# Technical Evaluation

and

# Preliminary Determination

Semiconductor Production Process Harris Semiconductor Melbourne, Florida

# Application Numbers:

AC 05-54990

-54991

-54992

-54993

-54994

-54995

-54996

Department of Environmental Regulation Bureau of Air Quality Management Central Air Permitting Section

#### NOTICE OF PROPOSED AGENCY ACTION

The Department of Environmental Regulation gives notice of its intent to issue permits to Harris Semiconductor for the installation of hood-type working stations with associated solvent and acid vapor scrubbers at their existing facility in Melbourne Brevard County, Florida. A determination of Best Available Control Technology (BACT) was not required.

A person who is substantially affected by the Department's proposed permitting decision may request a hearing in accordance with Section 120.57, Florida Statutes, and Chapters 17-1 and 28-5, Florida Administrative Code. The request for hearing must be filed (received) in the Office of General Counsel of the Department at 2600 Blair Stone Road, Twin Towers Office Building, Tallahassee, Florida 32301, within fourteen (14) days of publication of this notice. Failure to file a request for hearing within this time period shall constitute a waiver of any right such person may have to request a hearing under Section 120.57, Florida Statutes.

The applications, technical evaluation and department intent are available for public inspection during normal business hours, 8:00 a.m. to 5:00 p.m., Monday through Friday, except legal holidays, at the following locations:

DER Bureau of Air Quality Management 2600 Blair Stone Road Tallahassee, FL 32301

DER St. Johns River District 3319 Maguire Blvd., Suite 232 Orlando, Florida 32803

Comments on this action shall be submitted in writing to Bill Thomas of Tallahassee office within thirty (30) days of this notice.

# RULES OF THE ADMINISTRATIVE COMMISSION MODEL RULES OF PROCEDURE CHAPTER 28-5 DECISIONS DETERMINING SUBSTANTIAL INTERESTS

# 28-5.15 Requests for Formal and Informal Proceedings

- (1) Requests for proceedings shall be made by petition to the agency involved. Each petition shall be printed typewritten or otherwise duplicated in legible form on white paper of standard legal size. Unless printed, the impression shall be on one side of the paper only and lines shall be double spaced and indented.
- (2) All petitions filed under these rules should contain:
  - (a) The name and address of each agency affected and each agency's file or identification number, if known;
  - (b) The name and address of the petitioner or petitioners;
    - (c) All disputed issues of material fact. If there are none, the petition must so indicate;
    - (d) A concise statement of the ultimate facts alleged, and the rules, regulations and constitutional provisions which entitle the petitioner to relief;
    - (e) A statement summarizing any informal action taken to resolve the issues, and the results of that action;
    - (f) A demand for the relief to which the petitioner deems himself entitled; and
    - (g) Such other information which the petitioner contends is material.

# I. PROJECT DESCRIPTION

# A. Applicant

Harris Semiconductor
P. O. Box 833
Melbourne, Florida 32901

# B. Project Description and Location

The applicant intends to install hood type working stations for the manufacture of semiconductors. The working stations will be installed in existing buildings (Bldgs. 59, 62, and 63). Exhaust fumes of volatile organic compounds (VOC) and acid vapors will be vented to scrubber systems.

The existing facility is located on Palm Bay Road in Palm Bay City, Brevard County, Florida. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

#### C. Process and Controls

The manufacture of the semiconductors involves the immersing of the material in various acids and/or solvents (VOC). Acid mists and VOC's are released into the air from both surface evaporation and material drying.

The released acid vapors and VOC's will be captured by a hood system and vented to a scrubber system. A material balance verification system will be employed at this facility to account for the VOC emissions released into the atmosphere. A program of sampling and analyses will be instituted to maintain proper scrubber effluents.

#### II. RULE APPLICABILITY

The proposed project is subject to the preconstruction review under the provisions of Chapter 403, Florida Statutes, and Rules 17-2 and 17-4, Florida Administrative Code (FAC).

The proposed project is located in an area designated attainment for all pollutants. Therefore, review shall be in accordance with Rule 17-2.500, FAC, Prevention of Significant Deterioration.

The current annual VOC emissions are estimated to be 36.2 TPY (tons per year), which is by definition a minor facility according to Rule 17-2.100(100), FAC. Therefore, review shall be in accordance with Rule 17-2.500(2)(d)3., FAC, Modifications to Minor Facilities.

Table 1 reflects the potential VOC emissions from the proposed modification. Since the potential VOC emissions are 3.41 TPY, the project will be a minor modification to a minor facility and exempt from new source review requirements in accordance with Rule 17-2.500(2)(d)3., FAC. Therefore, the proposed modification will be permitted in accordance with Rule 17-2.600, FAC, Specific Source Emission Limiting Standards, or Rule 17-2.660, FAC, Standards of Performance for New Stationary Sources.

Table 1

Chemical	Potential VOC Emissions (lbs/yr)
Acetone Ethanol Freonl Methanol Microstrip <sup>2</sup> N-Butyl Acetate Photoresist <sup>2</sup> Propanol Xylene	3332.6 76.2 170.0 375.1 21.1 76.7 2303.0 623.9 13.6
Total <sup>3</sup>	6822.2 (3.41 TPY)

<sup>1</sup>Freon: 1,1,1-trichloroethane - exempt from Rule 17-2, FAC. 2Constituents are confidential.

Since there is no specific emission limiting standard contained in Rule 17-2.600, FAC, nor is there any standards of performance for new stationary sources contained in Rule 17-2.660, FAC, the modification will be permitted in accordance with Rule 17-2.620, FAC, General Pollutant Emission Limiting Standards.

In Rule 17-2.620(1)(a), FAC, no person shall store, pump, handle, process, load, unload or use in any process or installation volatile organic compounds or organic solvents without applying known and existing vapor emission control devices or systems deemed necessary and ordered by the Department. Rule 17-2.620(2), FAC, states that no person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. Objectionable odor is defined as any odor present in the outdoor atmosphere, which by itself or in combination with other odors, is or may be harmful or injurious to human health

<sup>3</sup>Total does not include the Freon.

or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance according to Rule 17-2.100(108), FAC.

#### III. SUMMARY OF EMISSIONS

#### A. Emission Limitations

The regulated pollutant emissions from this modification to the existing facility are volatile organic compounds in accordance with Rule 17-2.620, FAC.

Specific acid solutions are also being used during the manufacturing operations. There are no specific emission limiting standards for these specific acids. However, the acid vapors will be scrubbed to reduce emissions.

Table 2 reflects the allowable VOC emissions and potential acid vapor emissions from Buildings 59, 62, and 63.

Table 2

Building		C Allowable sions <sup>1</sup>	Potential Emis	Acid Vapor sions
	lbs/yr	TPY	lbs/yr	TPY
59 62 63	6597.5 87.0 137.7	3.30 0.04 0.07	141.0 4.6 81.0	0.071 0.002 0.041

<sup>1</sup>VOC emissions do not include those that are exempt from Rule 17-2, FAC.

The permitted emissions are in compliance with all requirements of Rule 17-2, FAC.

# B. Air Quality Impacts

From the technical review of the applications and amendments, the bureau has determined that the modification at the existing facility will not cause a violation of Florida's ambient air quality standards.

# IV. CONCLUSIONS

The maximum allowable VOC emissions from this modification to the existing facility should not cause any violation of Florida's ambient air quality standards. Even though there are no emissions standards for the acids used, the applicant will be installing scrubber systems to reduce emissions and prevent odors from entering the outside atmosphere.

The use of a material balance verification system for the VOC's will account for the emissions lost to the atmosphere from the facility. A program of sampling and analyses employed by the applicant to maintain the scrubber systems should be adequate to keep emissions at their lowest and objectionable odors from escaping.

# DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM GOVERNOR VICTORIA J. TSCHINKEL SECRETARY

#### PERMITTEE:

Harris Semiconductor
P. O. Box 883
Melbourne, Florida
32901

Permit Number: AC 05-54990

Date of Issue:

Expiration Date: June 1, 1984

County: Brevard

Latitude/Longitude: 28° 01' 20"N/

80° 36' 10"W

Project: Building 59 Solvent

Vapor Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403

, Florida Statutes, and Florida Administrative Code Rule(s)

17-2 and 17-4

. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of hood type work stations for the manufacture of semiconductors in Building 59. A 20,000 CFM scrubber manufactured by Beverly Pacific will be installed to control solvent vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

#### Attachments are as follows:

- Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
- 2. William Thomas' letter dated May 21, 1982.
- P. R. Bumgarner's letter dated August 2, 1982.
- 4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
- 5. Bruce Mitchell's memo to file dated September 29, 1982.
- 6. C. H. Fancy's letter dated December 17, 1982.
- 7. P. R. Bumgarner's letter dated January 7, 1983.
- 8. P. R. Bumgarner's letter dated May 4, 1983.

Permit Number: AC 05-54990

Date of Issue:

Expiration Date: June 1, 1984

#### **GENERAL CONDITIONS:**

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

- 2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
- 3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
- 4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
- 5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE: Harris Semiconductor I. D

I. D. Number:

Permit Number: AC 05-54990

Date of Issue:

Expiration Date: June 1, 1984

# GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

- 7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

- 8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and
  - b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Permit Number: AC 05-54990

Date of Issue:

Expiration Date: June 1, 1984

#### **GENERAL CONDITIONS:**

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

- 9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
- 10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
- 11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
- 12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
- 13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Compliance with New Source Performance Standards.
- 14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

Permit Number: AC 05-54990

Date of Issue:

Expiration Date: June 1, 1984

# GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
  - the date, exact place, and time of sampling or measurements;
  - the person responsible for performing the sampling or measurements;
  - the date(s) analyses were performed;
  - the person responsible for performing the analyses;
  - the analytical techniques or methods used; and
  - the results of such analyses.
- 15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

# SPECIFIC CONDITIONS:

- 1. The maximum allowable VOC (Volatile organic compounds) emissions from the work stations and scrubber system shall be 6597.5 pounds per year.
- The solvent vapor exhaust scrubber must be on during the working hours.
- 3. The maximum operating hours shall be 24 hours per day, 264 days per year, for a total of 6,336 hours per year.

Permit Number: AC 05-54990

Date of Issue:

Expiration Date: June 1, 1984

# SPECIFIC CONDITIONS:

- An inspection and maintenance plan shall be submitted to the DER's St. Johns River District office as part of the operating permit application. The plan shall include provisions for the prevention and correction of solvent losses from leaks and equipment malfunction and a record system on the amount and types of solvents purchased and reclaimed.
- Compliance with the VOC emissions limit for the working stations and the scrubber system shall be determined through the use of a material balance of the solvents purchased and reclaimed.
- A meter to measure the pressure drop shall be installed on 6. the scrubber system.
- A Certificate of Completion shall be submitted to the DER's 7. St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.
- Objectionable odors shall not be allowed on off-plant 8. property.
- Annual reports, kept by month, shall be due 15 days after 9. the anniversary date of the operating permit and are to be submitted to the DER's St. Johns River District office. The annual reports are to contain the amounts of all VOC's,

by chemical, purchased and reclaimed.
Issued this day of, 1983.
STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
VICTORIA J. TSCHINKEL, Secretary

\_\_ pages attached.

AC 05-54991

# STATE OF FLORIDA

# DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM GOVERNOR VICTORIA J. TSCHINKEL SECRETARY

#### PERMITTEE:

Harris Semiconductor P. O. Box 883 Melbourne, Florida 32901 Permit Number: AC 05-54991

Date of Issue:

Expiration Date: June 1, 1984

County: Brevard

Latitude/Longitude: 28° 01' 20"N/

80° 36' 10"W

Project: Building 59 Acid Vapor

Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403

, Florida Statutes, and Florida Administrative Code Rule(s)

17-2 and 17-4

. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of hood type work stations for the manufacture of semiconductors in Building 59. A 40,000 CFM fume scrubber manufactured by Beverly Pacific will be installed to control acid vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

# Attachments are as follows:

- Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
- 2. William Thomas' letter dated May 21, 1982.
- 3. P. R. Bumgarner's letter dated August 2, 1982.
- 4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
- 5. Bruce Mitchell's memo to file dated September 29, 1982.
- 6. C. H. Fancy's letter dated December 17, 1982.
- 7. P. R. Bumgarner's letter dated January 7, 1983.
- 8. P. R. Bumgarner's letter dated May 4, 1983.

Permit Number: AC 05-54991

Date of Issue:

Expiration Date: June 1, 1984

#### **GENERAL CONDITIONS:**

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

- 2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
- 3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
- 4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
- 5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE: Harris Semiconductor

I. D. Number:

Permit Number: AC 05-54991

Date of Issue:

Expiration Date: June 1, 1984

#### **GENERAL CONDITIONS:**

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

- 7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - Inspecting the facility, equipment, practices, or operations regulated or required under this permit;
     and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

- 8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and
  - b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Permit Number: AC 05-54991

Date of Issue:

Expiration Date: June 1, 1984

#### **GENERAL CONDITIONS:**

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

- 9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
- 10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
- 11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
- 12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
- 13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Compliance with New Source Performance Standards.
- 14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

Permit Number: AC 05-54991

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
  - the date, exact place, and time of sampling or measurements;
  - the person responsible for performing the sampling or measurements;
  - the date(s) analyses were performed;
  - the person responsible for performing the analyses;
  - the analytical techniques or methods used; and
  - the results of such analyses.
- 15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

#### SPECIFIC CONDITIONS:

- 1. The potential acid vapor emissions from the work stations and scrubber system is 141.0 pounds per year.
- 2. The acid vapor exhaust scrubber must be on during the working hours.
- 3. The maximum operating hours shall be 24 hours per day, 264 days per year, for a total of 6,336 hours per year.

PERMITTEE: Harris Semiconductor

I. D. Number:

Permit Number: AC 05-54991

Date of Issue:

Expiration Date: June 1, 1984

#### SPECIFIC CONDITIONS:

- 4. A meter to measure the pressure drop shall be installed on the scrubber system.
- 5. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.
- 6. Objectionable odors shall not be allowed on off-plant property.

	Issued this day of, 1983.
	STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
	VICTORIA J. TSCHINKEL, Secretary
pages attached.	

Page 6 of  $\underline{6}$ .

AC 05-54992

#### STATE OF FLORIDA

# DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM GOVERNOR VICTORIA J. TSCHINKEL SECRETARY

#### PERMITTEE:

Harris Semiconductor P. O. Box 883 Melbourne, Florida 32901 Permit Number: AC 05-54992

Date of Issue:

Expiration Date: June 1, 1984

County: Brevard

Latitude/Longitude: 28° 01' 20"N/

80° 36' 10"W

Project: Building 62 Solvent

Vapor Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403

, Florida Statutes, and Florida Administrative Code Rule(s)

17-2 and 17-4

. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of hood type work stations for the manufacture of semiconductors in Building 62. A 12,000 CFM fume scrubber manufactured by Beverly Pacific will be installed to control solvent vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

#### Attachments are as follows:

- 1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
- 2. William Thomas' letter dated May 21, 1982.
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- 7. P. R. Bumgarner's letter dated January 7, 1983.
- 8. P. R. Bumgarner's letter dated May 4, 1983.

Permit Number: AC 05-54992

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# **GENERAL CONDITIONS:**

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

- 2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
- 3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
- 4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
- 5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

PERMITTEE: Harris Semiconductor

I. D. Number: Permit Number: AC 05-54992

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

- 7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

- 8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and
  - b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Permit Number: AC 05-54992

Date of Issue:

Expiration Date: June 1, 1984

# GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

- 9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
- 10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
- 11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
- 12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
- 13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Compliance with New Source Performance Standards.
- 14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

Permit Number: AC 05-54992

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
  - the date, exact place, and time of sampling or measurements;
  - the person responsible for performing the sampling or measurements;
  - the date(s) analyses were performed;
  - the person responsible for performing the analyses;
  - the analytical techniques or methods used; and
  - the results of such analyses.
- 15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

#### SPECIFIC CONDITIONS:

- The maximum allowable VOC (Volatile organic compounds) emissions from the work stations and scrubber system shall be 72.2 pounds per year.
- 2. The solvent vapor exhaust scrubber must be on during the working hours.
- 3. The maximum operating hours shall be 8 hours per day, 264 days per year, for a total of 2,112 hours per year.

