal . . . . .	7500 tons × 130/ton . . .	975,000.00
Disposal Tax . . . .	7500 tons × 20/ton . . .	150,000.00

**TOTAL COST: SOLIDIFICATION \$1,475,000.00**

## TREATMENT BY BELT PRESS OR CENTRIFUGE DEWATERING

*Cake produced = 35% dry solids by weight*

### DEWATERING COST:

5000 wet tons in situ × 15% solids = 750 tons dry solids by weight (TDS)

750 TDS ÷ 35% = 2143 tons cake produced for disposal

Belt Press or Centrifuge

Dewatering . . . . .	2143 tons × \$40/ton . . .	\$ 85,720.00
Transportation . . .	2143 tons × 30/ton . . .	64,290.00
Disposal . . . . .	2143 tons × 130/ton . . .	278,590.00
Disposal Tax . . . .	2143 tons × 20/ton . . .	42,860.00

**TOTAL COST: BELT PRESS/  
CENTRIFUGE DEWATERING \$471,460.00**

## TREATMENT BY OHM'S RECESSED-CHAMBER FILTER PRESS DEWATERING

*OHM's cake produced = 65% dry solids by weight*

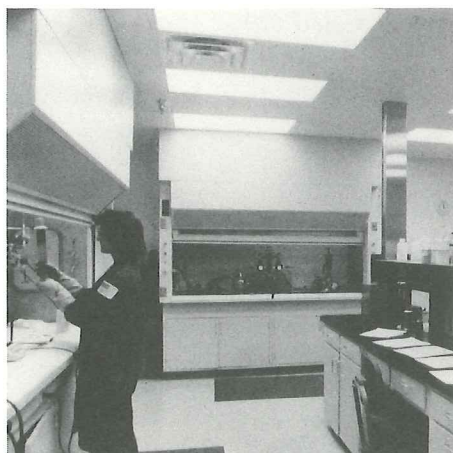
### DEWATERING COST:

5000 wet tons sludge in situ × 15% solids = 750 tons dry solids by weight (TDS)

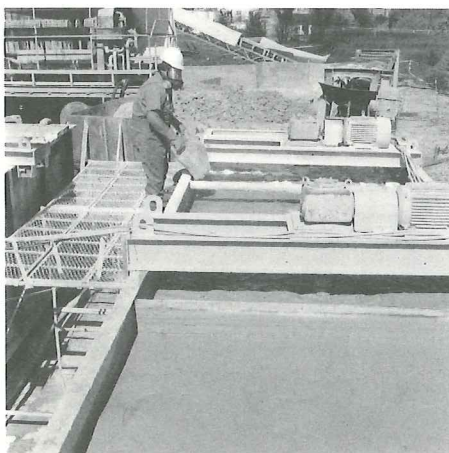
750 TDS ÷ 65% = 1154 tons cake produced for disposal

OHM Dewatering (Average Price) . . . . .	1154 tons × \$100/ton . . .	\$115,400.00
Transportation . . . . .	1154 tons × 30/ton . . .	34,620.00
Disposal . . . . .	1154 tons × 130/ton . . .	150,020.00
Disposal Tax . . . . .	1154 tons × 20/ton . . .	23,080.00

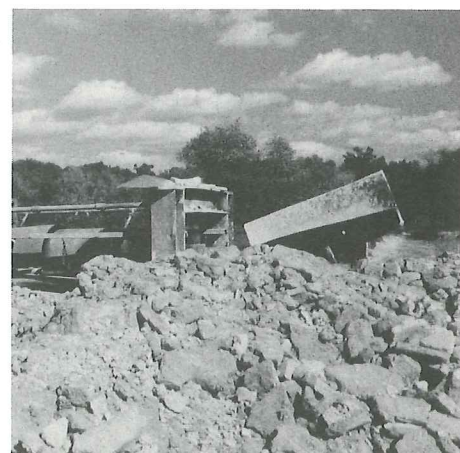
**TOTAL COST: OHM'S RECESSED-CHAMBER FILTER PRESS DEWATERING \$323,120.00**



A dewatering project begins with sludge analysis in OHM's specialized dewatering laboratory.



