



# Soil Remediation For UST Sites

## Excavation And Off-Site Treatment

**E***xcavation and off-site treatment is a method for removing contaminants from small volumes (less than 1,000 cubic yards) of soil that cannot be treated effectively on site. Contaminated soil is excavated and then treated. Typical treatment facilities include:*

- *Low temperature thermal desorption facilities*
- *Asphalt plants*
- *Incinerators*

*This technique can be used with many different kinds of soils and contaminants. It offers the benefit of actually destroying contaminants rather than simply moving them from one location to another.*

### **Petroleum Types And Constituents**

- All types of petroleum products

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<b>Advantages</b>	<ul style="list-style-type: none"> <li>• Easy and rapid to implement</li> <li>• Destroys contaminants</li> <li>• Minimizes long-term liability</li> <li>• Can reuse some types of soil for backfill</li> <li>• Effective on soils with varying concentrations and constituents</li> </ul>
<b>Limitations</b>	<ul style="list-style-type: none"> <li>• Expensive for large volumes of soil with low contaminant concentrations, high moisture, or clay content</li> <li>• Transportation costs can be high</li> </ul>
<b>System Components</b>	<ul style="list-style-type: none"> <li>• System components can include: <ul style="list-style-type: none"> <li>• <i>Excavation equipment</i></li> <li>• <i>Trucking equipment</i></li> <li>• <i>Equipment for sorting and sizing</i></li> <li>• <i>Rotary dryer or kiln</i></li> <li>• <i>Thermal screw</i></li> <li>• <i>Offgas treatment equipment</i></li> </ul> </li> </ul>
<b>Wastestream Treatment</b>	<ul style="list-style-type: none"> <li>• Air emissions equipment</li> </ul>
<b>Parameters to Monitor<sup>1</sup></b>	<ul style="list-style-type: none"> <li>• Contaminant concentrations in pre- and post-treatment soil</li> </ul>
<b>Cleanup Levels and Timing<sup>2</sup></b>	<ul style="list-style-type: none"> <li>• Can excavate to cleanup standards</li> <li>• &gt;99% removal efficiency</li> <li>• Typically completed in 1 to 3 days</li> </ul>
<b>Costs<sup>3</sup></b>	<ul style="list-style-type: none"> <li>• For an average site<sup>4</sup>, \$70,000 to \$180,000 (\$70 to \$180/cu yd)</li> </ul>

<sup>1</sup>"Parameters to monitor" are for performance purposes only; compliance monitoring parameters vary by state.

<sup>2</sup>Cleanup standards are determined by the state.

<sup>3</sup>Costs include equipment, and operation and maintenance.

<sup>4</sup>An "average site" assumes minimal delays in corrective action and a moderately heterogeneous and permeable subsurface.