

SECTION X

**Review of New Sources
and Modifications**

THE PERMIT SYSTEM

SECTION X

REVIEW OF NEW SOURCES AND MODIFICATIONS

Reference Section V, the Texas Clean Air Act, Sections 1.03, 3.27, and 3.28 for authority to prevent construction modification or operation of any stationary source at any location where emissions from such source will prevent the attainment or maintenance of a national standard. Procedures outlined will provide for submission by the owner or operator of a new stationary source or existing source which is to be modified, information which will permit the State to make a determination whether construction or modification will result in violation of applicable portions of the control strategy or will interfere with attainment or maintenance of a national standard. Disapproval procedures for such construction or modification is included. There is no provision which will relieve the owner or operator of his responsibility to comply with applicable portions of the control strategy.

PERMIT SYSTEM PROCEDURES

I. Permit to Construct

A. Applications

1. Application forms for a permit to construct will be provided by the Texas Air Control Board, and may be obtained from a city or county air pollution control program, or the Texas Air Control Board at 8520 Shoal Creek Blvd., Austin, Texas 78758, or from a regional office of the Texas Air Control Board.
2. A complete application for permit to construct will consist of two application forms. The first form will be a general form requesting general information. The second form will be a detailed form requesting engineering data. The second form is designed to apply to specific processes and controls.
3. The forms will consist of an original and three copies. The original and two copies will be used by the Texas Air Control Board. One copy will be retained by the applicant.
4. When a general application form is received by the Texas Air Control Board, the application will be reviewed and additional information will be requested, if needed to complete the review. Any additional information received will become a part of the application.
5. When all the information needed to complete the review is received by the Texas Air Control Board, a copy of the complete application will be sent to the local air pollution control program and the regional office with a request that any comments they may wish to make be received within fifteen (15) days.

B. Review

1. When an application is received, it will be assigned to a Texas Air Control Board engineer for review. Comments from the local and regional control programs will be considered in the review. Conferences with the applicant may be requested when necessary.

2. The review will answer the following questions:
 - a. Will the new facility or modification comply with all rules and regulations of the Texas Air Control Board and with the intent of the Texas Clean Air Act?
 - b. Will the new facility or modification prevent the maintenance or attainment of any ambient air quality standard?
 - c. Will the new facility or modification cause significant deterioration of existing ambient air quality in an area?
 - d. Will the new facility or modification have provisions for measuring the emission of significant air contaminants?
 - e. Will the new facility or modification be located in accordance with proper land use planning?
 - f. Will the new facility or modification utilize the best available control technology with consideration to the technical practicability and economic reasonableness of reducing or eliminating the emissions resulting from the facility?
 - g. Will the design criteria for the new facility or modification achieve the performance specified in the application?
3. Upon completion of the review, the Permits Section will make a recommendation to the Executive Director of the Texas Air Control Board to either grant or deny the permit. The Executive Director of the Texas Air Control Board was authorized by the Board at their meeting on June 23, 1971, to grant or deny permits to construct or operate.

C. Granting or Denying a Permit to Construct

1. If the decision of the Executive Director is to deny the permit, he will report his objection in a written notice of denial to the applicant.
2. The applicant may appeal the denial of the permit to the Texas Air Control Board. If a written appeal is made, a public hearing may be held in the area of the proposed construction. The hearing report will be given to the Board for their consideration.
3. After a review of the pertinent facts, the Board will notify the applicant in writing of their decision.

4. If the decision of the Board is to deny the permit, the Board will not accept any new applications from the applicant until all objections of the Board to the previously submitted application are rectified.
5. If a permit to construct is issued, a copy of the permit will be sent to the local air pollution control agency and the regional office of the Texas Air Control Board.

D. The Permit to Construct

1. A permit to construct will specify certain provisions as follows:
 - a. The permit is non-transferable from person to person or from place to place
 - b. The permit is automatically void if construction is not begun within one year of the date of issuance.
 - c. The permit is automatically void when an operating permit is issued or denied.
 - d. The facility will be constructed as specified in the application for permit to construct.
 - e. Progress reports may be required.
 - f. The permit holder may be required to monitor the emissions of the source upon beginning operation.
 - g. The Texas Air Control Board must be notified in writing at least thirty (30) days prior to the start-up of the facility.
 - h. The Texas Air Control Board must be notified in writing at least thirty (30) days prior to the start of any required monitoring.
 - i. The permit is not a guarantee that the facility will receive an operating permit at the end of the construction period.
 - j. The permit does not absolve a person from the responsibility for the consequences of non-compliance at the end of the construction period.

II. The Permit to Operate

A. Applications

1. Application forms for a permit to operate will be provided by the Texas Air Control Board, and will be sent to an applicant at the time a permit to construct is issued.
2. After construction has been completed and operation of the facility has begun, the applicant has sixty (60) calendar days in which to apply for a permit to operate.
3. The Executive Director may extend the sixty (60) day time period when necessary.
4. The facility may continue to operate under the construction permit until such time as a decision on the application for an operating permit has been made.
5. Inspections by the State, regional and local air pollution control personnel will be made during the period of operation and monitoring.

B. Review

1. When an application for a permit to operate is received by the Texas Air Control Board, a copy will be sent to the local air pollution control program and the regional office of the Texas Air Control Board with a request that any comments they may wish to make be received within ten (10) days.
2. The review will answer the following questions:
 - a. Is the facility complying with the rules and regulations of the Texas Air Control Board and with the intent of the Texas Clean Air Act?
 - b. Has the facility been constructed in accordance with the requirements and conditions contained in the permit to construct?
3. Conferences with the applicant may be requested when necessary.
4. Upon completion of the review the permits section will make a recommendation to the Executive Director of the Texas Air Control Board to either grant or deny the permit. The Executive Director of the Texas Air Control Board was authorized by the Board at their meeting on June 23, 1971, to grant or deny permits to construct or operate.

