DRYING SYSTEMS

Thermal Remediation • Soil Remediation • Drilling Muds • Drill Cuttings • Pyrolysis-Recovery

Leading The Industry In Thermal Desorption Technology

Vulcan Drying Systems 70' Indirect Thermal Desorption Unit with Vapor Recovery

Vulcan Drying Systems Indirect Fire Holo-Flite® Thermal Desorption Unit with Vapor Recovery Unit

Vulcan Drying Systems Direct Fired Mobile Soil Reclamation Unit

Vulcan Drying Systems Indirect Heated Rotary Kiln with Vapor Recovery Unit

Your Equipment Manufacturer for Material Processing

For more information on our custom-built systems, please visit: vulcandryingsystems.com
Vulcan Drying Systems is the global leader in the environmental remediation, thermal drying and calcining industries, specializing in the processing and recovery of a variety of materials, including frac sand, automotive shredder residue, bone meal, drilling muds and iron ore. Our indirect fired rotary kilns, electrically heated units and hot oil processors are currently being used in numerous remediation and recovery projects worldwide.

Vulcan Drying Systems are able to capture waste energy and convert waste materials to beneficial use, helping to reduce your company's disposal costs and environmental footprint. Our experienced and highly-qualified team can design and manufacture a system to fit your specifications and will provide set-up, commissioning, training and maintenance support services over the lifetime of your project.

Visit our website to view videos, case studies and information on drying, calcining and thermal desorption processes and applications. Our knowledgeable staff will answer any questions you may have and will provide you with a variety of services in the design of your system, including drafting, mass and energy balance, ASPEN simulation, project management, engineering and repair and preventative maintenance.

From agriculture to mining to the oil and gas industry, Vulcan Drying Systems can design a solution for almost any material or application. Let us develop a turnkey solution and manufacture the ideal system to meet your processing needs.
**70' Indirect Thermal Desorption Unit with Vapor Recovery**

**Equipment Description:**

70' long x 7' ID indirect fired rotary thermal desorption unit with vapor recovery consisting of:

- Quench scrubber system
- Chiller and heat exchanger
- Knock-out pot
- Thermal oxidizer (also used as waste gas burner to supplement main burner to reduce fuel consumption of main unit)
- Oil water separator

**Process Description:**

The primary thermal desorption unit operates at temperatures of up to 950°F in an oxygen deficient environment. Cleaned solids are discharged from the system through a water cooled screw auger and vapors are drawn through the vapor recovery unit where hydrocarbons are condensed and recovered. Lighter, non-condensable hydrocarbons are oxidized, and the heat generated from this process is reused to heat the plant, reducing the fuel consumption.

**What is the capacity?**

20 - 30 tons per hour

**What is it used for?**

Removing VOCs and hydrocarbons from contaminated waste and soil

**Where did it go?**

Brazil, to a general waste facility for one of the largest environmental and waste treatment companies in the country

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**Holo-Flite® Thermal Desorption Unit With Vapor Recovery Unit**

**Equipment Description:**

Hot oil processor consisting of a 10 MMBtu hot oil boiler and Metso four screw Holo-Flite® dryer with vapor hood, feed and discharge auger. The vapor recovery unit consists of:

- Quench scrubber system
- Chiller and heat exchanger
- Knock-out pot
- Thermal oxidizer
- Oil water separator

**Process Description:**

The system is heated by high temp thermal oil, where heat transfers in both the screws and outer shell of system. The system operates at temperatures of up to 700°F. Hot oil heater comes complete with high temp shutoff valves, oil filter, inlet and return header and high temp rotary joints. The quench operates at 200°F and dust, light oil and water are condensed and removed from vapor steam. The quench scrubber has a vapor outlet, water/oil outlet and sludge sump with drain outlet. The refractory lined thermal oxidizer is rated at 2,000°F, with a 2 to 5 second residence time.

**What is the capacity?**

5 - 8 tons per hour

**What is it used for?**

Drill cuttings

**Where did it go?**

Nigeria
Bethlehem Porcupine Portable Thermal Desorption System with VRU

Equipment Description:
A Bethlehem Model 3018 18' x 30" Holo-Flite® processor with trapezoidal vapor dome. Processor comes equipped with a Gen- cor Model SFG-600 Hot Oil Heater w/ Pump, 6 MMBtu/hr. Hot Oil Heater with an expansion tank.

Process Description:
Trailer-mounted hot oil heater utilizes a Webster combination (gas or oil) burner to transfer heat to the thermal fluid. Air is delivered by a 5 hp fan. The thermal fluid is circulated via a 20 hp pump through specialized turbo coils for maximum heat transfer. Baldor electric motors power pump and fan. Approximate overall dimensions are 6' diameter by 17' length. Vapor recovery system includes Universal Refrigeration chiller, Glycol chiller and condenser, vapor scrubber tank, heat exchanger, blower, dual-vapor phase carbon cells and control panel. Mounted on dual-axle trailers.

What is the capacity?
2-3 tons per hour

What is it used for?
Remediation and recycling of drill cuttings

Where did it go?
Nigeria

40' Indirect Thermal Desorption Unit with Vapor Recovery

Equipment Description:
40' long x 5' ID indirect fired rotary thermal desorption unit with vapor recovery consisting of:
- Quench scrubber system
- Chiller and heat exchanger
- Knock-out pot
- Thermal oxidizer (also used as waste gas burner to supplement main burner to reduce fuel consumption of main unit).
- Oil water separator

Process Description:
The primary thermal desorption unit operates at temperatures of up to 1100°F in an oxygen deficient environment. Cleaned solids are discharged from the system through a water cooled screw auger, and vapors are drawn through the vapor recovery unit where hydrocarbons are condensed and recovered. Lighter, non-condensable hydrocarbons are oxidized, and the heat generated from this process is reused to heat the plant, reducing fuel consumption.

What is the capacity?
5 - 8 tons per hour

What is it used for?
Removing VOCs and hydrocarbons from contaminated waste and soil

Where did it go?
Nigeria
Indirect Heated Rotary Kiln with Vapor Recovery Unit

Equipment Description:

68’ long x 6’ diameter indirect heated kiln with vapor recovery unit consisting of:

- Quench Scrubber system
- Air-Cooled Heat Exchanger
- Shell and Tube Heat Exchanger
- Refrigeration Plant
- Knock-Out Pot
- Oil/Water Separator
- Oxidizers

Process Description:

The indirect fire rotary kiln has four independently controlled heat zones that heat the drum up to 1,200° F in an oxygen deficient environment. Treated, dried materials are discharged to a water-cooled discharge auger. Vapors are drawn through the vapor recovery unit where hydrocarbons are condensed and recovered. The lighter, non-condensable gases are oxidized, and the heat generated from this process is reused to heat the plant, reducing fuel consumption and overall operating cost.

What is it used for?
Removing hydrocarbons or other valuable organics from feed. Can be adjusted to suit specific processes. Ideal for thermal desorption, soil remediation, pyrolysis (tires, charcoal, activated carbon etc.), calcining, or drying projects.