

Lousiana

Title 33 ENVIRONMENTAL QUALITY Part III

313. Regulatory Permit for Portable Air Curtain Incinerators

A. Applicability

1. This regulatory permit authorizes the installation and use of portable air curtain incinerators, subject to the requirements established herein, upon notification by the administrative authority that the application (i.e., notification form) submitted in accordance with Subsection E of this Section has been determined to be complete. This regulatory permit also authorizes the engine that drives the fan mechanism and the associated fuel storage tank.
2. This regulatory permit does not apply to an air curtain incinerator that:
 - a. has a manufacturer's rated capacity greater than 10 tons per hour;
 - b. is operated at a commercial/industrial or institutional facility;
 - c. combusts *construction/demolition (C&D) debris* as defined in LAC 33:VII.115;
 - d. incinerates waste, including yard waste, collected from the general public; collected from residential, commercial, institutional, or industrial sources; or otherwise generated at a location other than the operational site; or
 - e. remains at a single operational site (not to include storage locations) for more than 90 consecutive days.

B. Definitions

Air Curtain Incinerator (ACI)—an incinerator that operates by forcefully projecting a curtain of air across an open chamber or pit in which combustion occurs. Incinerators of this type can be constructed above or below ground and with or without refractory walls and floor.

Commercial/Industrial Facility—any facility involved and/or used in the production, manufacture, storage, transportation, distribution, exchange, or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. Such facilities include stores, offices, restaurants, warehouses, and other similar establishments.

Institutional Facility—a facility operated by an organization having a governmental, educational, civic, or religious purpose, such as a school, hospital, prison, military installation, church, or other similar establishment.

Yard Waste—grass, grass clippings, bushes, shrubs, and clippings from bushes and shrubs, originating from residential, commercial/retail, institutional, or industrial sources as part of maintaining yards or other private or public lands.

C. Operating Requirements

1. Visible Emissions

- a. Opacity from the ACI shall not exceed 20 percent, except for a 30-minute start-up period once per day during which opacity shall not exceed 35 percent.
- b. The emission of smoke, suspended particulate matter, or uncombined water, or any air contaminants or combinations thereof, that passes onto or across a public road and creates a traffic hazard by *impairment of visibility*, as defined in LAC 33:III.111, or intensifies an existing traffic hazard condition is prohibited.
- c. The owner or operator shall conduct a 6-minute opacity reading in accordance with Method 9 of 40 CFR 60,

Appendix A, upon request of the department. The Office of Environmental Compliance shall keep results on-site and available for inspection.

2. Approved Wastes

- a. The ACI shall be used to burn only untreated wood, wood refuse, untreated wood products (i.e., crates, pallets, etc.), trees, branches, leaves, grass, and/or other vegetable matter.
- b. The owner or operator shall use only clean oils (e.g., diesel fuel, No. 2 fuel oil, kerosene) to ignite waste.

3. Operating Locations

- a. The owner or operator shall not locate the ACI at any permitted municipal or sanitary landfill.
 - b. The ACI must be situated at least 1,000 feet from any dwelling other than a dwelling or structure located on the property on which the burning is conducted, unless the location has been approved by the appropriate DEQ Regional Office.
 - c. Relocation. The owner or operator shall notify the department prior to moving the ACI to a new operating site. Approval must be obtained before operations at the new site can commence.
4. The owner or operator shall restrict incineration to the time period from 8 a.m. to 5 p.m. each day. Piles of combustible material should be of such size as to allow complete reduction in this time interval.
 5. The owner or operator shall obtain all necessary permits from local and/or state agencies.
 6. The owner or operator shall install on the ACI a manufacturer's nameplate giving the manufacturer's name and the unit's model number and capacity.
 7. The owner or operator shall maintain the ACI to design standards and shall not operate the ACI if any equipment is malfunctioning.
 8. The owner or operator shall use care to minimize the amount of dirt on the material being burned.
 9. Material shall not be added to the ACI in such a manner as to be stacked above the air curtain.
 10. An operator shall remain with the ACI at all times when it is operating.
 11. Operation of the ACI shall be limited to no more than 1,500 hours per calendar year.