C. Granting or Denying a Permit to Operate

1. If the decision of the Executive Director is to deny the permit, he will report his objection in a written notice of denial to the applicant.
2. If the permit is denied, the source must cease operation or be subject to the penalties specified in Section 3.28 (f) and Section 4.02 (a) of the Texas Clean Air Act.
3. The applicant may appeal the denial of the permit to the Texas Air Control Board. If a written appeal is made, a public hearing may be held in the area where the source is located. The hearing report will be given to the Board for their consideration.
4. After a review of the pertinent facts, the Board will notify the applicant in writing of their decision.
5. If the decision of the Board is to deny the permit, the Board will not accept any new applications from the applicant until all objections of the Board to the previously submitted application are rectified.
6. If a permit to operate is issued, a copy of the permit will be sent to the local air pollution control agency and the regional office of the Texas Air Control Board.

D. The Permit to Operate

1. A permit to operate will specify certain provisions as follows:
 - a. The rules and regulations of the Texas Air Control Board and the intent of the Texas Clean Air Act must not be violated.
 - b. The permit is non-transferable from person to person or from place to place.
 - c. The permit holder may be required to monitor the emissions of air contaminants from the source on a periodic basis specified in the permit, and provide the data to the Texas Air Control Board or an agent of the Board upon request.

III. Permit Units

"Permit Unit" is the term for that equipment item or grouping of items functioning as a whole, which the Texas Air Control Board will allow to be included in a single application.

- A. A permit unit will include all equipment and appurtenances for the processing of material which are united physically by conveyor, chute, pipe, or hose for the movement of product material provided that no portion or item of the group will operate separately with product material not common to the group operation. Such a grouping is considered as encompassing all the equipment used from the point of initial charging or feed to the point or points of discharge of material where such discharge will (1) be stored, or (2) proceed to a separate process, or (3) be physically separated from the equipment comprising the group.
- B. Storage equipment is any tank, bin, vat, vessel or other device employed to receive and hold any material for future use. A storage vessel can be included with the permit unit from which it receives material if the material is received from only one source permit unit and physically united to the source permit unit by conveyor, chute, pipe, or hose. The storage vessel will be considered a separate permit unit if the material is received from more than one source permit unit or is not united physically to the source permit unit. Any container used to store liquid or gases is an individual permit unit.
- C. Spare or standby equipment which is a separate permit unit requires a separate permit regardless of how infrequent it may be used. Spare or standby equipment which is not a separate permit unit in itself does not require a separate permit.
- D. Any heating equipment using exclusively natural gas or LP gas will be considered as a part of the permit unit it serves. Any heating equipment capable of utilizing a fuel other than natural gas or LP gas, and where the products of combustion do not intermingle with the product will be considered as a separate permit unit.
- E. Equipment which operates as a part of more than one permit unit, either alternately or simultaneously, is a part of each permit unit with which it is associated.
- F. Air pollution control equipment will be considered as part of the permit unit it serves unless it is a system manufacturing a salable product different from the material being collected.
- G. Permit unit examples are as follows:
 - 1. Each separate blasting booth, cabinet, rotary table, tumbler or room together with associated abrasive supply and handling equipment in abrasive cleaning or peening operations.
 - 2. Each blown asphalt production unit, starting with charge pumps and ending at the point of discharge to storage.

3. Each asphaltic concrete batching plant, starting with the aggregate feed and ending with the batched product for which the system is designed.
4. Each boiler consisting of shell, furnace or heater firebox, chimney or stack, flues, and breeching, burners, superheater, heaters, oil preheaters, economizers, pumps, fans, soot blowers, gauges, controls, fittings, appurtenances, and air pollution control systems.
5. Each bulk liquid or gaseous transferring system, starting at the outlet of any storage vessel, vehicle or ship from which the bulk liquid or gaseous material is being transferred, and ending at the point of discharge into other storage vessels, vehicles, or ships.
6. Each bulk solid material transferring and storage system, starting with the hopper which receives the solid material from any vehicle, ship, or storage container and ending with the receiving storage container or at the point of discharge into other vehicles, ships, or processing equipment.
7. Each catalytic cracking system, starting with the reduced crude charge stream and ending with the reactor liquid and gas discharge streams.
8. Each catalytic reforming system, starting with the naptha charge and ending with the stabilized reformate and gas streams.
9. Each chemical manufacturing system, starting with the initial raw material unit charge and ending with the product streams the permit unit is designed to produce.
10. Each cement receiving and storage system, starting with the receiving hopper and ending with and including the storage silos.
11. Each concrete batching plant, starting with rock and sand conveyor from storage bins or rock and sand receiving hopper and ending with truck loading.
12. Each cooker, digester or fryer consisting of a single or double shell, heaters or burner assemblies or other heating devices, agitators, motors, condensers, pumps, other appurtenances, and air pollution control systems.
13. Each crude oil processing unit, starting with the crude oil charge and ending with gas.

14. Each furnace or oven consisting of shell, refractory, burner assemblies, combustion chamber, recirculating fan, motor, regenerator, recuperator, charging devices, tilting, rocking, discharging, or tapping devices, and air pollution control systems.
15. Each dryer or kiln consisting of shell and refractory, heaters, or burner assemblies, motors, fans, pumps, material handling equipment, classifying equipment, and air pollution control systems.
16. Each galvanizing tank or kettle, including burner assembly and air pollution control system.
17. Each garnetting system, starting with the breaker and ending with the batting cutter.
18. Each gas conversion unit, starting with the charge streams and ending with the product stream or streams for which the system is designed.
19. Each light hydrocarbon recovery system, starting with the charge stream and ending with the product stream for which the system is designed.
20. Each incinerator, including a primary combustion chamber, mixing chamber, secondary combustion chamber, stack, induced mechanism, and air pollution control systems.
21. Each dehydration system including but not limited to. columns or towers, natural gas fired reboiler, exchangers, separators, tanks, filters, pumps, and natural gas fired heaters.
22. Each odorizer unit, consisting of but not limited to, tanks, columns, towers and pumps.
23. Each natural gasoline plant, consisting of but not limited to, towers, columns, exchanger, coolers, tanks, scrubbers, process tanks, compressors, pumps, vent stacks, separators, oil purifiers, driers, and heaters.
24. Each compression unit, consisting of but not limited to, compressors, coolers, scrubbers, and pumps.
25. Each petrochemical processing unit, starting with the charge stream and ending with the product streams for which the system is designed.
26. Each petroleum product treating unit, starting with the charge stream and ending with the product streams for which the system was designed.