Pag	e	5	of	6

tor Permit Num

Permit Number: AC 05-54992

Date of Issue:

Expiration Date: June 1, 1984

#### SPECIFIC CONDITIONS:

\_\_\_ pages attached.

- 4. An inspection and maintenance plan shall be submitted to the DER's St. Johns River District office as part of the operating permit application. The plan shall include provisions for the prevention and correction of solvent losses from leaks and equipment malfunction and a record system on the amount and types of solvents purchased and reclaimed.
- 5. Compliance with the VOC emissions limit for the working stations and the scrubber system shall be determined through the use of a material balance of the solvents purchased and reclaimed.
- 6. A meter to measure the pressure drop shall be installed on the scrubber system.
- 7. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.
- 8. Objectionable odors shall not be allowed on off-plant property.
- 9. Annual reports, kept by month, shall be due 15 days after the anniversary date of the operating permit and are to be submitted to the DER's St. Johns River District office. The annual reports are to contain the amounts of all VOC's, by chemical, purchased and reclaimed.

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	Issued this day of, 1983.
	STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
	VICTORIA J. TSCHINKEL, Secretary

AC 05-54993

#### STATE OF FLORIDA

# DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM GOVERNOR VICTORIA J. TSCHINKEL SECRETARY

#### PERMITTEE:

Harris Semiconductor P. O. Box 883 Melbourne, Florida 32901 Permit Number: AC 05-54993

Date of Issue:

Expiration Date: June 1, 1984

County: Brevard

Latitude/Longitude: 28° 01' 20"N/

80° 36' 10"W

Project: Building 62 Solvent

Vapor Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403

, Florida Statutes, and Florida Administrative Code Rule(s)

17-2 and 17-4

. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of hood type work stations for the manufacture of semiconductors in Building 62. A 1,200 CFM fume scrubber manufactured by Beverly Pacific will be installed to control solvent vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

#### Attachments are as follows:

- 1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
- 2. William Thomas' letter dated May 21, 1982.
- 3. P. R. Bumgarner's letter dated August 2, 1982.
- 4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
- 5. Bruce Mitchell's memo to file dated September 29, 1982.
- 6. C. H. Fancy's letter dated December 17, 1982.
- 7. P. R. Bumgarner's letter dated January 7, 1983.
- 8. P. R. Bumgarner's letter dated May 4, 1983.

Permit Number: AC 05-54993

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

- 2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
- 3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
- 4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
- 5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

Permit Number: AC 05-54993

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

- The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - Having access to and copying any records that must be a. kept under the conditions of the permit;
  - Inspecting the facility, equipment, practices, or b. operations regulated or required under this permit;
  - Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

- 8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a description of and cause of non-compliance; and
  - b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Permit Number: AC 05-54993

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

- 9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
- 10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
- 11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
- 12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
- 13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Compliance with New Source Performance Standards.
- 14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

Permit Number: AC 05-54993

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
  - the date, exact place, and time of sampling or measurements;
  - the person responsible for performing the sampling or measurements;
  - the date(s) analyses were performed;
  - the person responsible for performing the analyses;
  - the analytical techniques or methods used; and
  - the results of such analyses.
- 15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

#### SPECIFIC CONDITIONS:

- 1. The maximum allowable VOC (Volatile organic compounds) emissions from the work stations and scrubber system shall be 14.8 pounds per year.
- 2. The solvent vapor exhaust scrubber must be on during the working hours.
- 3. The maximum operating hours shall be 8 hours per day, 264 days per year, for a total of 2,112 hours per year.

tor

Permit Number: AC 05-54993

. Date of Issue:

Expiration Date: June 1, 1984

# SPECIFIC CONDITIONS:

- 4. An inspection and maintenance plan shall be submitted to the DER's St. Johns River District office as part of the operating permit application. The plan shall include provisions for the prevention and correction of solvent losses from leaks and equipment malfunction and a record system on the amount and types of solvents purchased and reclaimed.
- 5. Compliance with the VOC emissions limit for the working stations and the scrubber system shall be determined through the use of a material balance of the solvents purchased and reclaimed.
- 6. A meter to measure the pressure drop shall be installed on the scrubber system.
- 7. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.
- 8. Objectionable odors shall not be allowed on off-plant property.
- 9. Annual reports, kept by month, shall be due 15 days after the anniversary date of the operating permit and are to be submitted to the DER's St. Johns River District office. The annual reports are to contain the amount of all VOC's, by chemical, purchased and reclaimed.

Issued	this		da y	of	_,	1983
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STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION

VICTORIA	J.	TSCHINKEL,	Secretary	

pages attached.
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AC 05-54994

#### STATE OF FLORIDA

# DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM GOVERNOR VICTORIA J. TSCHINKEL SECRETARY

#### PERMITTEE:

Harris Semiconductor P. O. Box 883 Melbourne, Florida 32901 Permit Number: AC 05-54994

Date of Issue:

Expiration Date: June 1, 1984

County: Breward

Latitude/Longitude: 28° 01' 20"N/

80° 36' 10"W

Project: Building 62 Acid Vapor

Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403

, Florida Statutes, and Florida Administrative Code Rule(s)

17-2 and 17-4

. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of hood type work stations for the manufacture of semiconductors in Building 62. A 24,000 CFM fume scrubber manufactured by Beverly Pacific will be installed to control acid vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

#### Attachments are as follows:

- 1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
- 2. William Thomas' letter dated May 21, 1982.
- 3. P. R. Bumgarner's letter dated August 2, 1982.
- 4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
- 5. Bruce Mitchell's memo to file dated September 29, 1982.
- 6. C. H. Fancy's letter dated December 17, 1982.
- 7. P. R. Bumgarner's letter dated January 7, 1983.
- 8. P. R. Bumgarner's letter dated May 4, 1983.

Permit Number: AC 05-54994

Date of Issue:

Expiration Date: June 1, 1984

#### **GENERAL CONDITIONS:**

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

- 2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
- 3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
- 4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
- 5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

Permit Number: AC 05-54994

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

- 7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

- 8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and
  - b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Permit Number: AC 05-54994

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

- 9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
- 10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
- 11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
- 12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
- 13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Compliance with New Source Performance Standards.
- 14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

Permit Number: AC 05-54994

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
  - the date, exact place, and time of sampling or measurements;
  - the person responsible for performing the sampling or measurements;
  - the date(s) analyses were performed;
  - the person responsible for performing the analyses;
  - the analytical techniques or methods used; and
  - the results of such analyses.
- 15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

#### SPECIFIC CONDITIONS:

- 1. The potential acid vapor emissions from the work stations and scrubber system is 4.6 pounds per year.
- 2. The acid vapor exhaust scrubber must be on during the working hours.
- 3. The maximum operating hours shall be 8 hours per day, 264 days per year, for a total of 2,112 hours per year.

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Page	5	of	6	

PERMITTEE: Harris Semiconductor

I. D. Number:

Permit Number: AC 05-54994

Date of Issue:

Expiration Date: June 1, 1984

#### SPECIFIC CONDITIONS:

- 4. A meter to measure the pressure drop shall be installed on the scrubber system.
- 5. A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.
- 6. Objectionable odors shall not be allowed on off-plant property.

	Issued this day of, 1983.
	STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
	VICTORIA J. TSCHINKEL, Secretary
pages attached.	

Page 6 of 6.

AC 05-54995

#### STATE OF FLORIDA

## DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM GOVERNOR VICTORIA J. TSCHINKEL SECRETARY

#### PERMITTEE:

Harris Semiconductor
P. O. Box 883
Melbourne, Florida
32901

Permit Number: AC 05-54995

Date of Issue:

Expiration Date: June 1, 1984

County: Brevard

Latitude/Longitude: 28° 01' 20"N/

80° 36' 10"W

Project: Building 63 Solvent

Vapor Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403

, Florida Statutes, and Florida Administrative Code Rule(s)

17-2 and 17-4

. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of hood type work stations for the manufacture of semiconductors in Building 63. A 10,000 CFM fume scrubber manufactured by Beverly Pacific will be installed to control solvent vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

#### Attachments are as follows:

- 1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
- 2. William Thomas' letter dated May 21, 1982.
- 3. P. R. Bumgarner's letter dated August 2, 1982.
- 4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
- 5. Bruce Mitchell's memo to file dated September 29, 1982.
- 6. C. H. Fancy's letter dated December 17, 1982.
- 7. P. R. Bumgarner's letter dated January 7, 1983.
- 8. P. R. Bumgarner's letter dated May 4, 1983.

Permit Number: AC 05-54995

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

- 2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
- 3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
- 4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
- 5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

Permit Number: AC 05-54995

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

- 7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - b. Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

- 8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and
  - b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Permit Number: AC 05-54995

Date of Issue:

Expiration Date: June 1, 1984

#### **GENERAL CONDITIONS:**

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

- 9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
- 10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
- ll. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
- 12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
- 13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Compliance with New Source Performance Standards.
- 14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

Permit Number: AC 05-54995

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.

- c. Records of monitoring information shall include:
  - the date, exact place, and time of sampling or measurements;
  - the person responsible for performing the sampling or measurements;
  - the date(s) analyses were performed;
  - the person responsible for performing the analyses;
  - the analytical techniques or methods used; and
  - the results of such analyses.

15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

#### SPECIFIC CONDITIONS:

- The maximum allowable VOC (Volatile organic compounds) emissions from the work stations and scrubber system shall be 237.8 pounds per year.
- The solvent vapor exhaust scrubber must be on during the working hours.
- 3. The maximum operating hours shall be 24 hours per day, 264 days per year, for a total of 6,336 hours per year.

Permit Number: AC 05-54995

Date of Issue:

Expiration Date: June 1, 1984

#### SPECIFIC CONDITIONS:

- An inspection and maintenance plan shall be submitted to the DER's St. Johns River District office as part of the operating permit application. The plan shall include provisions for the prevention and correction of solvent losses from leaks and equipment malfunction and a record system on the amount and types of solvents purchased and reclaimed.
- Compliance with the VOC emissions limit for the working 5. stations and the scrubber system shall be determined through the use of a material balance of the solvents purchased and reclaimed.
- A meter to measure the pressure drop shall be installed on the scrubber system.
- A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.
- Objectionable odors shall not be allowed on off-plant property.
- Annual reports, kept by month, shall be due 15 days after the anniversary date of the operating permit and are to be submitted to the DER's St. Johns River District office. The annual reports are to contain the amounts of all VOC's, by chemical, purchased and reclaimed.

Issued this day of, 198	3
STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION	

VICTORIA	J.	TSCHINKEL,	Secretary

AC 05-54996

#### STATE OF FLORIDA

## DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM GOVERNOR VICTORIA J. TSCHINKEL SECRETARY

#### PERMITTEE:

Harris Semiconductor P. O. Box 883 Melbourne, Florida 32901 Permit Number: AC 05-54996

Date of Issue:

Expiration Date: June 1, 1984

County: Brevard

Latitude/Longitude: 28° 01' 20"N/

80° 36' 10"W

Project: Building 63 Acid Vapor

Exhaust Scrubber

This permit is issued under the provisions of Chapter(s) 403

, Florida Statutes, and Florida Administrative Code Rule(s)

17-2 and 17-4

The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the department and made a part hereof and specifically described as follows:

For the construction of hood type work stations for the manufacture of semiconductors in Building 63. A 50,000 CFM fume scrubber manufactured by Beverly Pacific will be installed to control acid vapors. The modification will occur at the applicant's existing facility located on Palm Bay Road. The UTM coordinates are Zone 17-538.7 km East and 3100.9 km North.

Construction shall be in accordance with the permit application and plans, documents, amendments, and drawings except as otherwise noted on pages 5-6 of the "Specific Conditions".

#### Attachments are as follows:

- 1. Application to Construct Air Pollution Sources, DER Form 17-1.122(16).
- 2. William Thomas' letter dated May 21, 1982.
- 3. P. R. Bumgarner's letter dated August 2, 1982.
- 4. P. R. Bumgarner's letter dated September 13, 1982 (Confidential).
- 5. Bruce Mitchell's memo to file dated September 29, 1982.
- 6. C. H. Fancy's letter dated December 17, 1982.
- 7. P. R. Bumgarner's letter dated January 7, 1983.
- 8. P. R. Bumgarner's letter dated May 4, 1983.

Permit Number: AC 05-54996

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations, and restrictions set forth herein are "Permit Conditions" and as such are binding upon the permittee and enforceable pursuant to the authority of Sections 403.161, 403.727, or 403.859 through 403.861, Florida Statutes. The permittee is hereby placed on notice that the department will review this permit periodically and may initiate enforcement action for any violation of the "Permit Conditions" by the permittee, its agents, employees, servants or representatives.

- 2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the department.
- 3. As provided in Subsections 403.087(6) and 403.722(5), Florida Statutes, the issuance of this permit does not convey any vested rights or any exclusive privileges. Nor does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state or local laws or regulations. This permit does not constitute a waiver of or approval of any other department permit that may be required for other aspects of the total project which are not addressed in the permit.
- 4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgement of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the state. Only the Trustees of the Internal Improvement Trust Fund may express state opinion as to title.
- 5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, plant or aquatic life or property and penalties therefor caused by the construction or operation of this permitted source, nor does it allow the permittee to cause pollution in contravention of Florida Statutes and department rules, unless specifically authorized by an order from the department.

Permit Number: AC 05-54996

Date of Issue:

Expiration Date: June 1, 1984

#### **GENERAL CONDITIONS:**

6. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed or used by the permittee to achieve compliance with the conditions of this permit, as required by department rules. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by department rules.

- 7. The permittee, by accepting this permit, specifically agrees to allow authorized department personnel, upon presentation of credentials or other documents as may be required by law, access to the premises, at reasonable times, where the permitted activity is located or conducted for the purpose of:
  - a. Having access to and copying any records that must be kept under the conditions of the permit;
  - Inspecting the facility, equipment, practices, or operations regulated or required under this permit; and
  - c. Sampling or monitoring any substances or parameters at any location reasonably necessary to assure compliance with this permit or department rules.

Reasonable time may depend on the nature of the concern being investigated.

- 8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately notify and provide the department with the following information:
  - a. a description of and cause of non-compliance; and
  - b. the period of noncompliance, including exact dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

Permit Number: AC 05-54996

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the department for penalties or revocation of this permit.

- 9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source, which are submitted to the department, may be used by the department as evidence in any enforcement case arising under the Florida Statutes or department rules, except where such use is proscribed by Sections 403.73 and 403.111, Florida Statutes.
- 10. The permittee agrees to comply with changes in department rules and Florida Statutes after a reasonable time for compliance, provided however, the permittee does not waive any other rights granted by Florida Statutes or department rules.
- 11. This permit is transferable only upon department approval in accordance with Florida Administrative Code Rules 17-4.12 and 17-30.30, as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the department.
- 12. This permit is required to be kept at the work site of the permitted activity during the entire period of construction or operation.
- 13. This permit also constitutes:
  - ( ) Determination of Best Available Control Technology (BACT)
  - ( ) Determination of Prevention of Significant Deterioration (PSD)
  - ( ) Compliance with New Source Performance Standards.
- 14. The permittee shall comply with the following monitoring and record keeping requirements:
  - a. Upon request, the permittee shall furnish all records and plans required under department rules. The retention period for all records will be extended automatically, unless otherwise stipulated by the department, during the course of any unresolved enforcement action.