Air Curtain Destructor

Operating Guide

The air curtain destructor (ACD) is a forced air pit incinerator, which may be operated at random locations for the purpose of the disposal of waste vegetative debris provided the following requirements are met:

1. All local ordinances and regulations regarding use of an air curtain destructor must be adhered to at all times. This includes checking with the responsible fire department to determine if a fire is authorized.
2. The locations of the ACD must be a least one thousand (1000 feet from any occupied structure. This distance may be increased or decreased on a site- specific basis at the discretion of the EPD or increased by the local fire department.
3. No more than one (1) ACD can be operated within a ten (10) acre area at one time and must be under the control of a trained operator at all times during operation.
4. An ACD with an air duct or manifold the original configuration of which has been altered by bends, dents, holes or some other reason(s) cannot pass an even and non-turbulent flow of air across the top of the pit will not knowingly be authorized by EPD.
5. The ACD must be operated in such a manner to prevent air, land or water pollution, safety/health hazards, or nuisances.
6. Only wood wastes consisting of trees, logs, large brush, stumps relatively free of soil may be burned. Leaves, sawdust, other densely packed wood wastes, paper (any type), chemically treated, coated or impregnated wood, or non-wood construction materials CANNOT be burned, unless specifically stated in an exemption for necessary acts of incineration in unusual situations
7. Under no circumstances will an ACD operator use tires or other rubber products, plastics, heavy oils or asphalt base or impregnated materials to start or maintain an ACD operation.
8. The amount of dirt/soil on or in the material being burned must be minimized.
9. No smoke emissions exceeding forty (40) percent opacity may be produced during operation except for a reasonable period during ignition and charging of the pit.
10. When the pit is cleared of ash, airborne particulate is to be minimized by wetting or mixing the ashes with dirt.
11. No burning is authorized during the night nor on Weekends or holidays, except in unusual situations.
12. Prevailing winds during operation must be away from the major portion of residential population.
13. No burning when there is fog or rain, and usually for at least one (1) day following the passage of a cold front.
14. During an air pollution episode, such as an air pollution alert/warning/emergency declared by proper authorities, the ACD is not to be operated. An air pollution episode occurs when the air contaminant concentration in an area is great enough to cause danger to public health.

Air Curtain Destructor Operating Procedures

1. Site Location and Preparation

Select a site which will likely have a low water table, can be easily excavated and will be no less than 1000 feet from occupied structures.

2. Pit Preparation

Excavate the pit (Figure 2) using either a front-end loader or backhoe. The pit dimensions are 8 feet wide x 12-15 feet deep x 15-30 feet long (the length is dependent upon the length of the ACD manifold). In no case should the 8 feet width be exceeded. The pit must be excavated with at least three (3) vertical sides in soil capable of maintaining vertical walls of 15 feet depth without failure. Additional wall support may be necessary. Caution must be exercised to insure that walls are not undercut during excavations. If a front-end loader is used for the excavation, the end used for travel must be filled in with dirt beginning at the end of the manifold and filling up ramp.

3. Air Curtain Destructor (ACD) Set Up

Using a small berm of soil (1 to 1 ½ feet high) place the Manifold (Plenum and nozzles) such that the manifold is properly supported and the space between the Manifold and ground is sealed (Figures 1 & 2). Rotate the Manifold until the air curtain will be directed at an imaginary horizontal line 24 to 36 inches below the top of the opposite wall. Slide the skid containing the blower and motor into place and connect to Manifold.

4. Ignition Procedures (Refer to Figures 3, 4 and 5)

Load the pit half full with homogeneous mixture of trees, logs and large brush. Douse the wood with ½ gallon of fuel oil putting the majority of the fuel oil on the wood at the front center side of the pit. Ignite the wood at the same point. Allow sufficient time for the fire to take hold before introducing any air from the ACD. As the fire grows in intensity, gradually bring the blower up to optimum speed (generally between 1,100 and 1,400 RPM, depending on the size, type and make of the blower).

CAUTION: Do not use tires or highly volatile solvents such as mineral spirits, gasoline, etc. for ignition.

NOTE: Only clean wood waste may be burned used in the ignition phase of the avian carcasses incineration process. See number Six 6 in the Air Curtain Destructor Operating Guide. Materials necessary for the continued combustion of avian carcasses will be added, as needed, to insure complete combustion in accordance with the exemption permit specifications and possible equipment manufacture guidance

5. Loading Procedure

Once the fire reaches full intensity, successive intermittent charging may begin.

The intervals between charges may be determined by observing the burning rate. Generally, if the fire is kept at its maximum intensity, it will keep one (1) man, operating a front-end loader or clamshell bucket busy constantly. The charges should be alternated between light and heavy material. The material should be charged toward the rear of the pit under the ACD manifold.