27. Each plating or chemical milling unit, including its heating device, current supply equipment, and air pollution control systems.
28. Each raw material processing system in a rendering plant, starting with the receiving room or hogger and ending at the points of discharge to the cookers.
29. Each rendered product system, starting with the discharge from the cookers and ending with tank storage.
30. Each rock crushing or sizing system.
31. Each size reduction system, starting with the discharge from the feed from storage or with the charging hopper or grizzly, and ending with storage.
32. Each solid material processing system, starting with the discharge of the feed from storage or with the charging hopper and ending with storage.
33. Each degreasing tank, consisting of but not limited to, integral still, burner assemblies, or electric heating device, sonic generator, pumps, vapor region, condensing ring, spray attachment, and air pollution control systems.
34. Each spray drier system, starting with slurry pumping equipment and ending with storage.
35. Each surface coating device, consisting of but not limited to, frame, bed, platen, cylinders, rollers, troughs, fountains, belts, power transmission devices, motors, pumps, and air pollution control systems.
36. Each thermal conversion system, starting with the straight run residuum or heavy crude charge and ending with gasoline, kerosene, or fuel oil.

TEXAS AIR CONTROL BOARD
INSTRUCTIONS FOR PERMIT APPLICATIONS

Sections 3.27 and 3.28 of the Texas Clean Air Act provide that any person who plans to construct or to modify a facility which may emit contaminants into the atmosphere shall obtain construction and operating permits. Procedures for obtaining these permits have been delineated by the Texas Air Control Board.

Guidelines for determining if a facility will comply with the intent of the Clean Air Act are the General Rules and Regulations adopted by the Texas Air Control Board. However, for some operations, the Federal Environmental Protection Agency performance standards and available proven technology are applicable. Performance standards for new and substantially modified sources may be more restrictive than the standards for existing sources.

The principal objective of the Permits Section is to evaluate the expected performance of the proposed construction for compliance with all applicable Air Pollution Control Rules and Regulations, with performance standards based on available proven technology, and with ambient air standards for all air contaminants. Particular attention must be directed to quantifying the emission(s) from the proposed facility via material balances and/or other methods. This is of primary importance in the evaluation of the proposed facility.

Various forms are used to provide pertinent data about the type of operation, contaminants emitted and material balances applicable to the contaminants. Special attention should be directed to providing adequate information for the evaluations; otherwise, time may be lost due to repeated correspondence.

Definitions:

1. "Permit Unit" means an equipment item or grouping of items functioning as a whole, which the Texas Air Control Board will allow to be included in a single application. A permit unit will include all equipment which are united physically, e.g. by conveyor, chute, pipe or hose, for the movement of product material provided that no portion or item of the group will operate separately with product material not common to the group operation.
2. "Source" means a point of origin of air contaminants, whether privately or publicly owned or operated.

FORM PI-1 GENERAL APPLICATION
GENERAL INSTRUCTIONS

1. Complete four copies of the application; retain the fourth copy, and send application, maps, and drawings, in triplicate, to: TEXAS AIR CONTROL BOARD, ATTENTION Executive Director, 8520 Shoal Creek Blvd., Austin, Texas, 78758. Attach additional sheets in triplicate if more space is needed to submit information. Please include all pertinent information.
2. Separate application must be made for each permit unit that is a potential source of air contamination, such as an incinerator, kiln, or sulfuric acid plant. Applicant may be required to submit additional information on forms which will be provided as necessary; these forms become a part of the application.
3. All confidential processes or operations must be indicated in a separate letter of explanation.
4. Incomplete applications will not be processed. Review of applications and issuance of permits will be expedited by supplying all necessary information with initial application forms.

SPECIFIC ITEM INSTRUCTIONS FOR FORM PI-1

- Item I** List the legal name which will appear on the permit.
- Item II** List the name of the plant or facility where the permit unit is located. List the street address and city of the plant, if available, or give the nearest city or town. Give the latitude and longitude of the permit unit to the nearest 15 seconds.
- Item IIIA** Give the name of the general type of operation, or manufacturing process, or equipment of the permit units, such as sulfuric acid plant, incinerator, cupola, electric furnace, boiler, etc.
- Item VIII** Application for authority to construct must be made by the owner or operator of the facility. If the applicant is a partnership or group other than a corporation, the application must be made by an individual who is a member of the group. If the applicant is a corporation, the application must be made by an agent authorized to act for the corporation.

TEXAS AIR CONTROL BOARD
FORM PI-1, GENERAL APPLICATION
(Read Instructions Before Completing)

I. PERMIT TO BE ISSUED TO: _____
(Corporation, Company, Government Agency, Firm, etc.)

Mailing address: _____

Individual authorized to act for applicant: Name: _____ Title: _____

Address: _____ Telephone: _____

II. LOCATION OF PERMIT UNITS (Latitude and Longitude must be to the nearest 15 seconds):

Name of plant or site: _____ Street address (if available): _____

Nearest city: _____ County: _____ Latitude: _____ Longitude: _____

III. TYPE OF OPERATION OR PROCESS OF PERMIT UNIT:

A. Name of operation or process of permit unit: _____

B. Permit unit identification number: _____

C. Type (Check one): Permanent Portable

D. Operating schedule: Hours/day _____ Days/week _____ Weeks/year _____

IV. PERMIT UNIT CLASSIFICATION (Check applicable blocks):

A. New Permit Unit: Proposed start of construction _____ Start of operation _____
(Date) (Date)

B. Modification of Permit Unit

C. Change in Location

D. Change in Ownership

E. Permit Unit Now Operating Under Permit Number _____

V. If Items IV. A, B, or C were checked, submit the following information under either A or B:

- A. Data requested in B1, B2 and B3 has been previously submitted under Permit No. _____
- B.1 Submit three copies of an area map to approximate scale showing the location of the property, the land use designations for adjacent and nearby lands which may be affected by the emissions, geographical features such as highways, roads, streams and significant landmarks, distance to the center of nearest city or town if located outside an incorporated municipality. If the property is located within a town or city, a city map may be used to present this information, and if outside a town or city, a county highway map may be used. County highway maps may be ordered either through the Texas Highway Department, Austin, Texas, or through the State District Highway Engineer for the county.
- B.2 Give a legal description of the tract of land upon which the plant or facility is located. The term "legal description" means either a metes and bounds description, or the block and lot number of a platted subdivision which would be suitable to effectuate the transfer of title to real property.
- B.3 Submit a plot plan of the property, to scale, showing the boundaries, the location of all sources of any air contaminants on the property, the distance from each source to the nearest boundary line, prevailing wind direction, true north direction, a scale and any other information deemed relevant by the applicant. Identify the sources by numbers; use the same numbers for those sources in this permit that will be assigned in the flow diagram.