Permit Number: AC 05-54996

Date of Issue:

Expiration Date: June 1, 1984

#### GENERAL CONDITIONS:

- b. The permittee shall retain at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), copies of all reports required by this permit, and records of all data used to complete the application for this permit. The time period of retention shall be at least three years from the date of the sample, measurement, report or application unless otherwise specified by department rule.
- c. Records of monitoring information shall include:
  - the date, exact place, and time of sampling or measurements;
  - the person responsible for performing the sampling or measurements;
  - the date(s) analyses were performed;
  - the person responsible for performing the analyses;
  - the analytical techniques or methods used; and
  - the results of such analyses.
- 15. When requested by the department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware that relevant facts were not submitted or were incorrect in the permit application or in any report to the department, such facts or information shall be submitted or corrected promptly.

#### SPECIFIC CONDITIONS:

- 1. The potential acid vapor emissions from the work stations and scrubber system is 81.0 pounds per year.
- 2. The acid vapor exhaust scrubber must be on during the working hours.
- 3. The maximum operating hours shall be 24 hours per day, 264 days per year, for a total of 6,336 hours per year.

Page 5	of	6
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Permit Number: AC 05-54996

Date of Issue:

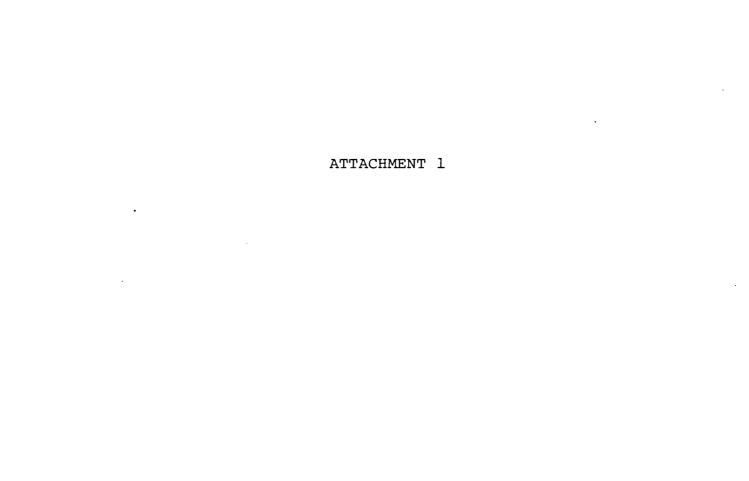
Expiration Date: June 1, 1984

#### SPECIFIC CONDITIONS:

- 4. A meter to measure the pressure drop shall be installed on the scrubber system.
- A Certificate of Completion shall be submitted to the DER's St. Johns River District office or its designee prior to receiving an operating permit or an application for an operating permit shall be applied for prior to 90 days before the expiration date of this permit. The permittee may continue to operate in compliance with all terms of this construction permit until its expiration date or the issuance of an operating permit.
- 6. Objectionable odors shall not be allowed on off-plant property.

	Issued this day of, 1983.
	STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION
	VICTORIA J. TSCHINKEL, Secretary
pages attached.	

Page 6 of 6.



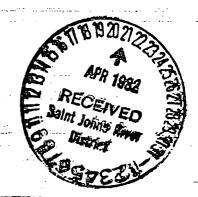


April 16, 1982

## DER

APR 26 1982

Mr. Charles M. Collins
State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
3319 Maguire Blvd., Suite 232
Orlando, Florida 32803



Mr. Collins:

Enclosed you will find four (4) each copies of seven applications to construct air pollution sources. These permits are for exhaust vapor scrubbers associated with Buildings 59, 62 & 63 currently under construction at the Harris Semiconductor Division in Palm Bay, Florida.

Should you have any questions concerning these applications, please contact Robert Sands, our Environmental Engineer, at (305) 729-5736.

Sincerely,

HARRIS' SEMICONDUCTOR

P. R. Bumgarner

Manager

Facilities Engineering

PRB/1mp

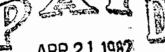
Attachments

AC 05-54990

## **BEST AVAILABLE COPY**



AC 35-54990



SAINT JOHNS RIVER DISTRICT

**DEPARTMENT OF ENVIRONMENTAL REGULATION** APPLICATION TO OPERATE/CONSTRUCT982

AIR POLLUTION SOURCES

	6 9 70 27 22 23 24 2	Á
ONE	APR 1982 RECEIVED	87782
	aint Johns River District	TERE!
6	१४९४६७	•

KIATH DIOLING	BAUW Yes
SOURCE TYPE: Stationary	- [X] New [ ] Existing
APPLICATION TYPE: [ ] Construction [ ] Operation [ ]	Modification
COMPANY NAME: Harris Semiconductor	COUNTY: Brevard
Identify the specific emission point source(s) addressed in this a No. 2, Gas Fired) Building 59, Solvent Vapor Ex	application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit xhaust Scrubber (FS-59-1)
SOURCE LOCATION: Street Palm Bay Road	City Palm Bay
UTM: East 17-538700	North17-B1009-00
Latitude 28 o 01 · 20 "	
APPLICANT NAME AND TITLE: P. R. Bumgarner, Mar	nager Facilities, Engineering
APPLICANT ADDRESS: P. O. Box 883, Melbourne	e, FL 32901 ·
SECTION 1: STATEMENTS E	BY APPLICANT AND ENGINEER
A. APPLICANT	•
I am the undersigned owner or authorized representative* o	f Harris Semiconductor
I certify that the statements made in this application for a permit are true, correct and complete to the best of my pollution control source and pollution control facilities in Florida Statutes, and all the rules and regulations of the control statutes.	construction  knowledge and belief. Further, I agree to maintain and operate the in such a manner as to comply with the provision of Chapter 403, department and revisions thereof. I also understand that a negmit, if will promptly notify the department upon sale or legal transfer of the
*Attach letter of authorization	Signed: 6. 65. 05 cm Lacrem
	P.R. Bumgarner, Mgr. Facilities Engineering Name and Title (Please Type)
•	Date: 2-22-82 Telephone No. 724-7657
B. PROFESSIONAL ENGINEER REGISTERED IN FLORID	A (where required by Chapter 471, F.S.)
be in conformity with modern engineering principles applipermit application. There is reasonable assurance, in my perly maintained and operated, will discharge an effluent thrules and regulations of the department. It is also agreed the	sion control project have been designed/examined by me and found to icable to the treatment and disposal of pollutants characterized in the professional judgment, that the pollution control facilities, when propat complies with all applicable statutes of the State of Florida and the natithe undersigned will furnish, if authorized by the owner, the appliparation of the pollution control facilities and, if applicable, pollution Signed:
	Chester C. Bach
(Affix Seal)	Name (Please Type) Harris Semiconductor
	Company Name (Pleasa Type)
	PT-30 Box 883, Melbourne, FL 32901
Electide Societystian No. 19110	Mailing Address (Please Type)  Date: 2/22/82 Telephone No. 724-7324
Florida Registration No	Date: Telephone No

<sup>&</sup>lt;sup>1</sup>See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

### SECTION II: GENERAL PROJECT INFORMATION

Describe the nature and extent of the project. Refer to pollution control equipment, and exformance as a result of installation. State whether the project will result in full compliance. A	spected improvements in source pe
Building 59 will utilize laboratory hood type work stations	·
conditions for the manufacture of semiconductors. All chemi	
1-2 gallon containers in which the devices are immersed. Ve	
exhaust air is minimal. Air is exhausted through a 20,000 C	
by Beverly Pacific.	THE SCHOOL MAINTAILACTAIN
Schedule of project covered in this application (Construction Permit Application Only)  Start of Construction 5-1-82	0 1 02
Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for project serving pollution control purposes. Information on actual costs shall be furnished permit.)  Fan/Wet Scrubber \$30,200	I with the application for operati
•	
Building 59 is new construction located approximately 1000 f  54 which has current operating permits.	t. from Building
34 WITCH has current operating permits.	
if seasonal, describe:	
If this is a new source or major modification, answer the following questions. (Yes or No)	
1. Is this source in a non-attainment area for a particular pollutant?	no
a. If yes, has "offset" been applied?	-
b. If yes, has "Lowest Achievable Emission Rate" been applied?	•
c. If yes, list non-attainment pollutants.	
<u> </u>	,
<ol><li>Does best available control technology (BACT) apply to this source? If yes, see Section VI.</li></ol>	no
<ol> <li>Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.</li> </ol>	no
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?	no
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?	no
Attach all supportive information related to any answer of "Yes". Attach any justification for considered questionable.	440. 44.1

#### A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization			
	Type	% Wt	Rate - lbs/hr	Relate to Flow Diagram		
See Attachment A				See Attachment B		
		·				
•						

B.	Process Rate,	if applicable:	(See Section V, Iten	n 1)
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1. Total Process Input Rate (lbs/hr): \_\_\_\_n/a

2. Product Weight (lbs/hr): Semiconductor wafer weighs 12 gms.

#### C. Airborne Contaminants Emitted:

Name of Contaminant	Emiss	ion <sup>1</sup>	Allowed Emission <sup>2</sup>	Allowable <sup>3</sup>	Potential Emission <sup>4</sup>		Relate	
	Maximum lbs/hr	Actual T/yr	Rate per Ch. 17-2, F.A.C.	Emission lbs/hr	lbs/hr	T/yr	to Flow Diagram	
	1							
See AttachmentA				n/a			See Attachment	E
		1						
		-						

#### D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup>
Beverly Pacific Corp.	Solvent vapor	85%	n/a	Mfg. design
Model # PS24VT/CB36				Data
			,	

<sup>1</sup>See Section V, Item 2.

DER FORM 17-1.122(16) Page 3 of 10

<sup>&</sup>lt;sup>2</sup>Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. — 0.1 pounds per million BTU heat input)

<sup>3</sup>Calculated from operating rate and applicable standard

<sup>&</sup>lt;sup>4</sup>Emission, if source operated without control (See Section V, Item 3)

<sup>51</sup>f Applicable

_		n/	•
E.	Fuels	n/	Ç

Type (Be S	, , , , , , , , , , , , , , , , , , ,		avg/hr	max.	/hr	(MMBTU)	/hr)
Leite Natural Gas MAC							
Laite Natural Gas MAC							
Inite Natural Gas MAG							
Unite Natural Gas MMC							
Inite Natural Gas MAIO							
Jinus Ivaturai Gas, MMC	F/hr; Fuel	Oils, barrels/hr;	Coal, lbs/hr				
uel Analysis:							
rcent Sulfur:			•	Percent Ash:		· · · · · · · · · · · · · · · · · · ·	,
ensity:							
eat Capacity:			BTU/ib				BTU/9
ther Fuel Contaminants	(which ma	y cause air pollu	tion):				
			_	<u> </u>		·	
If applicable, indica	ta tha narci	ent of final used	for coaca heati	on Annual Ava	race n/a	Maximum	
it applicable, indica	te the perc	ent of fuel used	for space neath	ng. Annual Ave	rage	waximum .	
		ged to	mad ci Ta	wastewater	treatment fa	icirity.	
Emission Stack Geo	251:01				<): :30"		·
Gas Flow Rate: 16	,000/20	,000	ACFM	Gas Exit Tempe	erature: 74		0
Water Vapor Conte	nt: <u>1</u>	•	%	Velocity:5	00		F
		SECTION	IV: INCINER	ATOR INFORM	ATION		
			n/a				
Type of Waste (P	ype O lastics)	Type 1 (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated						•	
escription of Waste		· <u> </u>					
otal Weight Incinerated	(lbs/ħr)			Design Capacity	(lbs/hr)		•
	Hours of O	peration per day	·		davs/w	reek	
pproximate Number of		, p					
pproximate Number of lanufacturer							

•	Volume	Volume Heat Release	Heat Release Fuel		Temperature
	(ft)3	(BTU/hr)	Type	BTU/hr	(OF)
Primary Chamber					
Secondary Chamber					. •
Stack Height:		. ft. Stack Diameter .	•	Stack Ter	np
Gas Flow Rate:		ACFM		DSCFM* Velocity	/ FPS
•If 50 or more tons per cess air.	day design capa	city, submit the emissi	ons rate in grains p	per standard cubic foo	ot dry gas corrected to 50% ex
Type of pollution contro	I device: [] C	Cyclone [ ] Wet Scrub	ber [] Afterbu	rner [ ] Other (spe	ecify)
Brief description of opera	stino characterisi	tics of control devices:			
Brief description of opera	ating characterist	tics of control devices: _	•		
Brief description of opera	ating characterist	tics of control devices: _	•		<del>-</del>
Brief description of opera	ating characterist	tics of control devices: _	•		
Brief description of opera	ating characterist	tics of control devices: _	•		
Brief description of opera	ating characterist	tics of control devices: _	•		
			•		
			•		
			•		
Ultimate disposal of any			•		

#### SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

- 1. Total process input rate and product weight show derivation.
- 2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
- 3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
- 4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
- 5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
- 6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
- 7. An 8%" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
- 8. An 8%" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

#### SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

n/a

Contaminant		•	Rate or Concentration
•			<del></del>
<del></del>		•	
			<del> </del>
Has EPA declared the best available contro	•		ves, attach copy) [ ] Yes [ ] No
Contaminant			Rate or Concentration
			•
	· .		
What emission levels do you propose as be	st available control tec	hnology?	
Contaminant			Rate or Concentration
	<del></del>		
•			
•			
Describe the existing control and treatmen	t technology (if any).		
	t technology (if any).		
Describe the existing control and treatmen	t technology (if any).		
Describe the existing control and treatmen  1. Control Device/System:	٠.	Capital Costs:	
Describe the existing control and treatmen  1. Control Device/System:  2. Operating Principles:	4. (	Capital Costs: Operating Costs:	
Describe the existing control and treatmen  1. Control Device/System:  2. Operating Principles:  3. Efficiency: *	4. C		
Describe the existing control and treatmen  1. Control Device/System:  2. Operating Principles:  3. Efficiency:  5. Useful Life:	4. C	perating Costs:	
Describe the existing control and treatmen  1. Control Device/System:  2. Operating Principles:  3. Efficiency: *  5. Useful Life:  7. Energy:	4. C	perating Costs:	Rate or Concentration
Describe the existing control and treatment.  1. Control Device/System:  2. Operating Principles:  3. Efficiency: *  5. Useful Life:  7. Energy:  9. Emissions:	4. C	perating Costs:	Rate or Concentration

<sup>\*</sup>Explain method of determining D 3 above.

·, 10. 0.	ack raiding (cis			•
<b>a.</b>	Height:	ft.	b.	Diameter:
c.	Flow Rate:	ACFM	d.	Temperature:
е.	Velocity:	FPS	•	•
Describ	pe the control and treatment tech	nology available (As r	many	types as applicable, use additional pages if necessary).
1.				
a.	Control Device:			
b.	Operating Principles:			
c.	Efficiency*:		d.	Capital Cost:
e.	Useful Life:		f.	Operating Cost:
g.	Energy *:		h.	Maintenance Cost:
i.	Availability of construction ma	aterials and process ch	emic	als:
	•			
j.	Applicability to manufacturing	processes:		·
k.	Ability to construct with contr	ol device, install in av	ailab	le space, and operate within proposed levels:
2.				•
a.	Control Device:			
b.	Operating Principles:			·
. c.	Efficiency*:	•	d.	Capital Cost:
e.	Useful Life:		f.	Operating Cost:
g.	Energy **:		h.	Maintenance Costs:
i.	Availability of construction ma	aterials and process ch	emic	als:
j.	Applicability to manufacturing	-		
k.	Ability to construct with contr	rol device, install in av	ailab	le space, and operate within proposed levels:
	ethod of determining efficiency.			•
	be reported in units of electrical	power – KWH design	rate	
3.				
a.	Control Device:			
<b>b.</b>	Operating Principles:			
·	•			
C.	Efficiency*:		d.	Capital Cost:
8.	Life:		f,	Operating Cost:
q.	Energy:		te.	Maintenance Cost:

0F

E.