OHM removes sludge from the lagoon using an auger barge and pumps it into mixing tanks, where chemical materials are added to process the sludge more quickly through the press.



The filter press produces a cake with a 35% to 65% solids content.

# OHM Dewatering Cost Analysis Worksheet

## RECESSED-CHAMBER FILTER PRESS DEWATERING

$$\underline{\hspace{2cm}} \times \underline{\hspace{1cm}} \% \text{ solids} = \underline{\hspace{2cm}} \text{ tons dry solids (TDS)}$$

$$\text{TDS} \div \underline{\hspace{1cm}} \% \text{ dry solids by weight in cake}^* = \underline{\hspace{2cm}} \text{ tons of cake produced}$$

$$\underline{\hspace{2cm}} \text{ tons of cake} \times \$ \underline{\hspace{1cm}} / \text{ton processing} = \$ \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \text{ tons of cake} \times \$ \underline{\hspace{1cm}} / \text{ton disposal} = \$ \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \text{ tons of cake} \times \$ \underline{\hspace{1cm}} / \text{ton transportation} = \$ \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \text{ tons of cake} \times \$ \underline{\hspace{1cm}} / \text{ton haz. waste tax} = \$ \underline{\hspace{2cm}}$$

Total Dewatering Cost: \$                     

## BELT PRESS OR CENTRIFUGE DEWATERING

$$\underline{\hspace{2cm}} \text{ wet tons of sludge in situ} \times \underline{\hspace{1cm}} \% \text{ solids} = \underline{\hspace{2cm}} \text{ tons dry solids (TDS)}$$

$$\text{TDS} \div \underline{\hspace{1cm}} \% \text{ dry solids by weight in cake}^* = \underline{\hspace{2cm}} \text{ tons of cake produced}$$

$$\underline{\hspace{2cm}} \text{ tons of cake} \times \$ \underline{\hspace{1cm}} / \text{ton processing} = \$ \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \text{ tons of cake} \times \$ \underline{\hspace{1cm}} / \text{ton disposal} = \$ \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \text{ tons of cake} \times \$ \underline{\hspace{1cm}} / \text{ton transportation} = \$ \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \text{ tons of cake} \times \$ \underline{\hspace{1cm}} / \text{ton haz. waste tax} = \$ \underline{\hspace{2cm}}$$

Total Dewatering Cost: \$                     

## SOLIDIFICATION                      kiln dust mix ratio

$$\underline{\hspace{2cm}} \text{ wet tons sludge} \times \underline{\hspace{1cm}} \text{ kiln dust mix ratio} = \underline{\hspace{2cm}} \text{ tons of kiln dust needed}$$

$$\underline{\hspace{2cm}} \text{ tons KD needed} \times \$ \underline{\hspace{1cm}} / \text{ton kiln dust} = \$ \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \text{ tons KD} + \underline{\hspace{2cm}} \text{ wet tons sludge} \times \$ \underline{\hspace{1cm}} / \text{ton disposal} = \$ \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \text{ tons KD} + \underline{\hspace{2cm}} \text{ wet tons sludge} \times \$ \underline{\hspace{1cm}} / \text{ton transportation} = \$ \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \text{ tons KD} + \underline{\hspace{2cm}} \text{ wet tons sludge} \times \$ \underline{\hspace{1cm}} / \text{ton mixing} = \$ \underline{\hspace{2cm}}$$

$$\underline{\hspace{2cm}} \text{ tons KD} + \underline{\hspace{2cm}} \text{ wet tons sludge} \times \$ \underline{\hspace{1cm}} / \text{ton haz. waste tax} = \$ \underline{\hspace{2cm}}$$