VI. If Item IV.E is not checked, submit the following information:

- A. Process Flow Diagram. Prepare and attach a flow diagram identifying significant individual processes and/or operations. Identify (by number) points where raw materials, chemicals, and fuels are introduced, where gaseous emissions and/or airborne particulates may be discharged including intermediate releases where finished products are obtained, and location of pollution control devices.
- B. Description of Process. Prepare and attach a written description of each process and of the function of the equipment in the process. (Identify items of equipment by numbers corresponding to flow diagram numbers.) The description must be in sufficient detail to determine the general operation of the process. Particular attention must be given to explaining all stages in the process where there is or may be a discharge of any solid, liquid, or gaseous material(s) into the atmosphere. Estimate number and type of air pollution abatement devices to be used such as 1 electrostatic precipitator, 2 cyclones, 1 incinerator, 2 baghouses, etc.

VII. Has local Air Pollution Control Program been contacted? Yes No No active local program in the city or county.

VIII. I, _____ (Name) _____ (Title)

state that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Clean Air Act, Article 4477-5, Vernon's Texas Civil Statutes, as amended, or any of the rules and regulations of the Texas Air Control Board or any local governmental ordinance or resolution enacted pursuant to the Texas Clean Air Act.

DATE _____ SIGNATURE _____



TEXAS AIR CONTROL BOARD

8520 Shoal Creek Blvd.
Austin, Texas 78758

CHARLES R. BARDEN, P. E.
Executive Director

Dear Sir:

This will acknowledge receipt of your general Application for Permit to Construct or Modify a Facility, Form PI-1. After evaluation of your initial application, we have determined that additional information is necessary before a Construction Permit may be issued. Please supply all information as requested on the attached Supplemental Application, Form PI-2. (Since all parts of Supplemental Application, Form PI-2, are not required for every situation, only those sheets believed applicable to your application are enclosed. Additional sheets are available upon request.) Complete and return in accordance with general instructions, Form PI-1.

Yours very truly,

Permits Program
Texas Air Control Board

ATTACHMENT INDEX

NUMBER	TITLE
Form PI-2	Supplemental Application
Table 1	Emission Sources
Table 2	Material Balance
Table 3	Air Pollution Abatement Equipment Data
Table 4	Combustion Units
Table 5	Solid Waste Incineration
Table 6	Boilers and Heaters
Table 7	Storage Tank Summary
Table 8	Flare Systems
Table 9	Particle Size Distribution
Table 10	Cyclone Separators
Table 11	Fabric Filters
Table 12	Electrostatic Precipitators
Table 13	Scrubbers or Wet Washers
Table 14	Absorbers
Table 15	Adsorbers
Table 16	Simplified Data Sheet for Particulate Dust Collector
	Other Information

**TEXAS AIR CONTROL BOARD
FORM PI-2, SUPPLEMENTAL APPLICATION**

This application and all attachments to be submitted in triplicate. Incomplete applications will not be processed. Review of applications and issuance of permits will be accomplished sooner if all necessary information is supplied with the initial application forms.

A. PERMIT TO BE ISSUED TO: _____
(Corporation, Company, Government Agency, Firm, etc.)

Mailing address: _____

Individual authorized to act for applicant: Name: _____ Title: _____

Address: _____ Telephone: _____

B. LOCATION OF PERMIT UNIT:
Nearest city: _____ County: _____

C. TYPE OF OPERATION OR PROCESS OF PERMIT UNIT:
Name of operation or process of permit unit: _____
Permit unit identification number: _____

D. PERMIT UNIT SCHEDULE:
Construction expected to begin: _____
(Date)
Operation expected to begin: _____
(Date)

E. PROVIDE THE REQUESTED INFORMATION LISTED ON THE ATTACHED TABLE(S).

F. I, _____
(Name) (Title)

state that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief. I further state that to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Clean Air Act, Article 4477-5, Vernon's Texas Civil Statutes, as amended, or any of the rules and regulations of the Texas Air Control Board or any local governmental ordinance or resolution enacted pursuant to the Texas Clean Air Act.

DATE _____ SIGNATURE _____

TABLE 1
EMISSION SOURCES

List all sources, including this application, of air contaminants on applicant's property. If applicant has submitted this information in an earlier emission inventory, it will not be necessary to duplicate the requested information. Instead, indicate that this page has been submitted and list only changes from the emission inventory and list new source data.

ALL SOURCES		STACKS ONLY					
SOURCE NUMBER (From Plot) Plan	LIST POLLUTANT EMISSIONS (CHEMICAL COMPOSITION) & WT. % OF EACH	FLOW RATE OF EACH LISTED EMISSION	STACK HEIGHT ABOVE GROUND (ft.)	STACK INTERNAL DIAMETER AT EXIT (ft.)	TEMP. DEG. (F)	VELOCITY (FT/SEC)	MOIS. %
		GASEOUS PARTICULATE					

ENCLOSE THE FOLLOWING AVAILABLE INFORMATION:

1. EMISSIONS OTHER THAN THROUGH STACKS (HORIZONTAL VENTS, ETC.)
2. STACK'S HEIGHT ABOVE SUPPORTING OR ADJACENT STRUCTURES.
3. DIMENSIONS OF NON-CIRCULAR STACKS.
4. RESULTS OF TESTS INDICATING AVERAGE PARTICLE SIZE, DENSITY, ETC.