<sup>\*</sup>Explain method of determining efficiency above.

,	i. Ava	ailability of construction materials and proce	ess chemic	als:
j	j. Apı	plicability to manufacturing processes:		·
1	k. Abi	ility to construct with control device, install	in availab	le space and operate within proposed levels:
4.				
i	a. Cor	ntrol Device		
!	b. Ope	erating Principles:		
	c. Effi	iciency*:	d.	Capital Cost:
•	e. Life	e:	f.	Operating Cost:
9	g. Ene	ergy:	h.	Maintenance Cost:
·i	i. Ava	ailability of construction materials and proce	ss chemic	als:
j	j. App	plicability to manufacturing processes:		
1	k. Abi	ility to construct with control device, install	in availab	le space, and operate within proposed levels:
. Desc	ribe the	control technology selected:		
1.	Control	Device:		•
2.	Efficien	cy*:	3.	Capital Cost:
4.	Life:		5.	Operating Cost:
6.	Energy:	·	7	Maintenance Cost:
8.	Manufad	cturer:		
9.	Other lo	ocations where employed on similar processe	s:	•
;	a.			
	(1)	Company:		
	(2)	Mailing Address:		
	(3)	City:	(4)	State:
	(5)	Environmental Manager:		
	(6)	Telephone No.:		
*Explain	method	of determining efficiency above.		•
	(7)	Emissions*:		
		Contaminant	,	Rate or Concentration
	<del></del>	<del>-</del>	<del></del>	
	(8)	Process Rate*:		
	b.			
	(1)	Company:		•
	(2)	Mailing Address:		•
	(3)	City:	(4)	State:
'Applican		·	ould this i	information not be available, applicant must state the reason(s)

F.

Contaminant	Rate or Concentration
	• • • • • • • • • • • • • • • • • • •

Environmental Manager:

(5)

<sup>\*</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

#### SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

n/a

Λ.	Company Monitored Data			· ·
	1 no sites	TSP	( ) so <sup>2</sup> *	Wind spd/dir
	Period of monitoring	/ /	_ to/_/	<del></del>
	month	ı day year	month day y	ear
	Other data recorded		· · · · · · · · · · · · · · · · · · ·	
	Attach all data or statistical summarie	es to this applicati	ion.	·
	2. Instrumentation, Field and Laborator	·Y		•
	a) Was instrumentation EPA refere	enced or its equiv	alent? Yes	No
	b) Was instrumentation calibrated	in accordance wit	th Department procedure	s?YesNoUnknown
В.	Meteorological Data Used for Air Quality	v Modeling		
	·	•	to / /	
	1 Year(s) of data frommonth	n day year	month day y	ear
	2. Surface data obtained from (location)	)	•	
	3. Upper air (mixing height) data obtain	ed from (location	n)	<u> </u>
	4. Stability wind rose (STAR) data obta	ined from (location	on)	••
C.	Computer Models Used			
•	·		•	Modified? If yes, attach description.
	•			Modified? If yes, attach description.
				·
				Modified? If yes, attach description.
				Modified? If yes, attach description.
	Attach copies of all final model runs sho	wing input data,	receptor locations, and pr	inciple output tables.
D.	Applicants Maximum Allowable Emissio	n Data		•
	Pollutant		Emissi	on Rate
	TSP			grams/sec
	so <sup>2</sup>		•	grams/sec
E.	Emission Data Used in Modeling			
	Attach list of emission sources. Emissio			n on point source (on NEDS point number)

- Attach all other information supportive to the PSD review.
- \*Specify bubbler (B) or continuous (C).
- Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology. H.

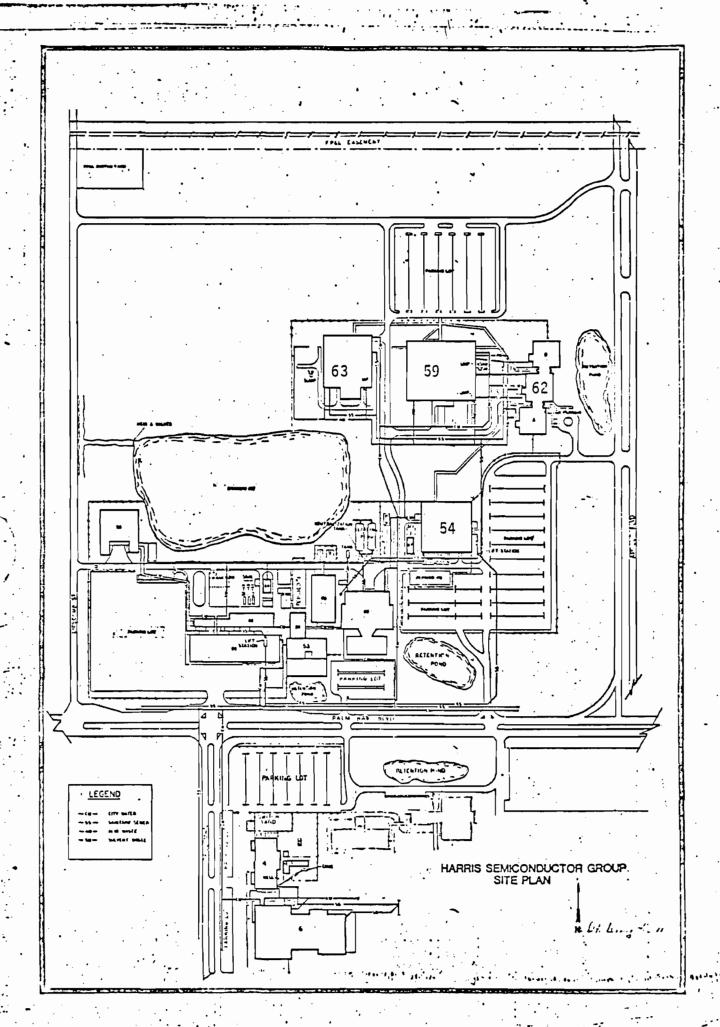
# ATTACHMENT A HARRIS SEMICONDUCTOR EXHAUST SCRUBBER - BUILDING 59

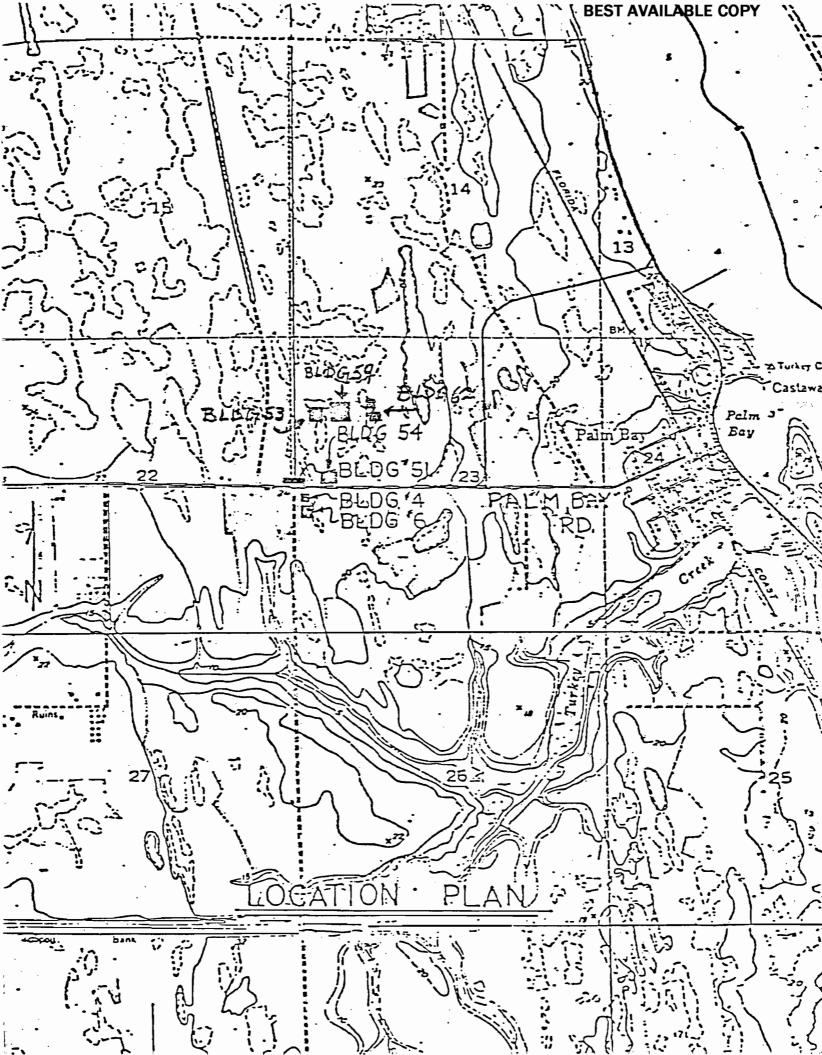
SYSTEM 1 SOLVENTS

RAW	UTILIZATION	EMISS	ION	POTENTIA	L EMISSION
MATERIAL	RATE 1b/hr	MAXIMUM 16/hr	ACTUAL ton/yr	1b/hr	ton/yr
Acetone	34.01	0.023	0.073	0.154	0.049
Methanol	1.56	0.149	0.473	0.995	3.15
Trichloroethylem	6.9	0.049	0.156	0.469	1.487
Xylene	1.71	0.101	0.320	0.672	2.128
Propanol	35.03°	0.028	. 0.090	0.186	0.590
Butyl Acetate	12.80	0.025	0.081	0.170	0.538
Freon	.27	0.017	0.054	0.113	0.359
Photoresist	3.27	0.18	0.570	1.2	3.802
Microstrip contial	42.47	0.132	0.420	0.876	2.799
		4			
		,			
		·			
				·	

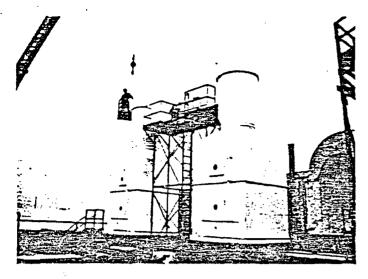
DDS-2/10/82

**BEST AVAILABLE COPY** BUILDING 59 SOLVENT EXHAUST STSTEM ATTACHMENT B C-2 [ WETSCRUBBER 18-A-1 ACIGNMENT ~zo4 COAT STORAGE





#### **BEST AVAILABLE COPY**



#### AIR POLLUTION CONTROL EQUIPMENT

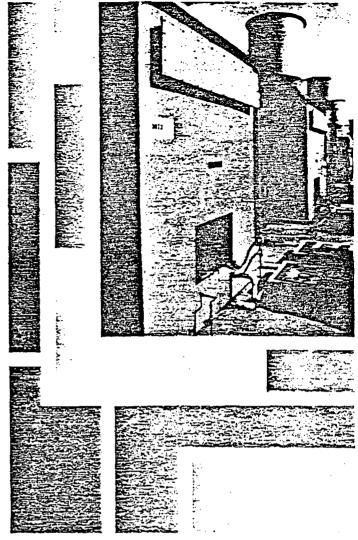
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

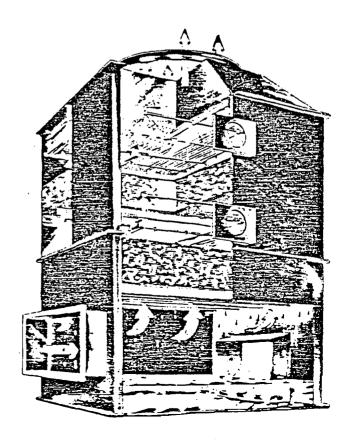
Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.



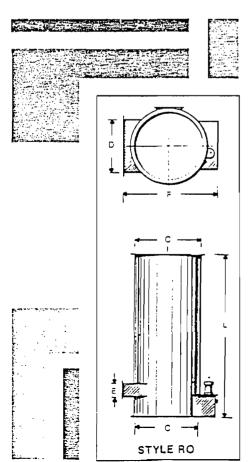
Beverly Pacific's Packed Scrubbers are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.

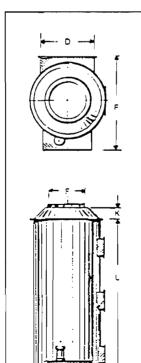
Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.



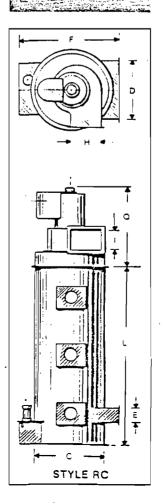


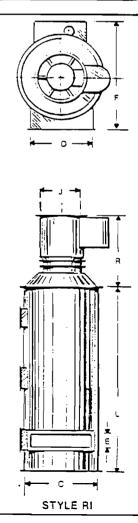
			PACK		JBBER DI MODEL N IENSIONS	UMBERS	ONAL CH	ART		
REVENUE AND A SECOND ASSECTION ASS	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
Α	78	82	84	94	101	108	112	114	118	118
8	24	36	42	48	60	72	84	96	108	120
С	28	40	48	58	72	84	96	108	120	136
O	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	. 42	- 54	60	66	78	90	102	114	126	138
Н	13%	16%	221/2	261/4	291/2	351/4	39	471/4	52%	63%
ı	10%	12%	17	201/2	22¾	27	30	371/2	40%	49¾
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	- 16	19	20	24	24
L	84	87	89	104	112	118	122	124	128	128
М	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
0	38	52	58	65	79	91	106	119	131	145
Р	14	16 .	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	. 132
WHEEL DIA.	121/4	15	20	241/2	27	33	361/2	441/2	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC. GPM MAKE-UP GPM	7 0.7	15 1.5	25 2.0	35 3.0	45 4.0	75 7.0	105 10.0	135 13.0	175 17.0	225 22.0
HT OP. WT. HT SHIP WT.	388 220	745 385	1110 550	1570 770	2690 1210	4085 1925	5670 2750	7595 3795	11790 5390	16040 7040
VT OP. WT. VT SHIP WT.	318 150	660 300	1060 500	1500 700	2630 1150	3910 1750	5470 2550	7400 3600	11650 5250	15800 6800



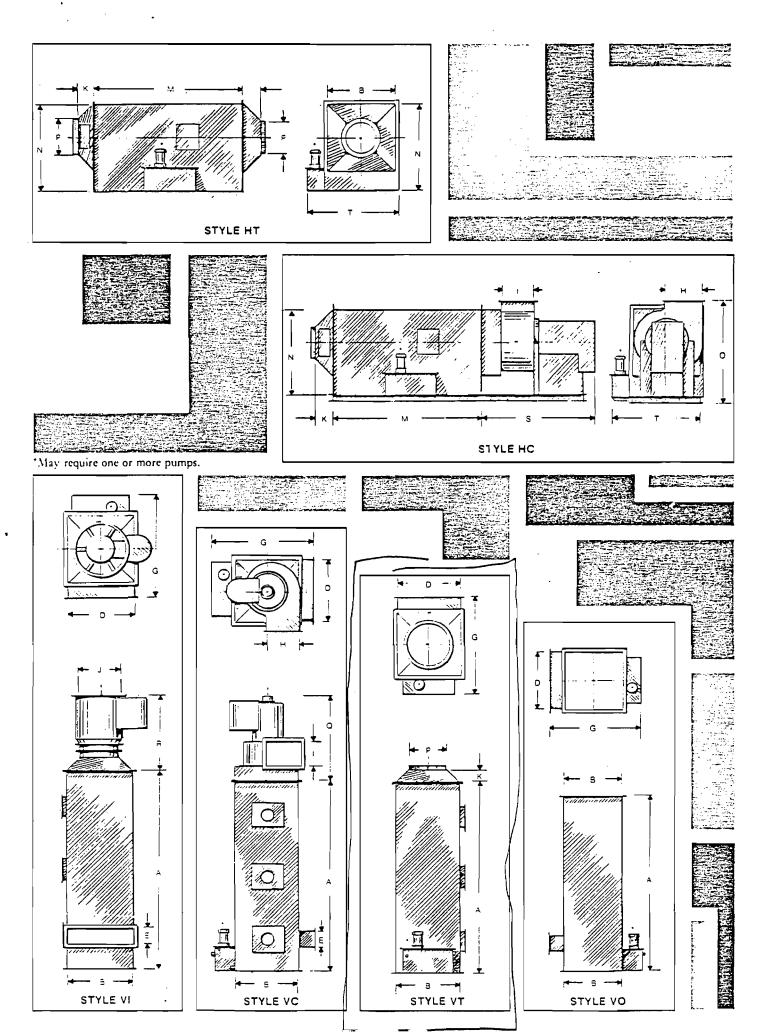


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#### COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

#### SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

#### SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

#### ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

#### CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

#### OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

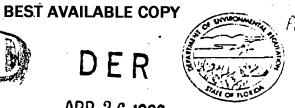
pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54991



APR 21 1982

SAINT JOHNS RIVER DISTRICT



APR 26 1982 STATE OF FLORIDA
DEPARTMENT OF ENVIRONMENTAL REGULATION BAQUATION TO OPERATE/CONSTRUCT

, ,		•.1	18 10 6	_	
		51611	16 19 20 App 199		
ON T	1 6 S	Olar Die	EIVEL BEL		
		TVIC SE			J.
g¹					

SOL	JRCE TYPE: Stationary	[X] New <sup>1</sup> [ ] Existing	1
	PLICATION TYPE: [X] Construction [ ] Operation	[ .] Modification	
CON	MPANY NAME: Harris Semiconductor		_ COUNTY: Brevard
	ntify the specific emission point source(s) addressed in to 2. Gas Fired) Building 59 Acid Vapor Exhaus	his application (i.e. Lime Kiln N it Scrubber (FS-59-2)	lo. 4 with Venturi Scrubber; Peeking Unit
	JRCE LOCATION: Street Palm Bay Road		
	UTM: East _17-538700		· · · · · · · · · · · · · · · · · · ·
	Latitude 28 o 01 · 20		
ADD	PLICANT NAME AND TITLE: P.R. Bumgarner,	-	
	PLICANT ADDRESS: PT-030 Box 883, Melbour		•
APP	FLICANT ADDRESS: 11 GG BOX GGG TETBOUT	1103 12 32301	
	SECTION I: STATEMEN	TS BY APPLICANT AND ENG	INEER
A.	APPLICANT		
-	I am the undersigned owner or authorized representative	,e• of Harris Semicondu	ctor
	I certify that the statements made in this application for permit are true, correct and complete to the bast of	construction	
	permit are true, correct and complete to the best of pollution control source and pollution control facility. Florida Statutes, and all the rules and regulations of granted by the department, will be non-transferable as permitted establishment.	the department and revisions the	tiply with the provision of Chapter 403, ereof. I also understand that a permit, if
•At	tach letter of authorization	Signed:	2) um Painer
			Mgr. Facilities Engineering
	•		and Title (Please Type)  Telephone No.724-7657
	•	Date:	_ Telephone No. 24-7007
8.	PROFESSIONAL ENGINEER REGISTERED IN FLO	RIDA (where required by Chapt	er 471, F.S.)
	This is to certify that the engineering features of this pole in conformity with modern engineering principles permit application. There is reasonable assurance, in rerly maintained and operated, will discharge an effluer rules and regulations of the department. It is also agrecant a set of instructions for the proper maintenance assources.	applicable to the treatment and my professional judgment, that that that complies with all applicable that the undersigned will furned operation of the pollution countries.	disposal of pollutants characterized in the ne pollution control facilities, when prob- ple statutes of the State of Florida and the lish, if authorized by the owner, the appli-
	•	Chester C. Bac	<u> </u>
	(Affix Seal)	Harris Semicon	lame (Please Type) ductor
			any Name (Please Type)
			Melbourne, FL 32901
	Florida Recistration No. 19/10	Mailin Date: 2/22/82	g Address (Please Type)
	Florida Registration No	Date:	Telephone No
	•	•	

# SECTION II: GENERAL PROJECT INFORMATION

Describe the nature and extent of the project. Refer to pollution control equipment, and extended formance as a result of installation. State whether the project will result in full compliance. At	ttach additional sheet if necessary.
Building 59 will utilize laboratory hood type work stations t	
conditions for the manufacture of semiconductors, all chemica	
1-2 gallon containers in which the devices are immersed. Ves	
to exhaust air is minimal. Air is exhausted via a 40.000CFM f factored by BEVERLY PACIFIC. Schedule of project covered in this application (Construction Permit Application Only)	ume scrubber manu-
Start of Construction5-1-82 Completion of Construction	9-1-82
Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for project serving pollution control purposes. Information on actual costs shall be furnished permit.)	with the application for operation
Fan/Wet Scrubber \$31,300.00	
Indicate any previous DER permits, orders and notices associated with the emission point, in tion dates.  Building 59 is new construction approximately 1000 ft. from b	
current operating permits.	arraing or wireir has
Is this application associated with or part of a Development of Regional Impact (DRI) pursuar and Chapter 22F-2, Florida Administrative Code? Yes _X No  Normal equipment operating time: hrs/day24; days/wk7; wks/yr52  if seasonal, describe:	
If this is a new source or major modification, answer the following questions. (Yes or No)	
1. Is this source in a non-attainment area for a particular pollutant?	no
	no
a. If yes, has "offset" been applied?	
b. If yes, has "Lowest Achievable Emission Rate" been applied?	
b. If yes, has "Lowest Achievable Emission Rate" been applied?	
<ul> <li>b. If yes, has "Lowest Achievable Emission Rate" been applied?</li> <li>c. If yes, list non-attainment pollutants.</li> <li>2. Does best available control technology (BACT) apply to this source? If yes, see</li> </ul>	
<ul> <li>b. If yes, has "Lowest Achievable Emission Rate" been applied?</li> <li>c. If yes, list non-attainment pollutants.</li> <li>2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.</li> <li>3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements</li> </ul>	

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

DER FORM 17-1, 122(16) Page 2 of 10

#### SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

#### A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Conta	minants	Utilization	Palas as Els a Di	
	Type	% Wt	Rate - lbs/hr	Relate to Flow Diagram	
See Attachment A				See Attachment B	

B. Process Rate, if applicable: (	See Section V, Item 1	)
-----------------------------------	-----------------------	---

1. Total Process Input Rate (lbs/hr): \_\_\_n/a

2. Product Weight (lbs/hr): \_\_\_ Semiconductor wafer is 12 gms

#### C. Airborne Contaminants Emitted:

	Emiss	Emission <sup>1</sup> Allowed		Allowable <sup>3</sup>	Potential	Emission <sup>4</sup>	Relate
Name of Contaminant	Maximum lbs/hr	Actual T/yr	Rate per Ch. 17-2, F.A.C.	Emission lbs/hr	lbs/hr	T/yr	to Flow Diagram
See AttachmentA			n/a	n/a			See Attachment
			· · · · · · · · · · · · · · · · · · ·			<del>-</del>	
		1					

#### D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup>
Beverly Pacific Corp.	Acid mist	95%	n/a	Mfg. design
Model #PS40 HT/CB49	,			Data

<sup>1</sup>See Section V, Item 2.

<sup>&</sup>lt;sup>2</sup>Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

<sup>&</sup>lt;sup>3</sup>Calculated from operating rate and applicable standard

<sup>&</sup>lt;sup>4</sup>Emission, if source operated without control (See Section V, Item 3)

<sup>51</sup>f Applicable

E.	Fueis	n/	ā

Туре	Type (Be Specific)		Consumption*			Maximum Heat Input	
	(Be Specific)		avg/hr	max	/hr	(MMBTU)	/hr)
						<del></del>	
						<del></del>	
Units Natural Gas,	MMCF/hr; Fuel (	Oils, barrels/hr;	Coal, lbs/hr				
uel Analysis:				•			
ercent Sulfur:	·			Percent Ash:		· ·	•
ensity:							
eat Capacity:							
ther Fuel Contami							
		,					
. If applicable,	ndicate the perce	ent of fuel used	for enace heati	na Annual Ave	rage	Maximum	
·					age	· WidXIIIOIII	
	or solid wastes g						
Scrubber	water disc	harged to i	industrial	wastewater	treatment fa	cility.	
	_		· .		,		
<del></del> -							
ł. Emission Staci	· Commercian	Flow Character					
i. Emission Staci	C Geometry and			1949 40 <i>0</i> 0000 <i>2</i> 490	U)•		
Canala Uniahaa				lata for each stac			
Stack Height:	3!	5' 0"	ft.	Stack Diameter	: 3' 8"		
Gas Flow Rat	39,000/40	5' 0" 0,000	ft.	Stack Diameter Gas Exit Tempe	: 3' 8" erature: 74		o <sub>f</sub>
Gas Flow Rat	39,000/40	5' 0" 0,000	ft.	Stack Diameter Gas Exit Tempe	: 3' 8"		o <sub>f</sub>
Gas Flow Rat	39,000/40	5' 0" 0,000	ft.	Stack Diameter Gas Exit Tempe	: 3' 8" erature: 74		o <sub>f</sub>
Gas Flow Rat	39,000/40	0,000	ft. ACFM %	Stack Diameter Gas Exit Tempe Velocity:	: 3' 8" erature: 74 500		o <sub>f</sub>
Gas Flow Rat	39,000/40	0,000	ft. ACFM %	Stack Diameter Gas Exit Tempe	: 3' 8" erature: 74 500		o
Gas Flow Rat	39,000/40	0,000	ft. ACFM %	Stack Diameter Gas Exit Tempe Velocity:	: 3' 8" erature: 74 500		o <sub>f</sub>
Gas Flow Rat	39 e: 30,000/40 Content: 1	5' 0" 0,000 SECTION	ftACFM% IV: INCINERn/aType II	Stack Diameter Gas Exit Tempe Velocity:	: 3' 8" erature: 74 500 ATION	Type V	o <sub>f</sub>
Gas Flow Rat	3! e: 30,000/40 Content: 1	5' 0" 0,000 section	ftACFM % IV: INCINER	Stack Diameter Gas Exit Tempe Velocity:	: 3' 8" erature: 74 500 ATION		FP
Gas Flow Rat Water Vapor C	39 e: 30,000/40 Content: 1	5' 0" 0,000 SECTION	ftACFM% IV: INCINERn/aType II	Stack Diameter Gas Exit Tempe Velocity:	: 3' 8" erature: 74 500 ATION	Type V (Liq & Gas	Type VI (Solid
Gas Flow Rat Water Vapor C	39 e: 30,000/40 Content: 1	5' 0" 0,000 SECTION	ftACFM% IV: INCINERn/aType II	Stack Diameter Gas Exit Tempe Velocity:	: 3' 8" erature: 74 500 ATION	Type V (Liq & Gas	Type VI (Solid
Gas Flow Rat Water Vapor C	39 e: 30,000/40 Content: 1	5' 0" 0,000 SECTION	ftACFM% IV: INCINERn/aType II	Stack Diameter Gas Exit Tempe Velocity:	: 3' 8" erature: 74 500 ATION	Type V (Liq & Gas	Type VI (Solid
Gas Flow Rat Water Vapor C  Type of Waste  Lbs/hr Incinerated	39. 39. 39. 39. 39. 39. 39. 39. 39. 39.	SECTION Type ! (Rubbish)	ft. ACFM % IV: INCINER n/a Type II (Refuse)	Stack Diameter Gas Exit Tempe Velocity:	: 3' 8" erature: 74 500 ATION	Type V (Liq & Gas	Type VI (Solid
Gas Flow Rat Water Vapor C  Type of Waste  Lbs/hr Incinerated	39	SECTION Type I (Rubbish)	ft. ACFM % IV: INCINER n/a Type II (Refuse)	Stack Diameter Gas Exit Tempe Velocity:  ATOR INFORM  Type III (Garbage)	erature: 74 500  ATION  Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Gas Flow Rat Water Vapor C  Type of Waste  Lbs/hr Incinerated  Description of Waste  Cotal Weight Incine	39. 39. 39. 39. 39. 39. 39. 39. 39. 39.	SECTION Type I (Rubbish)	ft. ACFM % I IV: INCINER n/a Type II (Refuse)	Stack Diameter Gas Exit Tempe Velocity:  ATOR INFORM  Type III (Garbage)  Design Capacity	erature: 74 500  ATION  Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Gas Flow Rate Water Vapor C  Type of Waste Lbs/hr Incinerated Description of Waste Total Weight Incine	Type O (Plastics)  Type O (Plastics)  rated (lbs/hr) — er of Hours of O	SECTION Type I (Rubbish)	ftACFM% IV: INCINERn/aType II (Refuse)	Stack Diameter Gas Exit Tempe Velocity:  ATOR INFORM  Type III (Garbage)  Design Capacity	erature: 74 500  ATION  Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Gas Flow Rat	Type O (Plastics)  rated (lbs/hr) — er of Hours of O	SECTION Type I (Rubbish)	ftACFM%  IV: INCINER n/a Type II (Refuse)	Stack Diameter Gas Exit Tempe Velocity:  ATOR INFORM  Type III (Garbage)  Design Capacity	erature: 74 500  ATION  Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)

· ·	Volume			Fuel	Temperature
	(ft)3	(BTU/hr)	Type	BTU/hr	(°F)
Primary Chamber					
Secondary Chamber					
Stack Height:		ft. Stack Diameter		Stack Ter	mp,
Gas Flow Rate:		ACFM	-	DSCFM* Velocity	FPS
*If 50 or more tons per o	fay design capa	city, submit the emissi	ions rate in grains	per standard cubic foc	ot dry gas corrected to 50% ex-
Type of pollution control	device: [ ] C	yclone [ ] Wet Scru	bber [ ] Afterb	urner [ ] Other (spe	ecify)
Brief description of operat	ting characterist	ics of control devices:	<u> </u>		
			•		
			-	· · · · · · · · · · · ·	
	_				
Ultimate disposal of any e	ffluent other th	an that emitted from t	he stack (scrubber	water, ash, etc.):	
		•			

#### SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

- 1. Total process input rate and product weight show derivation.
- 2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
- 3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
- 4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
- 5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
- 6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
- 7. An 8%" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
- 8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

#### SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

n/a

Contaminant	Rate or Concentration				
Has EPA declared the best available control tech	anology for this class of sources (If yes, attach copy) [ ] Yes [ ] No				
Contaminant	Rate or Concentration				
What emission levels do you propose as best avai	ilable control technology?				
Contaminant	Rate or Concentration				
Describe the existing control and treatment tech	nnology (if any).				
1. Control Device/System:					
2. Operating Principles:					
3. Efficiency: *	4. Capital Costs:				
5. Useful Life:	6. Operating Costs:				
7. Energy:	8. Maintenance Cost:				
9. Emissions:					
Contaminant	. Rate or Concentration				

<sup>\*</sup>Explain method of determining D 3 above.