The pit should not be overloaded, that is, the material should not be piled up so high that it will protrude above the air curtain. Also, no materials should extend outside the boundaries of the pit and air curtain where sufficient air is not available from the nozzles.

6. Maintenance and Safety Requirements

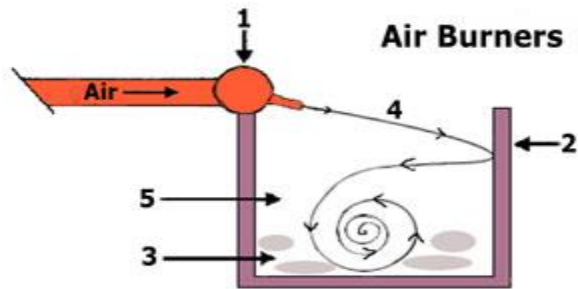
Ash removal is required in order to maintain efficient and proper combustion. Ashes should not be allowed to build up in the pit to higher than $\frac{1}{3}$ the pit depth or to the point where they begin to impede combustion and are blown out of the pit, whichever occurs first.

If spalling, “cave off”, of the pit walls occurs during operation, a new pit must be constructed and the existing pit filled with soil.

Any accumulation of water in the pit must be removed prior to operation.

For reasons of public safety, a fence or barrier surrounding the combustion pit is recommended.

A “stop guide” or restraint must be provided at the loading side of the pit in order to keep the loader from getting too close to the pit during the charging operation.



1. Air curtain burner manifold and nozzles directing high velocity air flow
2. Refractory lined wall for self contained ACD or earthen wall for trench ACD
3. Waste material to be burned
4. Air flow forms a high velocity "curtain" over fire
5. Continued airflow over-oxygenates fire keeping temperatures high and higher temperatures provide cleaner burn and more complete burn.

Air Curtain Manifold and Nozzles



See Diagrams 1- 5 below for Air Curtain Destructor set-up.