TABLE 2
MATERIAL BALANCE

This material balance table is used to quantify possible emissions of air contaminants and special emphasis should be placed on potential air contaminants, for example: If feed contains sulfur, show distribution to all products. Please relate each material (or group of materials) listed to its respective location in the process flow diagram by assigning point numbers (taken from the flow diagram) to each material.

LIST EVERY MATERIAL INVOLVED IN EACH OF THE FOLLOWING GROUPS	Point No. from Flow Diagram	Process Rate (lbs/hr or SCFM) standard conditions: 70°F 14.7 PSIA. Check appropriate column at right for each process.	Measurement	Estimation	Calculation
1. Raw Materials - Input					
2. Fuels - Input					
3. Products & By-Products - Output					
4. Solid Wastes - Output					
5. Liquid Wastes - Output					
6. Airborne Waste (Solid) - Output					
7. Airborne Wastes (Gaseous) - Output					

TABLE 3
 AIR POLLUTION ABATEMENT EQUIPMENT DATA
 (Complete one table for each abatement device)

POINT NUMBER (from Flow Diagram)	NAME OF ABATEMENT DEVICE OR METHOD	MANUFACTURER AND MODEL NUMBER	TYPE OF AIR CONTAMINANT CONTROLLED	
			PARTICULATE - PARTICLE SIZE (MICRONS)	
DESIGN COLLECTION EFFICIENCY (%)	GASES	0.0-0.5	0.5-1.0	1.0-5.0
				5-10
				10-20
LOCATION	CHARACTERISTIC OF EFFLUENT			
	TEMPERATURE DEGREES F	STATIC PRESSURE PSIG	FLOW RATE CFM	CONCENTRATION (Indicate Units)
INLET				
EXIT				

ABATEMENT DEVICE DATA INSTRUCTIONS

Attach separate sheets as necessary providing a description of the air pollution abatement device(s) or treatment including details regarding principles of operation, size, type, capacity, and the basis for calculating its efficiency.

Supply an assembly drawing, dimensioned and to scale, in plan, elevation, and as many sections as are needed to show clearly the design and operation of the equipment and the means by which air contaminants are controlled. If these data are not yet defined, then furnish duty specification or process design specification data.

TABLE 4

COMBUSTION UNITS

OPERATIONAL DATA				
Number from flow diagram:		Model Number (if available):		
Name of device:		Manufacturer:		
CHARACTERISTICS OF INPUT				
Waste Material*	Chemical Composition			
	Material	Min. Value Expected lb/hr	Ave. Value Expected lb/hr	Design Maximum lb/hr
	1.			
	2.			
	3.			
	4.			
5.				
Gross Heating Value of Waste Material (Wet basis if applicable)	Btu/lb	Air Supplied for Waste Material	Minimum SCFM (70°F & 14.7 psia)	Maximum SCFM (70°F & 14.7 psia)
Waste Material or Contaminated Gas	Total Flow Rate lb/hr		Inlet Temperature °F	
	Minimum Expected	Design Maximum	Minimum Expected	Design Maximum
Fuel	Chemical Composition			
	Material	Min. Value Expected lb/hr	Ave. Value Expected lb/hr	Design Maximum lb/hr
	1.			
	2.			
	3.			
4.				
Gross Heating Value of Fuel	Btu/lb	Air Supplied for Waste Material	Minimum SCFM (70°F & 14.7 psia)	Maximum SCFM (70°F & 14.7 psia)

*Describe how waste material is introduced into combustion unit on an attached sheet. Supply drawings, dimensioned and to scale to show clearly the design and operation of the unit.

**TABLE 4
(continued)
COMBUSTION UNITS**

CHARACTERISTICS OF OUTPUT				
Flue Gas Released	Chemical Composition			
	Material	Min. Value Expected lb/hr	Ave. Value Expected lb/hr	Design Maximum lb/hr
	1.			
	2.			
	3.			
	4.			
5.				
Temperature at Stack Exit of	Total Flow Rate lb/hr		Velocity at Stack Exit ft/sec	
	Minimum Expected	Maximum Expected	Minimum Expected	Maximum Expected
COMBUSTION UNIT CHARACTERISTICS				
Chamber Volume from Drawing ft ³	Chamber Velocity at Average Chamber Temperature ft/sec		Average Chamber Temperature of	
Average Residence Time sec	Exhaust Stack Height ft		Exhaust Stack Diameter ft	
ADDITIONAL INFORMATION FOR CATALYTIC COMBUSTION UNITS				
Number and Type of Catalyst Elements	Catalytic Bed Velocity ft/sec		Max. Flow Rate per Catalytic Unit (Manufacturer's Specifications) Specify Units	

Attach separate sheets as necessary providing a description of the combustion unit, including details regarding principle of operation and the basis for calculating its efficiency. Supply an assembly drawing, dimensioned and to scale, to show clearly the design and operation of the equipment. If the device has bypasses, safety valves, etc., specify when such bypasses are to be used and under what conditions. Submit explanations on controls for temperature, air flow rates, fuel rates, and other operating variables.

TABLE 5
SOLID WASTE INCINERATION
OPERATIONAL DATA

(Submit three copies for each incinerator)

Type Incinerator		Manufacturer	
Model Number		Capacity (lb/hr)	No. from flow Diagram
ANALYSIS OF FUEL			
Type:	Sulfur Content (%by weight):	Ash Content (% by weight):	
Total fuel Rate (lb/hr or scfh)*			
Primary Burner Fuel Rate (lb/hr or scfh)*		Secondary Burner Fuel Rate (lb/hr or scfh)*	
ANALYSIS OF REFUSE			
Type of Refuse:	Burning rate (lb/hr):	Gross heating value:	
Moisture Content (% of refuse):		Dry Combustible (% of refuse):	
OPERATING CHARACTERISTICS OF INCINERATOR			
1.	Primary Chamber	Secondary Chamber	
Gas Velocity (ft/sec):			
Volume (from drawing) (ft ³):			
Temperature (°F):			
ITEM	UNITS		
2. Air Requirements	**		
3. Combustion Air Distribution			
a. Primary air through charging door leakage, expansion joints.	% of 2 or scfm*		
b. Over fire ports	% of 2 or scfm*		
c. Under fire ports	% of 2 or scfm*		
d. Secondary chamber ports	% of 2 or scfm*		
4. Area of Port Openings			
a. Over fire ports	in ²		
b. Under fire ports	in ²		
c. Secondary chamber ports	in ²		
5. Grate loading	lbs/ft ² -hr		
6. Grate Area	ft ²		
7. Primary Air Induction Draft	inches water guage		
8. Stack Draft	inches water guage		
9. Stack Velocity at Exit	ft/sec		
10. Stack Diameter	ft		
11. Stack Height	ft		
12. Stack Temperature	°F		
13. Attach an explanation on how temperature, air flow rate, excess air or other operating variables are controlled.			