• ;	10. Sta	ck Parameters				,
	a.	Height:	ft.	b.	Diameter:	
	Ç.	Flow Rate:	ACFM	d.	Temperature:	
•	e.	Velocity:	FPS	,		
E.	Describ	e the control and treatment tech	nology available (As	many	types as applicable, use additional pages if necessa	'y)
	1.					
	a.	Control Device:				
	b.	Operating Principles:				
		•				
	c.	Efficiency*:		d.	Capital Cost:	
	e.	Useful Life:	·	. f. ·	Operating Cost:	
	g.	Energy*:		h.	Maintenance Cost:	•
	i.	Availability of construction ma	iterials and process ch	emic	als:	
	j.	Applicability to manufacturing	processes:	•		
	k.	Ability to construct with contr	ol device, install in av	railab	le space, and operate within proposed levels:	
	2.					
	<b>a.</b> .	Control Device:				
	b.	Operating Principles:				
	C.	Efficiency*:		d.	Capital Cost:	
	e.	Useful Life:		<b>f.</b>	Operating Cost:	
	9.	Energy **:		h.	Maintenance Costs:	
	i.	Availability of construction ma	aterials and process ch	nemic	als:	
	j.	Applicability to manufacturing	processes:			
	k.	Ability to construct with conti	ol device, install in a	vailab	le space, and operate within proposed levels:	
*F.	rolain me	ethod of determining efficiency.				
		be reported in units of electrical	power - KWH design	rate.		
	3.		,			
	<b>a</b> .	Control Device:				
	b.	Operating Principles:				
					•	
	c	Efficiency*:		d.	Capital Cost:	
	e.	Life:	•	f.	Operating Cost:	
	g.	Energy:	•	h.	Maintenance Cost:	

ft. °F

<sup>\*</sup>Explain method of determining efficiency above.

n materials and process ring processes:	d. f. h. s chemic	ole space, and operate within proposed levels:  Capital Cost:  Operating Cost:
n materials and process ring processes: ontrol device, install in	d. f. h. s chemic n availab	Capital Cost: Operating Cost: Maintenance Cost: cals:  Ole space, and operate within proposed levels:  Capital Cost: Operating Cost:
ring processes: ontrol device, install in	f. h. s chemic n availab	Operating Cost:  Maintenance Cost:  cals:  ole space, and operate within proposed levels:  Capital Cost:  Operating Cost:
ring processes: ontrol device, install in	f. h. s chemic n availab	Operating Cost:  Maintenance Cost:  cals:  ole space, and operate within proposed levels:  Capital Cost:  Operating Cost:
ring processes: ontrol device, install in	f. h. s chemic n availab	Operating Cost:  Maintenance Cost:  cals:  ole space, and operate within proposed levels:  Capital Cost:  Operating Cost:
ring processes: ontrol device, install in	f. h. s chemic n availab	Operating Cost:  Maintenance Cost:  cals:  ole space, and operate within proposed levels:  Capital Cost:  Operating Cost:
ring processes: ontrol device, install in	h. s chemic n availab 3. 5.	Maintenance Cost: cals: cals: cals: Capital Cost: Operating Cost:
ring processes: ontrol device, install in	s chemic n availab 3. 5.	cals:  ole space, and operate within proposed levels:  Capital Cost:  Operating Cost:
ring processes: ontrol device, install in	availab 3. 5.	ole space, and operate within proposed levels:  Capital Cost:  Operating Cost:
ontrol device, install in	3. 5.	Capital Cost: Operating Cost:
• •	3. 5.	Capital Cost: Operating Cost:
ected:	5.	Operating Cost:
	5.	Operating Cost:
	5.	Operating Cost:
	7.	Maintenana Cast
		Maintenance Cost:
		,
d on similar processes:		
•		
	(4)	State:
ger:	, ,	
•	٠,	
cv above.		
<b>-, -</b>		
•		Rate or Concentration
•		
	_	
•		
		State:
	ger: cy above.	d on similar processes:  (4) ger:  t

F.

(6) Telephone No.: (7) Emissions*:	·
Contaminant	Rate or Concentration
<u> </u>	
(8) Process Rate*:  10. Reason for selection and description of systems:	

<sup>\*</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

#### SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

n/a

A.	Company Monitored Data	•	., u		•
	1 no sites	TSP	( ) so <sup>2</sup> *	Wind spd/dir	•
	Period of monitoring	month day year	to / / month day	Vear	
	Other data recorded	- •	•	•	·
	Attach all data or statistical su	immaries to this applicati	ion.		
	2. Instrumentation, Field and La	boratory			
	a) Was instrumentation EP	A referenced or its equiv	alent? Yes	No	
	b) Was instrumentation cal	ibrated in accordance wi	th Department procedur	es?Yes	No Unknown
В.	Meteorological Data Used for Air	Quality Modeling			•.
	1 Year(s) of data from	<u>/ /</u>	to //		
	2. Surface data obtained from (1)		• •		
	3. Upper air (mixing height) data				
_	4. Stability wind rose (STAR) da	ita ootained from (locatio			
C.	Computer Models Used  1			Modified?	If you attach description
	2				
					If yes, attach description.
	Attach copies of all final model r				
D.	Applicants Maximum Allowable		, occupant (occupant) and p		_
•	Polluta		Emis	sion Rate	
	TSP	•		gra	ıms/sec
	so <sup>2</sup>			gra	
E.	Emission Data Used in Modeling				
	Attach list of emission sources. UTM coordinates, stack data, alle			ion on point source	(on NEDS point number),

Attach all other information supportive to the PSD review.

Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

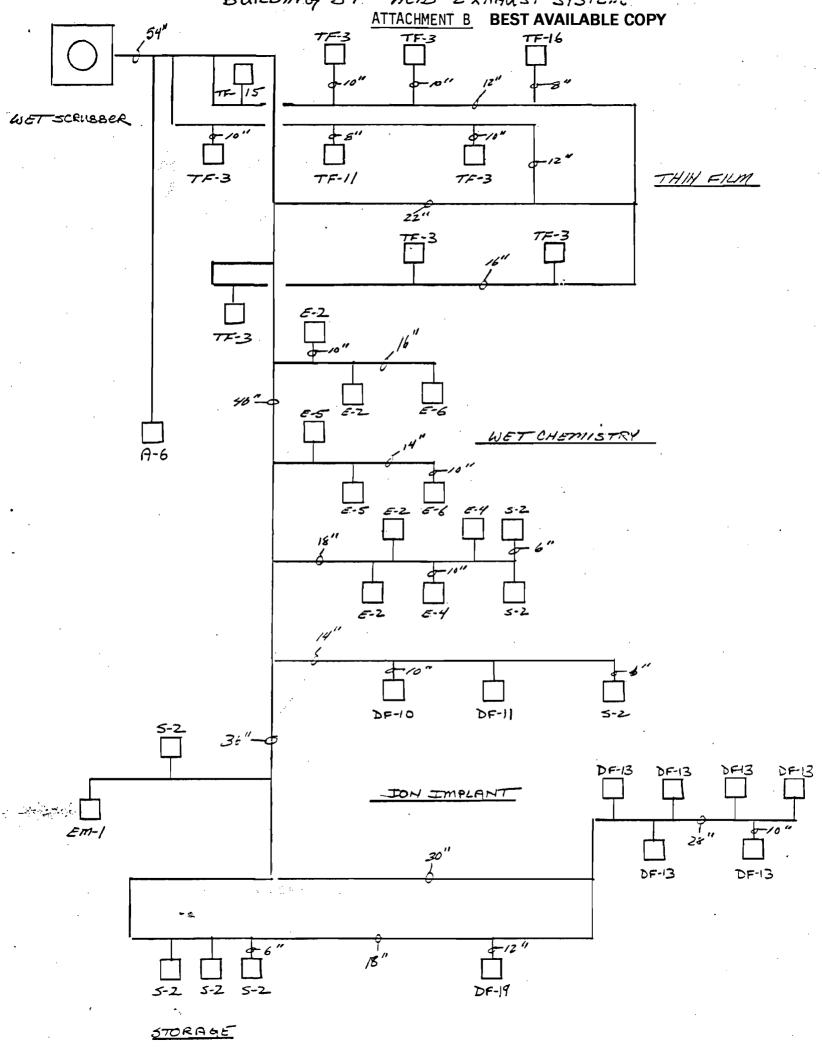
<sup>\*</sup>Specify bubbler (B) or continuous (C).

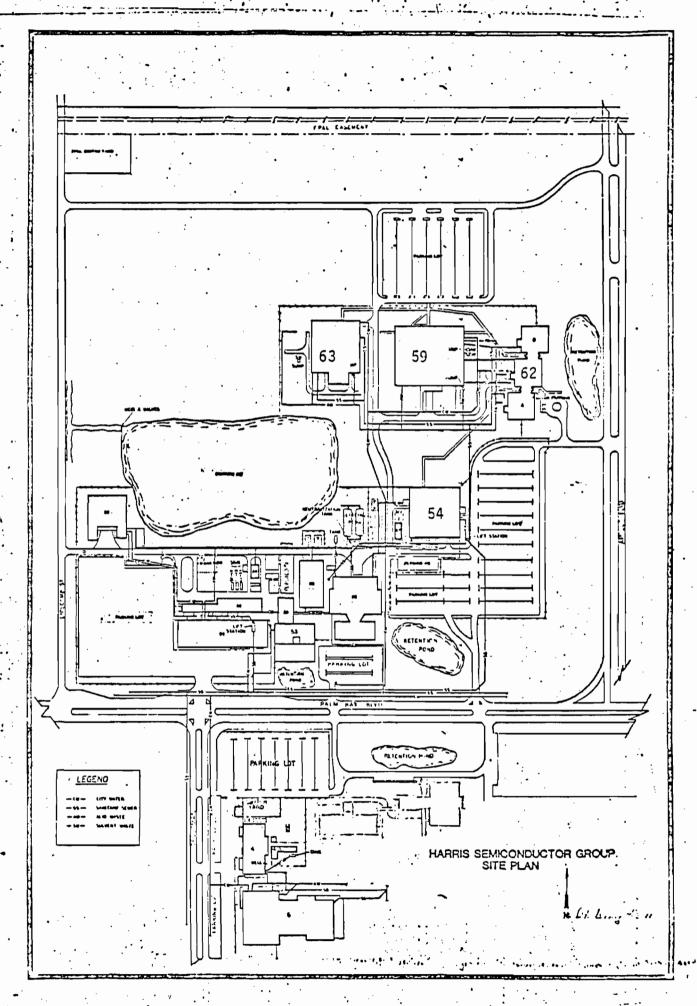
# ATTACHMENT A HARRIS SEMICONDUCTOR EXHAUST SCRUBBER - BUILDING 59

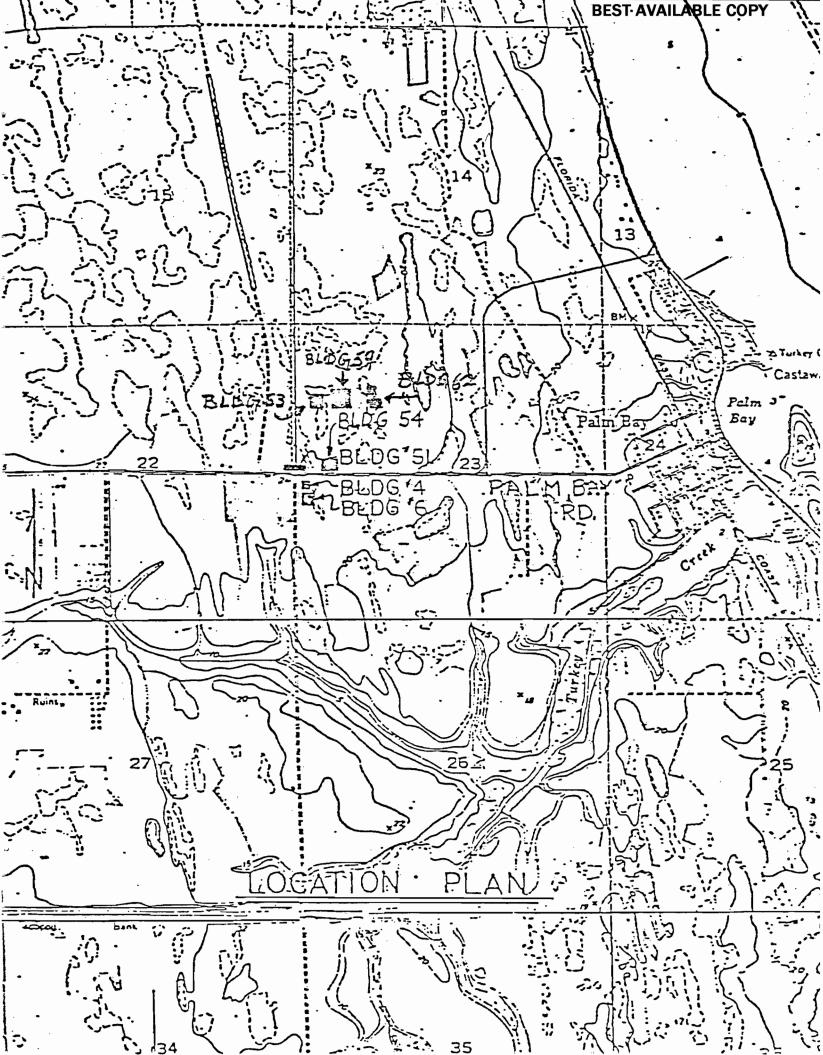
SYSTEM 2 ACID

RAW	UTILIZATION	EMISS	ION	POTENTIAL EMISSION		
MATERIAL	RATE 1b/hr	MAXIMUM 1b/hr	ACTUAL ton/yr	lb/hr	ton/yr	
Acetic Acid	4.18	0.003	0.009	0.060	0.189	
Ammonium Fluoride	14.9	0.014	0.045	0.283	0.897	
Hydrofluoric	17.29	0.007	0.021	0.131	0.414	
Nitric .	26.51	0.009	0.027	0.173	0.548	
Sodium Hydroxide	25.31	. 0.009	0.027	0.173	0.548	
Sulfuric	169.89	0.021	0.067	0.425	1.346	
Hydrochloric	3.86	0.001	0.0032	0.02	0.063	
Phosphoric	21.5	0.007	0.021	0.13	0.412	
."						
		: · : :				
<b></b>		· ·				

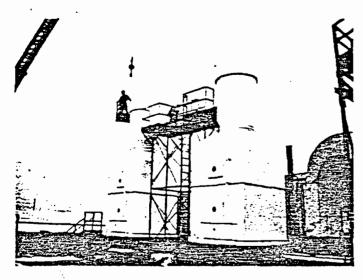
RRS-2/10/82







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#### AIR POLLUTION CONTROL EQUIPMENT

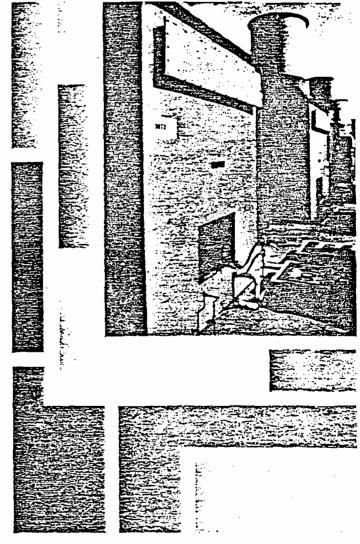
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

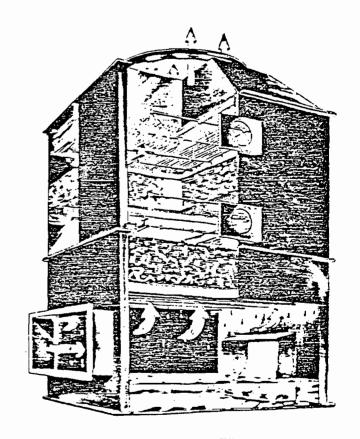
Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.



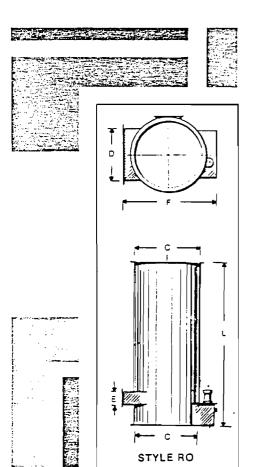
Beverly Pacific's Packed Scrubbers are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.

