



Case study: Air Treatment
 TerraTherm - Environmental Services
 Woodlands, Texas

- BENEFITS**
- Compact and portable system
 - Indirect cooling without water or refrigeration
 - Maintenance free design

Thermo-Z® heat exchanger indirectly cools 1600°F incinerator exhaust gas to 230°F using outside air

Cleaning up a Dirty Environment

Treating contaminated soil efficiently poses a tremendous challenge for environmental specialists, but TerraTherm, an environmental services company in The Woodlands, Texas, has risen to the occasion by introducing a system that takes advantage of a Munters Thermo-Z® air-to-air heat exchanger.

TerraTherm is an affiliate of Shell Technology Ventures, which develops commercial applications for concepts resulting from Shell Oil Company's research. Shell developed a portable soil abatement system mounted on a trailer that is marketed by TerraTherm. Employing In Situ Thermal Desorption (ISTD) technology, the system remediates a broad range of organic compounds such as PCBs, pesticides, petroleum wastes, and chlorinated solvents, all without excavating the soil.

At the heart of the process lies a heat source consisting of thermal blankets placed on the ground for surface soil remediation and thermal wells bored for remediation

zones extending up to several hundred feet deep. Heating elements in the blankets or wells heat the soil, causing the contaminants to vaporize. A vacuum system then draws the vapors from the ground.

The heat in the soil destroys most of the contaminants, and the rest go to a vapor treatment system. A thermal oxidizer incinerates 90% of the volatile organic compounds (VOCs), and the remaining 10% pass through an activated carbon adsorption process. To work effectively,

adsorption requires lower temperatures than the 1600°F from the incinerator exhaust gas. A Munters Thermo-Z® heat exchanger indirectly cools the exhaust to 230°F using outside air.

With tens of thousands of contaminated sites in the U.S., TerraTherm sees a significant potential for the ISTD system and has begun production to meet the demand. Eventually, the company envisions several dozen units operating around the country.

