

**Soil-Therm Equipment, Inc. - Thermal Oxidizer with Scrubber System**  
**Model Number – Model 2010-CLR-TR**

The thermal oxidizer system is mounted on a sturdy 22,000# GVWR trailer for transporting the entire system to various locations of operation. The system is designed to operate with minimal attendant operation through a network of safety interlocks such as high temperature shutdown, high post quench scrubber temperature, high and low natural gas pressure, high and low scrubber levels, low water flow, low air pressure from main blower and cooling blower, no flame detection shutdown, and low and high pH levels among other interlocks. DRE >99.99% for benzene, chlorinated VOCs.

Thermal Oxidizer Components:

- Extraction Blower System - consisting of Roots 615 extraction blower with VFD drives, air dilution filter, pneumatic vapor inlet valve, auto dilution motor valve, auto dilution high temperature alarm valve, discharge silencers, pressure and vacuum relief valves, and flame arrestor.
- Chlorinated Oxidizer System - consisting of Soil-Therm Model 2010-CLR burner, Soil-Therm exhaust gas heat exchanger, gas train, cooling air blower, exhaust ducting to quench scrubber.
- Scrubber Assembly - consisting of quench scrubber, scrubber reservoir tank, packed tower scrubber, and associated valves, nozzles, and pump.

The system is constructed of the following durable materials:

Oxidizer Shell - 304SS

Piping – 304SS

Heat Exchanger – 310SS

Pre-Quench section – 310SS

Quench Scrubber – Inco 625

Packed Tower Scrubber and reservoir tank – Al6XN alloy

## Equipment Specification Sheet

### *Thermal Oxidizer System*

Thermal Oxidizer	Model 2010-CR-TR
Oxidation Temperature	1450°-1650°F
Maximum Temperature	1800°F
Capacity	0.25-0.75 sec
Retention Time	10,000 ppmv (25% LEL with heat exchanger)
Maximum Concentration	Rate – 100-1,000 scfm (max @0% LEL)
Waste Gas Characteristics	Heat Content – 0-2,000 ppmv

### *Heat Exchanger Assembly*

Type	Shell & Tube, single pass
Tubes (material)	1" x 0.035" wall
Shell (material)	310SS, 1/8" cylinder
Tube Sheet (material)	310SS, 1/8" thick
Tube Baffles	310SS, 1/16" thick
Performance	Approximately 50% recovery
Operating Range	650-950°F preheated temperature

### *Scrubber Assembly*

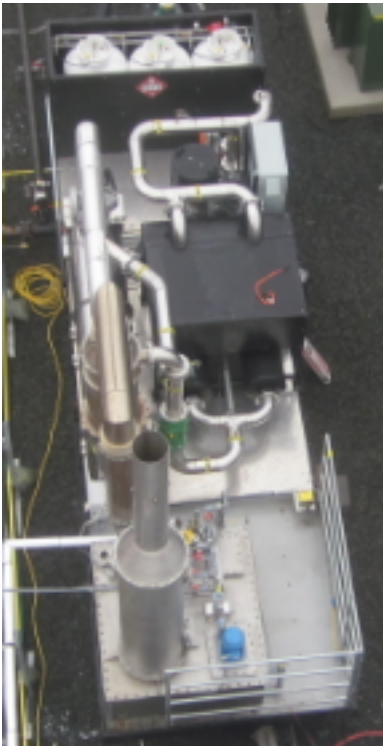
Quench Scrubber	
Type	Venturi-type
Water Flow (max)	0-20 gpm
Construction Material	Inconel 625
Spray Pattern	Two spray injectors (14 and 2 gpm @40 psig)
Tower Scrubber	
Type	Packed Tower
Dimensions	24" O.D. x 5' high
Water Flow (max)	0-20 gpm
Construction Material	Al6XN alloy
Packing Material	5 feet of 3.5" Lantec packing
Demistor Packing	2 feet of NuPac Lantec packing
Removal Efficiency	>99%
Spray Pattern	One spray nozzle (30 gpm @ 40 psig)

### *Utility Requirements*

Propane Gas Supply Line – 5-7 psig, 400-1,000 scfh  
 Electrical Supply – 460VAC, 3-phase, 60 Hz, 100 amps  
 Water Supply – ½", 0-5 gpm water flow at 1-5 psig



View of Control Panel, Enclosed Blowers    View of Heat Exchanger and Scrubber Assembly



Aerial View of Thermal Oxidizer