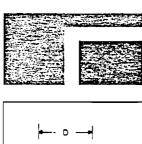
Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.

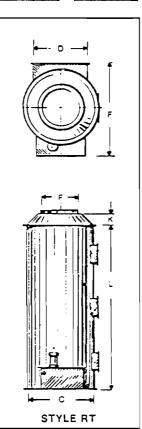


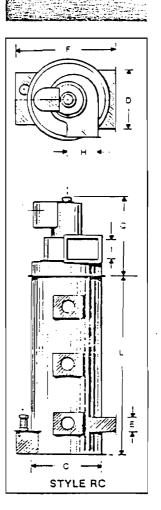


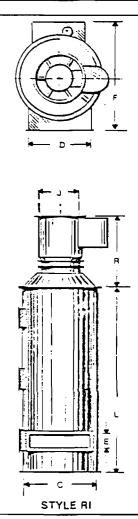
	PACKED SCRUBBER DIMENSIONAL CHART MODEL NUMBERS DIMENSIONS IN INCHES										
and and are	PS-2	PS-4	P\$-6	PS-8	PS-12	PS-18	PS-24	PS-30	( PS-40	PS-50	
A	78	82	84	94	101	108	112	114	118	118	
В	24	· 36	42	48	60	72	84	96	108	120	
С	28	40	48	58	72	84	96	108	120	136	
D	22	34	40	46	58	70	80	92	104	116	
Ε	6	8	10	11	12	16	18	20	24	24	
F	46	58	66 ·	76	90	102	114	126	138	154	
G	42	54	60	66	78	90	102	114	126	138	
Н	13%	16 <del>¾</del>	221/2	261/4	291/2	351/4	39	471/4	52¾	63%	
1	10%	12%	17	201/2	22¾	27	30	371/2	40¾	49¾	
J	18	22	28	34	38	45	50	62	66	80	
K	6	8	10	10	12	16	19	. 20	24	24 .	
Ļ	84	87	89	104	112	118	122	124	128	128	
M	64	64	70	77	89	102	102	102	114	114	
N	35	49	55	62	76	88	103	116	128	142	
0	38	52	58	65	79	9.1	106	119	131	145	
P	14	16	22	26	30	36	42	50	54	66	
Q	45	50	61	64	68	72	78	86	93	103	
R	35	44	55	65	75	85	94	108	120	141	
S	46	52	59	69	72	79	82	97	100	110	
T	36	48	54	60	72	84	96	108	120	132	
WHEEL DIA.	121/4	15	20	241/2	27	33	361/2	441/2	49	60	
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50	
RECIRC. GPM MAKE-UP GPM	7 0.7	15 1.5	25 2.0	35 3.0	45 4.0	75 7.0	105 10.0	135 13.0	175 17.0	225 22.0	
HT OP. WT.	388 220	745 385	1110 550	1570 770	2690 1210	4085 1925	5670 2750	7595 3795	11790 5390	16040 704 <b>0</b>	
VT OP. WT. VT SHIP WT.	318 150	660 300	1060 500	1500 700	2630 1150	3910 1750	5470 2550	7400 3600	11650 5250	15800 6800	

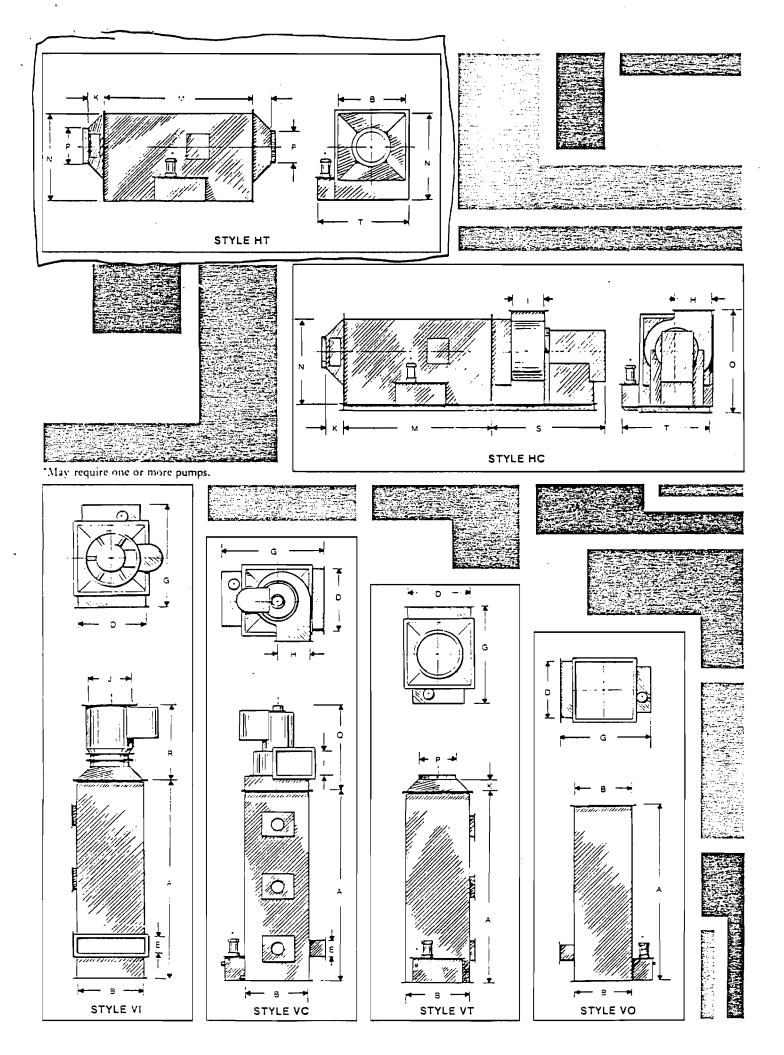












#### COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

#### SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

#### SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

#### ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

#### CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

### OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54992

APR 21 1982

SAINT JOHNS RIVER DISTRICT

# DER

1See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

DER FORM 17-1.122(16) Page 1 of 10

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APR 26 1982 STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGUL

**POLLUTION SOURCES** 

sou	RCE TYPE: Stat	tionary		[X] New	[ ] Existin	01	
		[X] Construction [ ]	•	lodificatio	n		
COM	IPANY NAME: H	arris Semiconduct	tor	<del></del>		_ COUNTY: Bre	vard
lden No. 2	tify the specific emi 2, Gas Fired) <u>Bu</u> i	ission point source(s) ad 1ding 62 Solvent	dressed in this app Vapor Exhaus	lication (i t Scrub	.e. Lime Kiln N ber (FS-62	lo. 4 with Venturi Sc 2A -1)	rubber; Peeking Unit
\$OU	RCE LOCATION:	Street Palm Bay	Road			_ City _ Palm Bay	<u>y</u>
		UTM: East17-53	38700		North	17-3100900	
	•	Latitude 28 o (	01 · 20 "N		Longitud	e <u>80 o 36</u> ,	<u>10</u> ′w
APPI	LICANT NAME AN	O TITLE: P. R. Bun	ngarner, Mana	ger Fac	<u>ilities Er</u>	ngineering	
APPI	LICANT ADDRESS	PT-030 Box 883.	, Melbourne,	FL 3290	1	•	
		SECTION I: :	STATEMENTS BY	APPLICA	NT AND ENG	INEER	
Α.	APPLICANT						
	· · · · <del>-</del> · - · · ·	ed owner or authorized r	representative* of	Harris	Semiconduc	tor	
*Att	permit are true, co pollution control : Florida Statutes, a		the bast of my kn introl facilities in s ulations of the dep	such a ma artment a l prompti Signed:	and belief. Fur inner as to cond revisions the department of the d	mply with the provi ereof. I also underst partment upon sale o	sion of Chapter 403, and that a permit, if r legal transfer of the control of the
		•		Date:	2-22-82	Telephone No. 72	24-7657
В.	PROFESSIONAL	ENGINEER REGISTER	ED IN FLORIDA (	•			
	be in conformity was permit application erly maintained an rules and regulation	nat the engineering feature with modern engineering in There is reasonable asset of operated, will discharge insofthe department. It is called the proper ma	principles applicateurance, in my prof ge an effluent that on the control of the	ble to the fessional ju complies v the under	treatment and udgment, that the vith all applications and will furner pollution control of the p	disposal of pollutant the pollution control ple statutes of the Statish, if authorized by ntrol facilities and, if	s characterized in the facilities, when prop- ite of Florida and the the owner, the appli-
				Signed: _	(Ki2	E CBack	
				Chest	er C. Bach		
	(Affix Seal)				s Semicono Comp Box 883,	Name (Please Type) luctor any Name (Please Ty !lelbourne, FL ag Address (Please Ty	32901
	Florida Registratio	on No. <u>· /9//0</u>		Date:		Telephone No	

#### SECTION II: GENERAL PROJECT INFORMATION

Describe the nature and extent of the project. Refer to pollution control equipment, and exp formance as a result of installation. State whether the project will result in full compliance. At Building 62 will utilize laboratory hood type work stations to	each additional sheet if necessary.
conditions for the manufacture of semiconductors. All chemica	
1-2 gallon containers in which the devices are immersed. Vesse	
exhaust air is minimal. Air is exhausted via A. 12,000 CFM fur by Beverly Pacific. Schedule of project covered in this application (Construction Permit Application Only)	me scrubber manufactured
Start of Construction 5-1-82 Completion of Construction	9-1-82
Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for i project serving pollution control purposes. Information on actual costs shall be furnished upermit.)	ndividual components/units of the with the application for operation
Fan/West Scrubber \$21,000.00	
•	
Indicate any previous DER permits, orders and notices associated with the emission point, incition dates.  Building 62 is new construction located approximated 1000 feet which has current operating permits.	
and Chapter 22F-2, Florida Administrative Code?Yes _XNo  Normal equipment operating time: hrs/day; days/wk; wks/yr	; if power plant, hrs/yr;
If this is a new source or major modification, answer the following questions. (Yes or No)	
Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?	
b. If yes, has "Lowest Achievable Emission Rate" been applied?	no
c. If yes, list non-attainment pollutants.	no
	no.
	no.
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.	no.
Section VI.  3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements	no

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

DER FORM 17-1.122(16) Page 2 of 10

#### SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

#### A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contan	ninants	Utilization	5.1		
Description	Туре	% Wt	Rate - lbs/hr	Relate to Flow Diagram		
See Attachment A				See Attachment B		
·						
· _			_			

В.	Process Rate, if applicable: (See Section V, Item 1)	
	1. Total Process Input Rate (lbs/hr):	n/a

2. Product Weight (lbs/hr): Semiconductor wafer weighs 12 gms.

#### C. Airborne Contaminants Emitted:

	Emiss	ion <sup>1</sup>	Allowed Emission <sup>2</sup>	Allowable <sup>3</sup>	Potential	Emission <sup>4</sup>	Relate
Name of Contaminant	Maximum lbs/hr	Actual T/yr	Rate per Ch. 17-2, F.A.C.	Emission lbs/hr	lbs/hr	T/yr	to Flow Diagram
See Attachment A				n/a			See Attachment
		1					
			,				

#### D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, 11 <sup>5</sup>
Beverly Pacific Corp.	Solvent vapors	85%	n/a	Mfg. Design
Model #PS12 VT/CB27				Data
	i i			

<sup>1</sup>See Section V, Item 2.

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<sup>&</sup>lt;sup>2</sup>Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

<sup>&</sup>lt;sup>3</sup>Calculated from operating rate and applicable standard

<sup>&</sup>lt;sup>4</sup>Emission, if source operated without control (See Section V, Item 3)

<sup>51</sup>f Applicable

E.	Fuels	n/a
	1 0013	III/a

	(Be Specific)		Con	sumption*		Maximum Hea	Maximum Heat Input	
			avg/hr	max.	/hr	(MMBTU)	/hr) ——————	
	······································					<u> </u>		
·			<del></del>	<del></del>				
						· · · · · · · · · · · · · · · · · · ·		
							·	
Inits Natural Gas,	MMCF/hr; Fuel (	Oils, barrels/hr;	Coal, lbs/hr					
el Analysis:				•				
rcent Sulfur:		<del></del>		Percent Ash:			•	
nsity:			_		-			
at Capacity:			BTU/Ib				BTU/9	
her Fuel Contami	nants (which may	cause air pollu	tion):					
If applicable,	indicate the perce	ent of fuel used	for space heating	g. Annual Ave	rage <u>n/a</u>	Maximum .	<u>-</u>	
Indicate liquid	l or solid wastes g	enerated and m	ethod of dispos	al.		•		
Scrubbe	r water disc	charged to	industrial	wastewater	treatment 1	facility.		
Faritain Stan		Flow Change	intina /Drawinland					
Emission Stack Stack Height:	k Geometry and 1				: <u>28"</u>			
-								
	8500/12,00	00						
			ACFM	Gas Exit Tempe	rature: 74		o	
			ACFM	Gas Exit Tempe			o	
			ACFM	Gas Exit Tempe	rature: 74		o	
			ACFM	Gas Exit Tempe Velocity:5	00		o	
			ACFM %	Gas Exit Tempe	00		o	
	Content:1_	SECTION	ACFM % IV: INCINER	Gas Exit Tempe Velocity:5	ATION		o	
Water Vapor C			ACFM %	Gas Exit Tempe Velocity:5	00	Type V {Lig & Gas	Type VI (Solid	
	Type O	SECTION Type I	ACFM % IV: INCINER n/a Type II	Gas Exit Tempe Velocity:5  ATOR INFORM	ATION  Type IV	Type V	Type VI	
Water Vapor C Type of Waste	Type O	SECTION Type I	ACFM % IV: INCINER n/a Type II	Gas Exit Tempe Velocity:5  ATOR INFORM	ATION  Type IV	Type V (Liq & Gas By-prod.)	Type VI (Solid	
Water Vapor C Type of Waste	Type O	SECTION Type I	ACFM % IV: INCINER n/a Type II	Gas Exit Tempe Velocity:5  ATOR INFORM	ATION  Type IV	Type V (Liq & Gas By-prod.)	Type VI (Solid	
Water Vapor C Type of Waste bs/hr ncinerated	Type O (Plastics)	SECTION Type I (Rubbish)	ACFM % IV: INCINER n/a Type II (Refuse)	Gas Exit Tempe Velocity:5  ATOR INFORM  Type III (Garbage)	ATION  Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid	
Water Vapor C Type of Waste bs/hr ncinerated	Type O (Plastics)	SECTION  Type I (Rubbish)	ACFM %  IV: INCINER n/a  Type II (Refuse)	Gas Exit Tempe Velocity:5  ATOR INFORM  Type III (Garbage)	ATION  Type IV (Pathological)	Type V (Liq & Gas By prod.)	Type VI (Solid By-prod.)	
Water Vapor C Type of Waste bs/hr ncinerated scription of Waste tal Weight Incine	Type O (Plastics)	SECTION Type I (Rubbish)	ACFM % IV: INCINER n/a Type II (Refuse)	Gas Exit Tempe Velocity:5  ATOR INFORM  Type III (Garbage)  Design Capacity	Type IV (Pathological)	Type V (Liq & Gas By prod.)	Type VI (Solid By-prod.)	
Water Vapor C Type of Waste bs/hr ncinerated escription of Waste stal Weight Incine	Type O (Plastics)  erated (lbs/hr)	SECTION  Type I (Rubbish)	Type II (Refuse)	Gas Exit Tempe Velocity:5  ATOR INFORM  Type III (Garbage)  Design Capacity	ATION  Type IV (Pathological)	Type V (Liq & Gas By prod.)	Type VI (Solid By-prod.)	
Water Vapor C	Type O (Plastics)  erated (lbs/hr)	SECTION  Type I (Rubbish)	Type II (Refuse)	Gas Exit Tempe Velocity:5  ATOR INFORM  Type III (Garbage)  Design Capacity	ATION  Type IV (Pathological)	Type V (Liq & Gas By prod.)	Type VI (Solid By-prod.)	