* Standard Conditions: 70°F 14.7 PSIA

** Total Air (theoretical and excess) or total scfm

Also supply an assembly drawing, dimensioned and to scale, in plan, elevation, and as many sections as are needed to show clearly the operation of the incinerator. Show interior dimensions and features of the equipment necessary to calculate its performance.

TABLE 6
BOILERS AND HEATERS

Type of Device:		Manufacturer:				
Number from flow diagram:		Model Number:				
CHARACTERISTICS OF INPUT						
Type Fuel	Chemical Composition (% by Weight)	Inlet Air Temp °F (after preheat)	Fuel Flow Rate (scfm* or lb/hr)			
			Average	Design Maximum		
		Total air supplied (scfm*)	Gross Heating Value of Fuel (specify units)			
HEAT TRANSFER MEDIUM						
Type Transfer Medium (Water, oil, etc.)	Temperature °F		Pressure (psia)		Flow Rate (specify units)	
	Input	Output	Input	Output	Ave.	Design Max.
OPERATING CHARACTERISTICS						
Ave. Fire Box Temp. at max. firing rate	Fire Box Volume (ft.³), (from drawing)		Gas Velocity in Fire Box (ft/sec) at max firing rate		Residence Time in Fire Box at max firing rate (sec)	
STACK PARAMETERS						
Stack Diameters	Stack Height	Stack Gas Velocity (ft/sec)		Stack Gas Temp (°F)		
		(@Ave. Fuel Flow Rate)	(@Max. Fuel Flow Rate)			
CHARACTERISTICS OF OUTPUT						
Material	Chemical Composition of Exit Gas Released (% by Volume)					
Attach an explanation on how temperature, air flow rate, excess air or other operating variables are controlled.						

Also supply an assembly drawing, dimensioned and to scale, in plan, elevation, and as many sections as are needed to show clearly the operation of the combustion unit. Show interior dimensions and features of the equipment necessary to calculate its performance.

* Standard Conditions: 70°F, 14.7 psia

TABLE 8
FLARE SYSTEMS

Number from Flow Diagram			Manufacturer & Model No. (if available)			
CHARACTERISTICS OF INPUT						
Waste Gas Stream	Material	Min. Value Expected (scfm [70°F, 14.7 psia])		Ave. Value Expected (scfm [70°F, 14.7 psia])		Design Max. (scfm [70°F, 14.7 psia])
	1.					
	2.					
	3.					
	4.					
	5.					
	6.					
	7.					
	8.					
		Flow Rate (scfm [70°F, 14.7 psia])		Temp. °F	Pressure (psig)	
		Minimum Expected	Design Maximum			
Waste Gas Stream						
Fuel Added to Gas Stream						
		Number of Pilots	Type Fuel	Fuel Flow Rate (scfm [70°F & 14.7 psia]) per pilot		
For Steam Injection	Steam Pressure (psig)		Total Steam Flow		Temp. °F	Velocity (ft/sec)
	Min. Expected	Design Max.	Rate (lb/hr)			
	Number of Jet Streams		Diameter of Steam Jets (inches)		Design basis for steam injected (lb steam/lb hydrocarbon)	
For Water Injection	Water Pressure (psig)		Total Water Flow Rate (gpm)		No. of Water Jets	Diameter of Water Jets (inches)
	Min. Expected	Design Max.	Min. Expected	Design Max.		
Flare Height (ft)			Flare tip inside diameter (ft)			

Supply an assembly drawing, dimensioned and to scale, to show clearly the operation of the flare system. Show interior dimensions and features of the equipment necessary to calculate its performance. Also describe the type of ignition system and its method of operation. Provide an explanation of the control system for steam flow rate and other operating variables.

TABLE 9

PARTICLE SIZE DISTRIBUTION*

PARTICLE SIZE RANGE	0.0-0.5 MICRONS	0.5-1.0 MICRONS	1.0-5.0 MICRONS	5-10 MICRONS	10-20 MICRONS	20 MICRONS	AVERAGE SIZE (MICRONS)	AVERAGE DENSITY (g/cc)
CONTAMINANT**								
(Example) SILICA DUST--POINT	10%	20%	15%	20%	20%	15%	8.1	2.6

(Note that total above equals 100%)

* Entering control device
 ** Identify contaminant by name and flow diagram point number.
 Distribution to be in percent by weight of total contaminant.

**TABLE 10
CYCLONE SEPARATORS**

Point Number (from Flow Diagram)		Manufacturer & Model No. (if available)		
Name of Abatement Device		Type of Particulate Controlled		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)		Particulate Grain Loading (grain/scf)
Design Maximum	Average Expected			Inlet
				Outlet
PARTICULATE DISTRIBUTION (By Weight)				
Micron Range	Inlet		Outlet	
• 0.0-1.0	_____ %		_____ %	
1.0-3.0	_____ %		_____ %	
3.0-5.0	_____ %		_____ %	
5-10	_____ %		_____ %	
10-20	_____ %		_____ %	
over 20	_____ %		_____ %	
CYCLONE CHARACTERISTICS				
Type of Cyclone (check appropriate boxes):				
<input type="checkbox"/> wet	<input type="checkbox"/> single	<input type="checkbox"/> quadruple		
<input type="checkbox"/> dry	<input type="checkbox"/> dual	<input type="checkbox"/> multiclone		
Give Dimensions of Cyclone (See sample sketch):				
1. B _____ in.	5. Z _____ in.			
2. H _____ in.	6. D _____ in.			
3. S _____ in.	7. A _____ in.			
4. L _____ in.	8. J _____ in.			
Method of Removal of Particulate from Cyclone: _____				

Pressure drop through cyclone (inches water) _____				
ADDITIONAL INFORMATION				

On separate sheets attach the following:

A. Details regarding principle of operation

B. An assembly drawing (Front and Top View) of the abatement device dimensioned and to scale clearly showing the design, size and shape.