Total Solidification Cost: \$                     

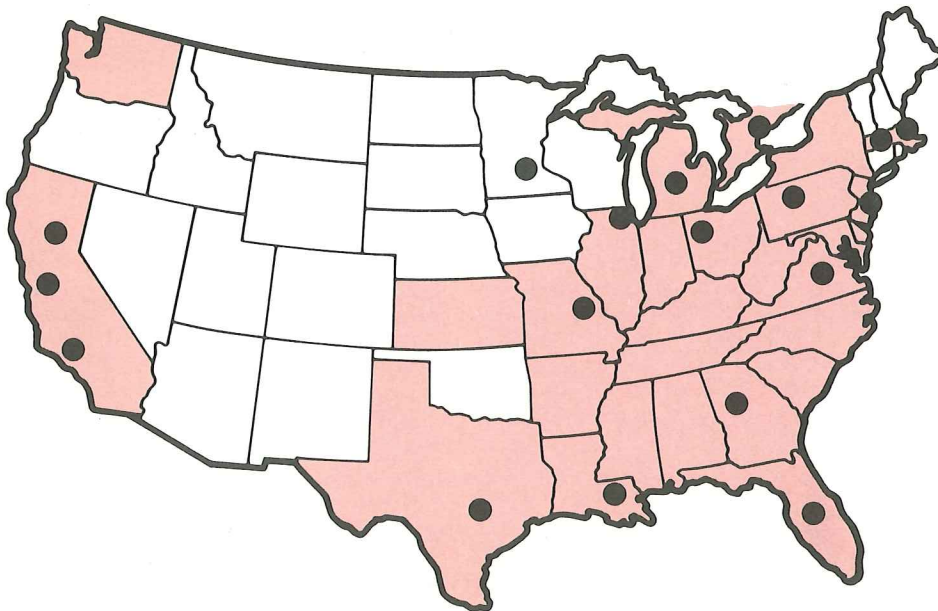
\*Note: Must be % dry solids *by weight* to effect an equal basis for comparison.

## O.H. Materials Corp.

- 20 years experience, 6,500 projects completed.
- Nationwide on-site environmental services from remediation centers in 19 locations including Canada, and six laboratories.
- Total dewatering project management.
  - Reliable, accurate, preproject dewatering analysis through use of model equipment that processes an actual sludge sample.
  - Technical proposal detailing:
    - Percent volume reduction by weight
    - Percent solids in cake
    - Compressive strength
    - Material densities
    - Average daily production levels
    - Estimated time to complete project
    - Product recovery options
  - OHM-trained personnel safely operating company-owned, mobile equipment.
  - Versatility in handling a wide variety of sludge types.
  - Sludge pumping, removal and handling; pretreatment; and mobile, recessed-chamber filter press dewatering.
  - Product recovery and recycling.
  - All related auxiliary services, including treatment of effluent prior to discharge.

**OHM contractually commits to cake solids content, compressive strength and quality.**

## Experience



- Dewatering Project Experience
- OHM Remediation Service Centers

## OHM's Full Range of Surface Impoundment Services

- Site assessment and investigation
- Engineering, design and construction
- Preproject analysis of dewatering potential
- Project management
- Lagoon restoration
- Lagoon closure
- Mobile recessed-chamber filter press dewatering of pit, pond, lagoon and tank sludges
- Filtration
- In situ solidification/stabilization
- Bioremediation
- Dredging and pumping
- Materials handling and movement
- Product recovery
- Treatment of effluent
- Mobile infrared incineration
- Mobile thermal volatilization
- Monitoring, sampling and analysis
- Data management

## Nationwide Remediation Service Centers

- Atlanta, Georgia
- Austin, Texas
- Baton Rouge, Louisiana
- Boston, Massachusetts
- Chicago, Illinois
- Findlay, Ohio
- Lansing, Michigan
- Los Angeles, California
- Methuen, Massachusetts
- Minneapolis, Minnesota
- Orlando, Florida
- Pittsburgh, Pennsylvania
- Princeton, New Jersey
- Richmond, Virginia
- Sacramento, California
- St. Louis, Missouri
- Walnut Creek, California
- Toronto, Ontario, Canada

## Customer Service

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Findlay, OH 45839-0551  
800-537-9540  
419-423-3526

