

**SMAQMD BACT CLEARINGHOUSE**

CATEGORY:

**SOIL REMEDIATION**

BACT Size: SMALL EMITTER (<10 LB/DAY) AND MIN

SOIL THERMAL DESORPTION

<b>BACT Determination Number:</b> 93	<b>BACT Determination Date:</b> 11/21/2014
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**Equipment Information**

**Permit Number:** N/A -- Generic BACT Determination  
**Equipment Description:** SOIL THERMAL DESORPTION  
**Unit Size/Rating/Capacity:** Low-temperature thermal desorption volatilization  
**Equipment Location:**

**BACT Determination Information**

<b>ROCs</b>	<b>Standard:</b>	95% control efficiency
	<b>Technology Description:</b>	Thermal or catalytic oxidizer
	<b>Basis:</b>	Achieved in Practice
<b>NOx</b>	<b>Standard:</b>	
	<b>Technology Description:</b>	Low NOx burner and natural gas/LPG firing
	<b>Basis:</b>	Achieved in Practice
<b>SOx</b>	<b>Standard:</b>	
	<b>Technology Description:</b>	Natural gas or propane fuel and good combustion practices
	<b>Basis:</b>	Achieved in Practice
<b>PM10</b>	<b>Standard:</b>	
	<b>Technology Description:</b>	Fabric filter serving desorber exhaust (99% control efficiency) and soil covered or adequate moisture content such that visible emissions are less than 5% (90% control efficiency)
	<b>Basis:</b>	Achieved in Practice
<b>PM2.5</b>	<b>Standard:</b>	
	<b>Technology Description:</b>	Fabric filter serving desorber exhaust (99% control efficiency) and soil covered or adequate moisture content such that visible emissions are less than 5% (90% control efficiency)
	<b>Basis:</b>	Achieved in Practice
<b>CO</b>	<b>Standard:</b>	
	<b>Technology Description:</b>	Natural gas or propane fuel and good combustion practices
	<b>Basis:</b>	Achieved in Practice
<b>LEAD</b>	<b>Standard:</b>	
	<b>Technology Description:</b>	Natural gas or propane fuel and good combustion practices.
	<b>Basis:</b>	Achieved in Practice

**Comments:** PM10 and PM2.5: Fabric filter serving desorber exhaust (99% control efficiency) and soil covered or adequate moisture content such that visible emissions are less than 5% (90% control efficiency)

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## BEST AVAILABLE CONTROL TECHNOLOGY DETERMINATION

**DETERMINATION NO.:** 93  
**DATE:** November 21, 2014  
**ENGINEER:** Michelle Joe

**Category/General Equip Description:** Soil Remediation  
**Equipment Specific Description:** Soil Thermal Desorption  
**Equipment Size/Rating:** Small Emitter (< 10 lb/day) and Minor Source BACT  
**Previous BACT Det. No.:** None

This BACT determination will create a new BACT determination for Soil Remediation – Soil Thermal Desorption. Thermal desorption (also known as low-temperature thermal volatilization, thermal stripping, and soil roasting) is an ex-situ remediation technology that uses heat to physically separate (volatilize and desorb) petroleum hydrocarbons from excavated soils.

### BACT ANALYSIS

#### Step 1: Identify All Control Technologies

The following control technologies are currently employed as BACT for Soil Remediation – Soil Thermal Desorption by the following BACT Clearinghouses:

BACT Clearinghouse	(A)	Best Available Control Technology (BACT)
SMAQMD	---	<u>For VOC:</u> A BACT standard has not been established.
EPA RBLC	---	<u>For VOC:</u> A BACT standard has not been established.
CARB	---	<u>For VOC:</u> A BACT standard has not been established.
South Coast AQMD	---	<u>For VOC:</u> A BACT standard has not been established.

BACT Clearinghouse	(A)	Best Available Control Technology (BACT)
Bay Area AQMD	---	<u>For VOC:</u> A BACT standard has not been established.
San Joaquin Valley APCD	AP	<u>For VOC:</u> Thermal or catalytic oxidization with 95% control efficiency.
	AP	<u>For NOx:</u> Low NOx burner and natural gas/LPG firing.
	AP	<u>For PM10:</u> Fabric filter serving desorber exhaust (99% control efficiency) and soil covered or adequate moisture content such that visible emissions are less than 5% (90% control efficiency).

(A) AP = Achieved in Practice, TF = Technologically Feasible  
 (B) Emissions limit was not specified because a limit that applies to all equipment within the category is not possible. Refer to discussion (below).

The following control technologies have been identified:

For VOC:  
 Thermal or catalytic oxidization with 95% control efficiency.

For NOx:  
 Low NOx burner and natural gas/LPG firing.

For SOx:  
 Natural gas or propane fuel and good combustion practices.

For PM10:  
 Fabric filter serving desorber exhaust (99% control efficiency) and soil covered or adequate moisture content such that visible emissions are less than 5% (90% control efficiency).

For PM2.5:  
 Fabric filter serving desorber exhaust (99% control efficiency) and soil covered or adequate moisture content such that visible emissions are less than 5% (90% control efficiency).

For CO:  
 Natural gas or propane fuel and good combustion practices.

For Lead:  
 Natural gas or propane fuel and good combustion practices.

**Step 2: Eliminate Technologically Infeasible Options**

All identified technologies are feasible.

**Step 3: Rank Remaining Control Technologies by Control Effectiveness**

The control technologies listed in Step 1 for VOC, NOx, SOx, PM10, PM2.5, CO, and Lead do not have any alternative technologies to rank against.

**Step 4: Select BACT**

BACT for Soil Remediation – Soil Thermal Desorption for the following pollutants are as follows:

For VOC:

Thermal or catalytic oxidization with 95% control efficiency.

For NOx:

Low NOx burner and natural gas/LPG firing.

For SOx:

Natural gas or propane fuel and good combustion practices.

For PM10:

Fabric filter serving desorber exhaust (99% control efficiency) and soil covered or adequate moisture content such that visible emissions are less than 5% (90% control efficiency).

For PM2.5:

Fabric filter serving desorber exhaust (99% control efficiency) and soil covered or adequate moisture content such that visible emissions are less than 5% (90% control efficiency).

For CO:

Natural gas or propane fuel and good combustion practices.

For Lead:

Natural gas or propane fuel and good combustion practices.

REVIEWED BY: Ben & Karl DATE: 12-1-14

APPROVED BY: [Signature] DATE: 12-15-14