If the device has bypasses, safety valves, etc., include in drawing and specify when such bypasses are to be used and under what conditions.

**TABLE II
FABRIC FILTERS**

Point Number (from Flow Diagram)		Manufacturer & Model No. (if available)		
Name of Abatement Device		Type of Particulate Controlled		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
Pressure Drop (in. H ₂ O)		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp) (ft ³ /min)	
PARTICULATE DISTRIBUTION (By Weight)				
Micron Range	Inlet		Outlet	
0.0-0.5	%		%	
0.5-1.0	%		%	
1.0-5.0	%		%	
5-10	%		%	
10-20	%		%	
over 20	%		%	
FILTER CHARACTERISTICS				
Filtering Velocity (acfm/ft ² of Cloth)	Bag Diameter (in.)	Bag Length (ft)	Number of Bags	Number of Compartments in Baghouse
Bag rows will be: Staggered Straight		Walkways will be provided between banks of bags: Yes No		
Filtering Material:				
Describe Bag Cleaning Method and Cycle: _____				
ADDITIONAL INFORMATION				

On separate sheets attach the following:

- A. Details regarding principle of operation
- B. An assembly drawing (Front and Top View) of the abatement device dimensioned and to scale clearly showing the design, size and shape.

If the device has bypasses, safety valves, etc., include in drawing and specify when such bypasses are to be used and under what conditions.

TABLE 12
ELECTROSTATIC PRECIPITATORS

Point Number (from Flow Diagram)		Manufacturer & Model No. (if available)		
Name of Abatement Device		Type of Particulate Controlled		
GAS STREAM CHARACTERISTICS				
Flow Rate (acfm)		Gas Stream Temperature (°F)	Particulate Grain Loading (grain/scf)	
Design Maximum	Average Expected		Inlet	Outlet
Pressure Drop (in. H ₂ O)		Water Vapor Content of Effluent Stream (lb water/lb dry air)	Fan Requirements (hp) (ft ³ /min)	
PARTICULATE DISTRIBUTION (By Weight)				
Micron Range	Inlet		Outlet	
0.0-0.5	_____ %		_____ %	
0.5-1.0	_____ %		_____ %	
1.0-5.0	_____ %		_____ %	
5-10	_____ %		_____ %	
10-20	_____ %		_____ %	
over 20	_____ %		_____ %	
PRECIPITATOR CHARACTERISTICS				
Number of Stages	Number of Plates	Plate Spacing	Number of Discharge Electrodes	Spacing Between Electrodes and Plates
Length of Plates (ft)	Width of Plates	Potential Applied (KV/in)	Cross-sectional Area of Precipitator (ft ²)	Cross-sectional of Inlet Duct (ft ²)
Precipitator Volume (ft ³)	Residence Time in Precipitator (sec)		Type of Collecting Electrode Tubular Plate	
Method of Frequency of dust removal from collection hopper:				
Describe frequency and type of rapping employed:				
ADDITIONAL INFORMATION				

On separate sheets attach the following:

A. Details regarding principle of operation

B. An assembly drawing (Front and Top View) of the abatement device dimensioned and to scale clearly showing the design, size and shape.

If the device has bypasses, safety valves, etc., include in drawing and specify when such bypasses are to be used and under what conditions.

TABLE 14
ABSORBERS

Point Number (from Flow Diagram)		Manufacturer & Model No. (if available)		
Name of Abatement Device		Type of Air Contaminant Controlled		
GAS STREAM CHARACTERISTICS				
Inlet	Composition: Mole %	Outlet	Flow Rate (acfm)	
			Min. Expected	Design Max.
			Temperature (°F)	
			Inlet	Outlet
		Pressure (psig)		
			Inlet	Outlet
SOLVENT STREAM CHARACTERISTICS				
	Composition: Weight %	Flow Rate (gpm)		
		Min. Expected	Design Max.	
		Temperature (°F)		
			Inlet	Outlet
		Density (lb/ft ³): _____		
COLUMN OR TOWER CHARACTERISTICS				
Type of flow:	<input type="checkbox"/> Countercurrent <input type="checkbox"/> Concurrent <input type="checkbox"/> Crossflow		Tower Dimensions (ft)	
			I.D.	Height
FOR PACKED COLUMNS				
Packing & Size:	Packed Bed Height: (ft)			
FOR TRAY COLUMNS				
Number of Plates	Tray Spacing (in)	Liquid Seal Height (in)		

FURNISH EQUILIBRIUM DATA or curve for the system at operating conditions. Also attach information outlining disposition of contaminant after solvent regeneration.

**TABLE 15
ADSORBERS**

Point Number (from Flow Diagram)		Manufacturer & Model No. (if available)		
Name of Abatement Device		Type of Air Contaminant Controlled		
GAS STREAM CHARACTERISTICS				
Components	Mole %	Total Flow Rate (acfm)		Gas Stream Temperature (°F)
		Design Maximum	Average Expected	Operating Pressure (psia)
1. _____	_____			
2. _____	_____			
3. _____	_____			
4. _____	_____	Material to be adsorbed:		
5. _____	_____	(chemical name of adsorbate) _____		
ADSORBENT CHARACTERISTICS				
Type of Adsorbent (manufacturer & grade no.)	Bed Depth (ft)	Bed Volume (ft ³)	Saturation Capacity of Pollutant on Adsorbent (supply units)	Length of Mass Transfer Zone (inches)
EQUILIBRIUM DATA				
Supply equilibrium adsorption isotherm for pollutant over adsorbent at estimated operating temperature.				
REGENERATIVE SYSTEMS				
Residual Charge - wt. of adsorbate remaining on adsorbent after regeneration (lbs adsorbate/lb adsorbent)	Adsorption Time per Bed (minutes)	Regeneration Time per Bed (minutes)	Number of Beds	
Describe disposition of contaminant after regeneration (or during desorption step): _____				

ADDITIONAL INFORMATION				

On separate sheets attach the following:

A. Details regarding principle of operation

B. An assembly drawing (Front and Top View) of the abatement device dimensioned and to scale clearly showing the design, size and shape.