Figure 1 - Site Preparation

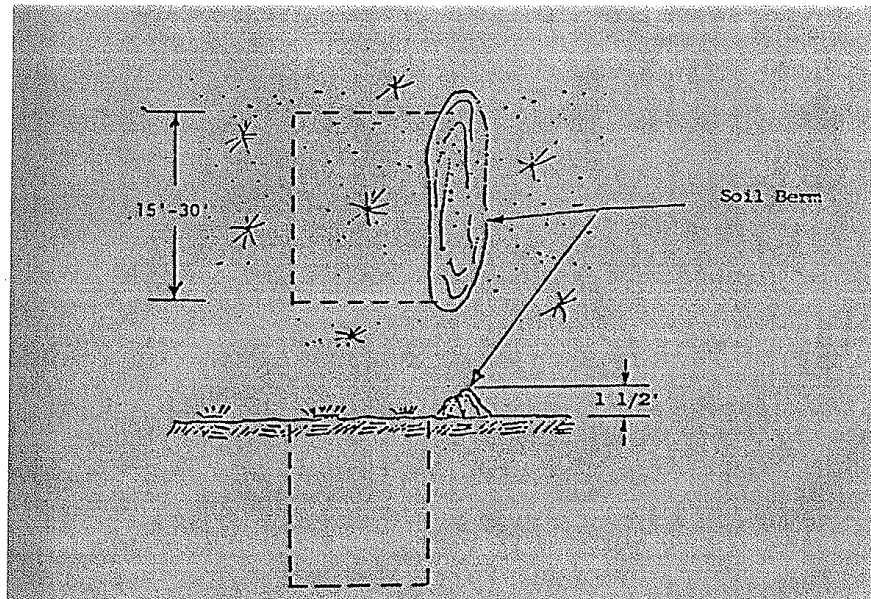


Figure 2 - Air Curtain Destructor (ACD) Set up

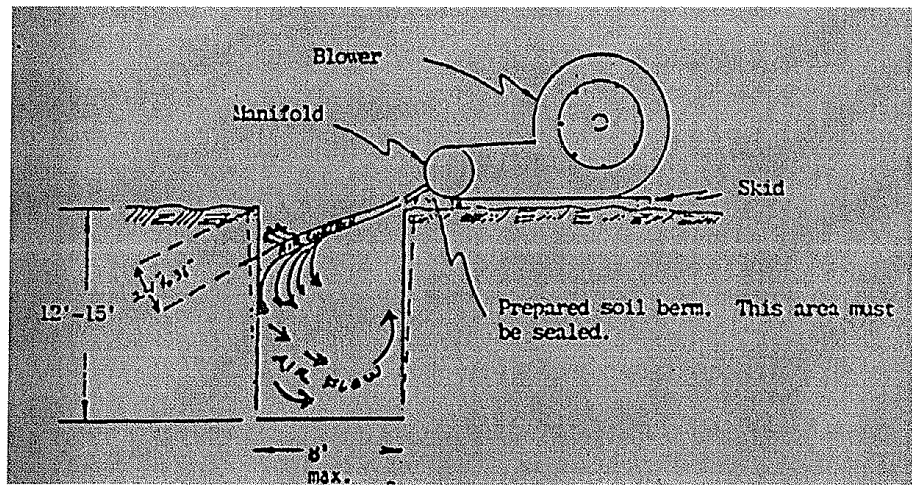


Figure 3 - Cross-section of Pit and ACD

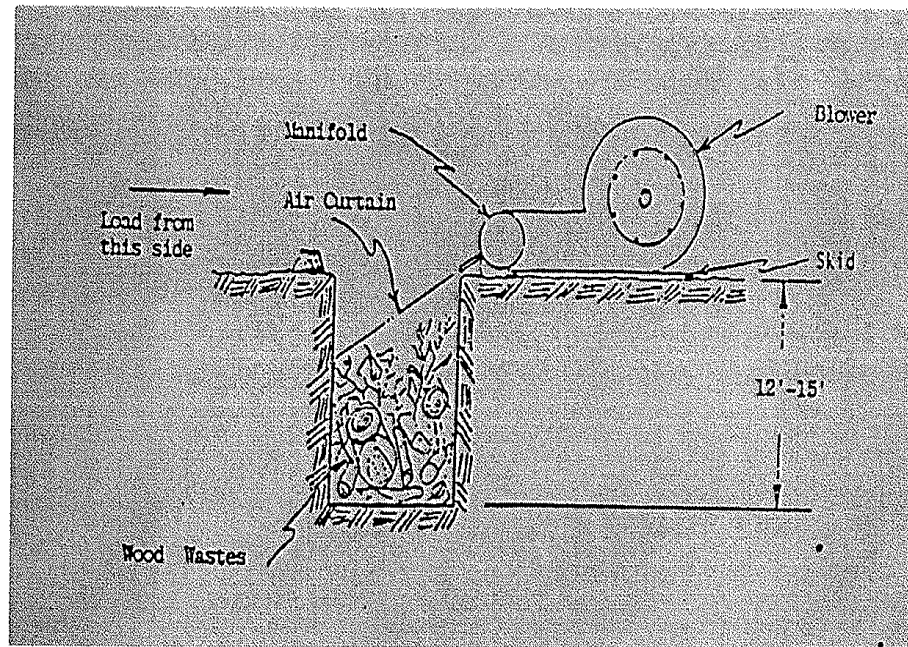


Figure 4 - Profile of Pit and ACD

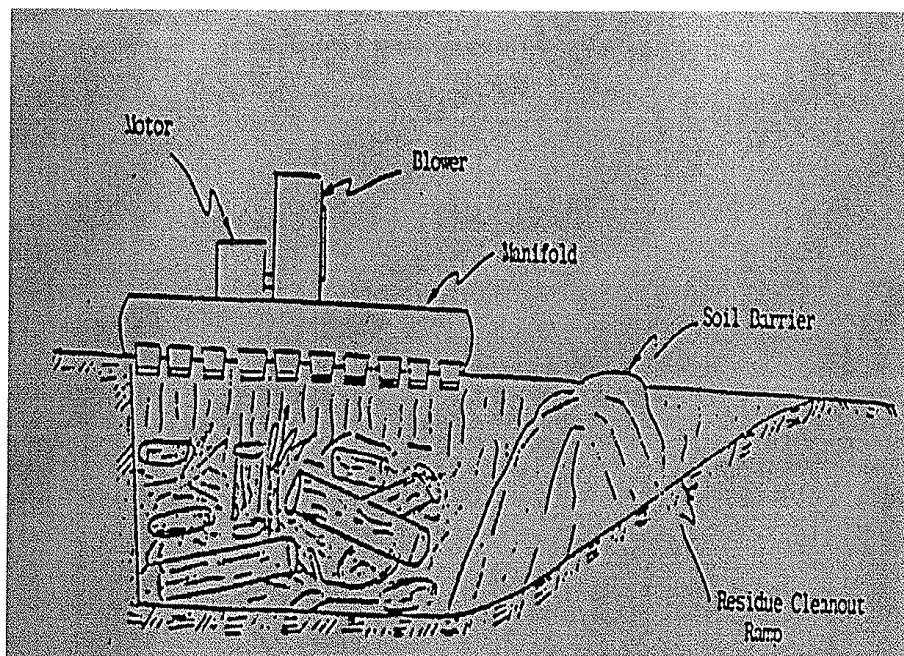
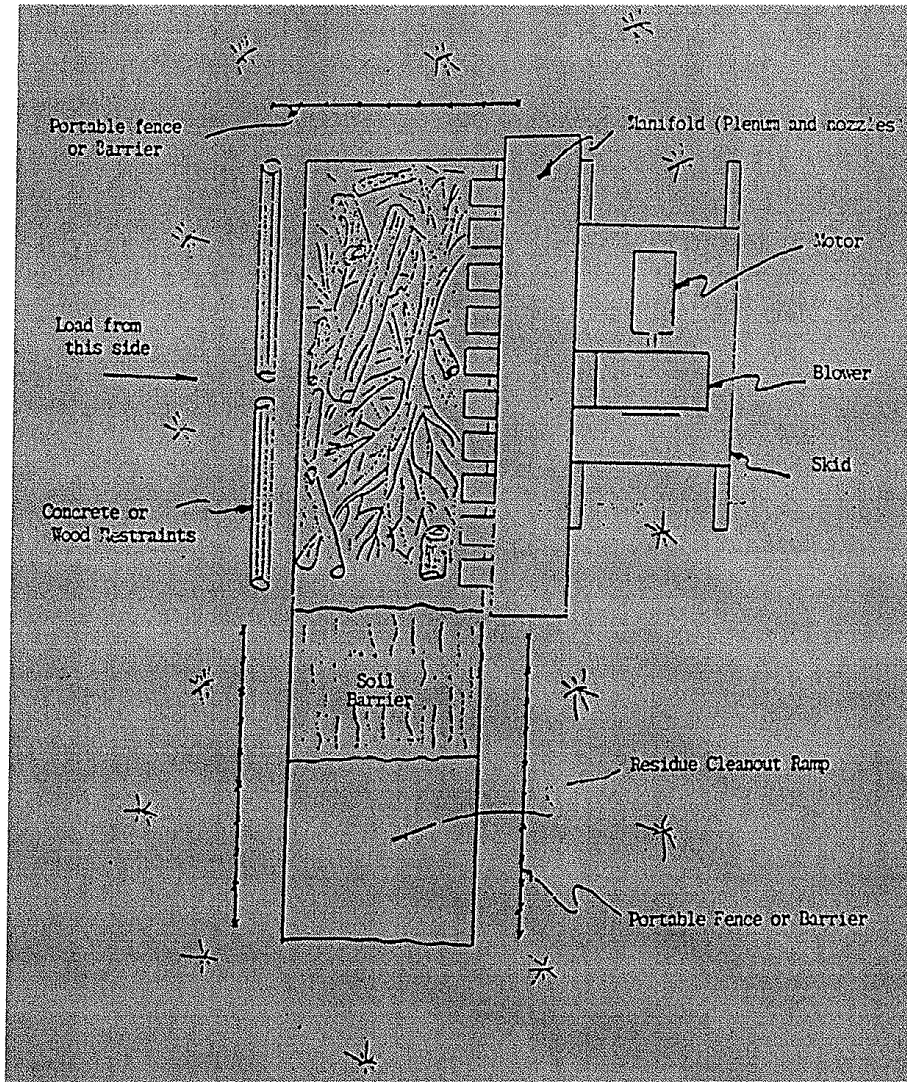


Figure 5 - Plan View of Pit and ACD



Alternatives to Aircurtains:

Devices: Skid mounted ACD in full operation (no visible smoke).



Produces lower smoke emissions compared to pile or broadcast burning.

- Burns a greater variety of materials from green fuel to red slash.
- Reduces fire risk and outbreak of insect problems.
- Operates with fewer restrictions on weather and burn conditions.
- Residents in urban interface areas are more willing to accept ACD use, remove wood waste, and slash fuel hazards around their homes if offered free disposal.
- The fire is contained and easily and quickly extinguished, if necessary.