If the devices has bypasses, safety valves, etc., include in drawing and specify when such bypasses are to be used and under what conditions.

TABLE 16

**SIMPLIFIED DATA SHEET FOR
PARTICULATE DUST COLLECTOR**

(Complete one table for each collector)

1. Point Number (Flow Diagram) _____

2. Type Device:

- | | | | |
|-------|----------------------------|-------|-----|
| _____ | cyclone | _____ | wet |
| _____ | electrostatic precipitator | _____ | dry |
| _____ | baghouse | | |
| _____ | scrubber | | |
| _____ | other (specify) | | |

3. Manufacturer & Model or type _____

4. Manufacturer's guarantees:

PARTICULATE GRAIN LOADING (grain/scf)

Overall Efficiency Guaranteed: _____ %

Inlet dust stream	Outlet dust stream
-------------------	--------------------

Micron Range	Particle Size Distribution wt. %	Manufacturer's guaranteed removal efficiency for each micron range
0.0-.5	_____ %	_____ %
0.5-1.0	_____ %	_____ %
1.0-5.0	_____ %	_____ %
5-10	_____ %	_____ %
10-20	_____ %	_____ %
over 20	_____ %	_____ %

5. Submit Manufacturer's brochures, data sheets and other specifications in sufficient detail to demonstrate principals of operation and how equipment was selected and sized. This data must specify design operating conditions.

TEXAS AIR CONTROL BOARD
FORM PI-3, OPERATING APPLICATION

I. PERMIT TO BE ISSUED TO: _____
(Corporation, Company, Government Agency, Firm, etc.)

Mailing Address: _____

Individual authorized to act for applicant: Name: _____ Title: _____

Address: _____ Telephone: _____

II. PERMIT UNIT INFORMATION:

Location: Nearest City _____ County _____

Permit Unit now operating under permit No. C- _____

III. PERMIT UNIT SCHEDULE:

Date permit unit placed in operation: _____
(Month) (Day) (Year)

IV. LOCAL AGENCIES:

Has Local Air Pollution Control Program been contacted since permit unit was placed in operation?

Yes

No

No active local program in the city or county

V. SPECIAL PROVISIONS:

If special provisions were listed on the construction permit, supply
data or other information to indicate compliance with those provisions.

VI. I, _____
(Name) (Title)

state that I have knowledge of the facts herein set forth and that the same are true and correct to the best of my knowledge and belief, the project for which application is made will not in any way violate any provision of the Texas Clean Air Act, Article 4477-5, Vernon's Civil Statutes, as amended, or any of the rules and regulations of the Texas Air Control Board or any local governmental ordinance or resolution enacted pursuant to the Texas Clean Air Act.

DATE _____ SIGNATURE _____



TEXAS AIR CONTROL BOARD

A CONSTRUCTION PERMIT
IS HEREBY ISSUED TO

AUTHORIZING CONSTRUCTION OF

WHICH IS TO BE LOCATED AT

and which is to be constructed in accordance with and subject to the Texas Clean Air Act, as amended (Article 4477-5, VTCS), and all Rules, Regulations and Orders of the Texas Air Control Board. Said construction is subject to any additional or amended rules, regulations and orders of the Board adopted pursuant to the Act, and to all of the following conditions:

1. This permit is non-transferable from person to person or from place to place.
2. This permit is automatically void if construction is not begun within one year of the date of issuance.
3. This permit is automatically void when an operating permit is issued or denied.
4. The facility covered by this permit shall be constructed as specified in the application for permit to construct.
5. The Board shall be notified prior to the start-up of the facility authorized by this permit in such a manner that a representative of the Texas Air Control Board may be present at the time of start-up.
6. The Board shall be notified prior to the start of any required monitoring of the facility authorized by this permit in such a manner that a representative of the Texas Air Control Board may be present during monitoring.
7. This permit is not a guarantee that the facility will receive an operating permit at the end of the construction period, nor does it absolve the holder from the responsibility for the consequences of non-compliance with all Rules and Regulations and orders of the Texas Air Control Board or with the intent of the Texas Clean Air Act.
8. Special provisions:

Acceptance of the permit constitutes an acknowledgement and agreement that the holder will comply with all Rules, Regulations and Orders of the Board issued in conformity with the Act and the conditions precedent to the granting of this permit.

PERMIT NO. C- _____ DATE _____

EXECUTIVE DIRECTOR
TEXAS AIR CONTROL BOARD
X-33

Revised 4-15-75



TEXAS AIR CONTROL BOARD

AN OPERATING PERMIT
IS HEREBY ISSUED TO

AUTHORIZING OPERATION OF

WHICH IS LOCATED AT

and which is to be operated in accordance with and subject to the Texas Clean Air Act, as amended (Article 4477-5, VTCS), and all Rules, Regulations and Orders of the Texas Air Control Board. Said operation is subject to any additional or amended rules, regulations and orders of the Board adopted pursuant to the Act, and to all of the following conditions:

1. This permit is non-transferable from person to person or from place to place.
2. Upon request by the Executive Director of the Texas Air Control Board, the holder of this permit shall make sufficient stack sampling analyses, or other tests, to prove satisfactory equipment performance. All sampling and testing procedures shall be approved by the Executive Director and coordinated with the regional representatives of the Texas Air Control Board.
3. The facilities covered by this permit shall not be operated unless all associated air pollution abatement equipment is maintained in good working order and operating properly during normal facility operations.
4. Special Provisions:

Acceptance of this permit constitutes an acknowledgement and agreement that the holder will comply with all Rules, Regulations and Orders of the Board issued in conformity with the Act and the conditions precedent to the granting of this permit.

PERMIT NO. R- _____ DATE _____

EXECUTIVE DIRECTOR
TEXAS AIR CONTROL BOARD