	Volume	Heat Release	F	Fuel	Temperature
	(ft) <sup>3</sup>	(BTU/hr)	Type	BTU/hr	(OF)
Primary Chamber			·		
Secondary Chamber			,	·	•
Stack Height:		ft. Stack Diameter _		Stack Tem	p
Gas Flow Rate:		ACFM		_ DSCFM* Velocity	FP
If 50 or more tons per cess air.	day design capac	city, submit the emissi	ons rate in grains p	per standard cubic foot	t dry gas corrected to 50% ex
Type of pollution control	device: [ ] Cy	ycione [ ] Wet Scrub	ber [] Afterbu	rner [ ] Other (spec	cify)
Brief description of opera					
	<del>-</del>				·
Ultimate disposal of any e	iffluent other the	an that emitted from th	ne stack (somither	water ash etc.):	
Orthinate disposar or any e	andent other the	an diat childred from the	ים אומכת (אנוםטטנו	Water, asir, etc.,.	
	<del></del> · · -				
····					

#### **SECTION V: SUPPLEMENTAL REQUIREMENTS**

Please provide the following supplements where required for this application.

- 1. Total process input rate and product weight show derivation.
- 2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
- 3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
- 4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
- 5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
- 6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
- 7. An 8½" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
- 8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

# SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

•	Rate or Concentration
Jac EDA dealered the best sucilable sected tech	and any far abic place of course (15 year attach again). [1] Year [1] No.
Contaminant	nology for this class of sources (If yes, attach copy) [ ] Yes [ ] No  Rate or Concentration
Vhat emission levels do you propose as best ava	
Contaminant	Rate or Concentration
-	
•	
	<del></del>
Describe the existing control and treatment tech	nnology (if any).
Describe the existing control and treatment tech	nnology (if any).
	nnology (if any).
1. Control Device/System:	nnology (if any).  4. Capital Costs:
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> </ol>	
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> </ol>	4. Capital Costs:
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> <li>Useful Life:</li> </ol>	<ul><li>4. Capital Costs:</li><li>6. Operating Costs:</li></ul>
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> <li>Useful Life:</li> <li>Energy:</li> </ol>	<ul><li>4. Capital Costs:</li><li>6. Operating Costs:</li></ul>

<sup>\*</sup>Explain method of determining D 3 above.

, ,	10. Sta	ck Parameters			
•	a.	Height:	ft.	b.	Diameter:
	C.	Flow Rate:	ACFM	d.	Temperature:
•	e.	Velocity:	FPS		•
E.	Describe	e the control and treatment	technology available (As	many	types as applicable, use additional pages if necessary)
	1.				
	· a.	Control Device:			
	b.	Operating Principles:			
	c.	Efficiency*:		d.	Capital Cost:
	e.	Useful Life:	•	f. ·	Operating Cost:
	g.	Energy*:		h.	Maintenance Cost:
	i.	Availability of constructio	n materials and process ch	emic	als:
	j.	Applicability to manufactor	ייוחת מדחר מנימני		
	k.			railab	le space, and operate within proposed levels:
	2.	•	·		·
	a.	Control Device:		•	
	b.	Operating Principles:			
	C.	Efficiency*:		d.	Capital Cost:
	e.	Useful Life:		f.	Operating Cost:
	g.	Energy **:		h.	Maintenance Costs:
	i.	Availability of construction	n materials and process ch	nemic	als:
	j.	Applicability to manufact	uring processes:		
	k.	Ability to construct with o	control device, install in a	/ailab	le space, and operate within proposed levels:
•E	xplain me	ethod of determining efficie	ncy.		
	,	be reported in units of elect		ı rate	
	3.	·			
	a.	Control Device:			
	b.	Operating Principles:			
	c.	Efficiency*:		d.	Capital Cost:
	e.	Life:	•	f.	Operating Cost:
		Energy:		h.	Maintenance Cost:
	g.	cueral.	•	• • • •	manitaliana acti

٥ç

<sup>\*</sup>Explain method of determining efficiency above.

•	i. A	vailability of construction materials and	d process chemic	cals:
	j. A	pplicability to manufacturing processes	:	
	k. A	bility to construct with control device,	install in availab	ole space and operate within proposed levels:
4.	,			
	a. C	ontrol Device		
	ь. О	perating Principles:		
	c. E	fficiency*:	d.	Capital Cost:
	e. L	ife:	f.	Operating Cost:
	g. E	nergy:	h.	Maintenance Cost:
	i. A	vailability of construction materials and	l process chemic	als:
	j. A	pplicability to manufacturing processes.		
		•		ale space, and operate within proposed levels:
F. Des		he control technology selected:		
		of Device:		•
	Efficie		3.	Capital Cost:
	Life:		5.	Operating Cost:
6.	Energy	y:	7.	Maintenance Cost:
8.	Manuf	facturer:		
9.	Other	locations where employed on similar pr	ocesses:	
	a.			
	(1	I) Company:		
	(2	2) Mailing Address:		
	(3	B) City:	(4)	State:
	(5	5) Environmental Manager:		
	(6	Telephone No.:		
*Explain	n metho	od of determining efficiency above.		
	(7	7) Emissions*:		
		Contaminant		Rate or Concentration
_				
	(8	B) Process Rate*:		
	b.			
	(1	1) Company:		
	(2	2) Mailing Address:		
	(3	3) City:	(4)	State:
*Applica why.	nt must	t provide this information when availab	ole. Should this	information not be available, applicant must state the reason(s

(6) Telephone No.: (7) Emissions*:	
Contaminant	Rate or Concentration
(8) Process Rate*:	
10 Reason for selection and description of systems:	

(5)

Environmental Manager:

<sup>\*</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

# SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION n/a

A.	Company Monitored Data				· •
	1 no sites	TSP	( ) so <sup>2</sup> *	Wind spd/dir	•
	renocormonitoring		_ to/		
	month	, , , , , , , , , , , , , , , , , , , ,	month day	year	
	Other data recorded			-	
	Attach all data or statistical summarie	es to this application	on.		
	2. Instrumentation, Field and Laborator	Y			
	a) Was instrumentation EPA referen	enced or its equiva	alent? Yes	No	
	b) Was instrumentation calibrated	in accordance wit	h Department proce	dures?Yes _	No Unknown
В.	Meteorological Data Used for Air Quality	y Modeling	•		•
	1 Year(s) of data from month	1 1	to/	/	
	•		•	-	
	2. Surface data obtained from (location				
	3. Upper air (mixing height) data obtain	ed from (location	)		
	4. Stability wind rose (STAR) data obta	ined from (locatio	on)		•
C.	Computer Models Used		•		
	1.			Modified?	If yes, attach description.
	2		•	Modified?	If yes, attach description.
	3	<u> </u>		Modified?	If yes, attach description.
	4				
	Attach copies of all final model runs sho				
D.	Applicants Maximum Allowable Emissio	•			-
U.	Pollutant			mission Rate	
			-		
	TSP			gra	
_	so <sup>2</sup>			gra	ams/sec
Ε.	Emission Data Used in Modeling		·		
	Assault the of amindon sections Contacts	ره المرورة ومرور والمراس والرا			In MEDC point aumborl

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

- F. Attach all other information supportive to the PSD review.
- \*Specify bubbler (B) or continuous (C).
- G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

# **BEST AVAILABLE COPY**

# ATTACIMENT A

# HARRIS SEMICONDUCTOR

# EXHAUST SCRUBBER - BUILDING 62A

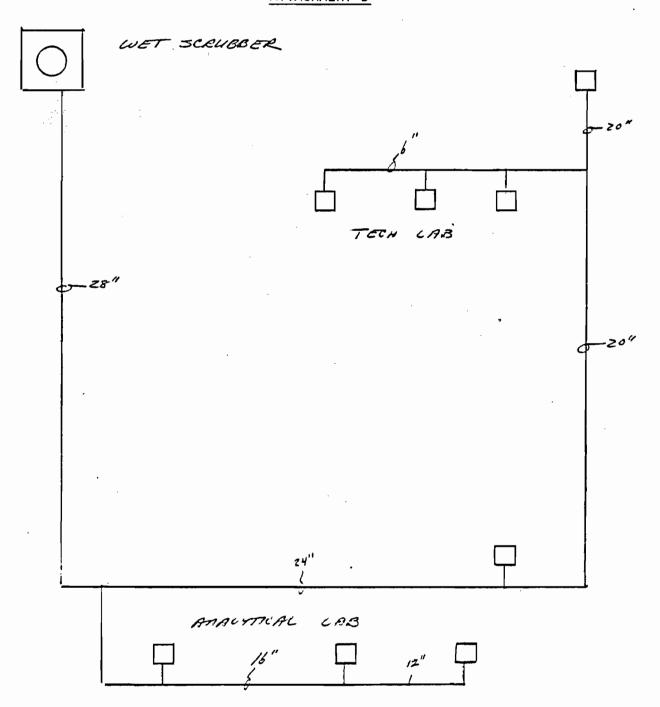
# SYSTEM 1 SOLVENT

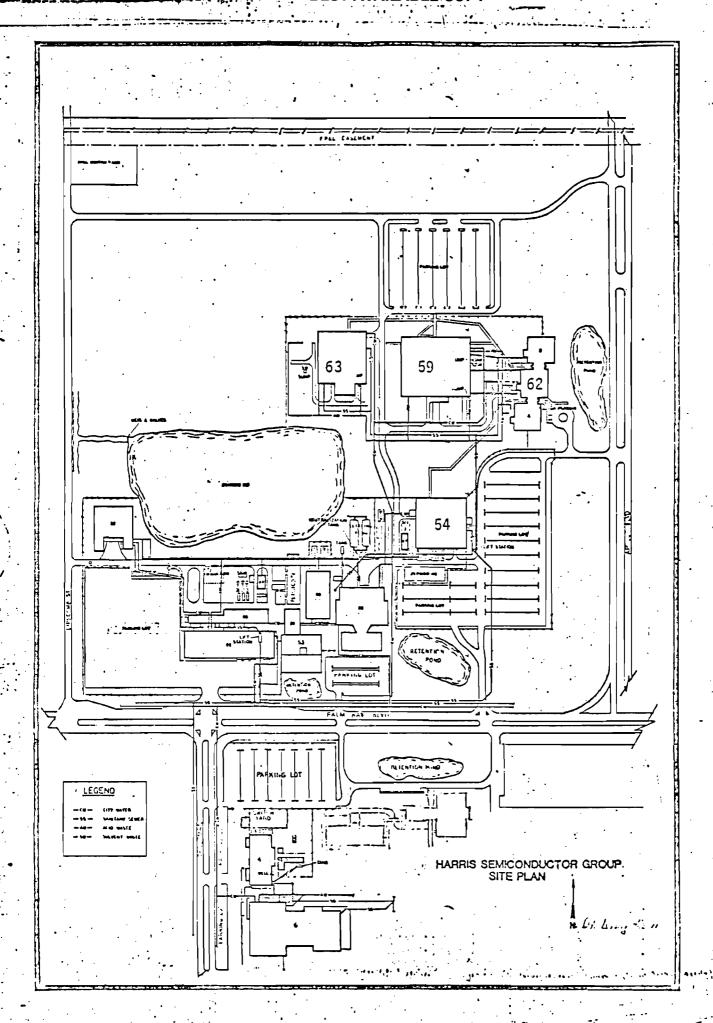
RAW	UTILIZATION	EMISS	ION	POTENTIAL	EMISSION
MATERIAL	RATE 1b/hr	MAXIMUM 1b/hr .	ACTUAL ton/yr	lb/hr	ton/yr
Acetone	1.07	0.013	0.042	0.087	0.277
Methanol	1.11	0.085	0.269	0.567	1.796
Trichloroethylem	25.7	0.040	0.127	0.267	0.847
Xylene	1.22	0.057	0.182	0.382	1.212
Propanol ·	7.81	0.016	0.050	0.106	0.336
Butyl Acetate	3.29	0.015	0.049	0.103	0.326
Freon	1.67	0.0096	0.031	0.065	0.204
Photoresist	1.78	0.18	0.570	1.2	3.802
Microstrip	.74	0.075	0.239	0.503	1.594
· ·					

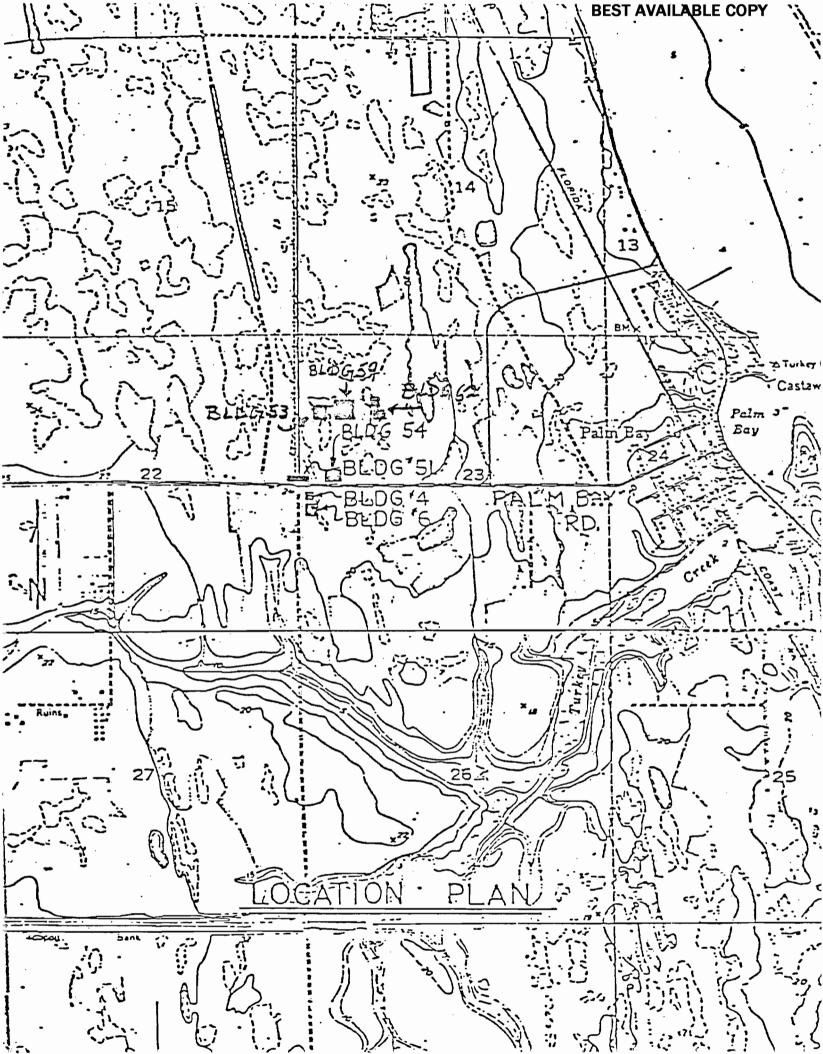
000 0/10/02

BUILDING 62-A SOLVENT EXHAUST SYSTEM

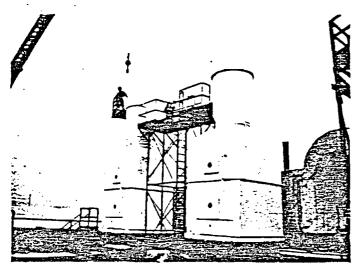
ATTACHMENT B







## **BEST AVAILABLE COPY**



## AIR POLLUTION CONTROL EQUIPMENT

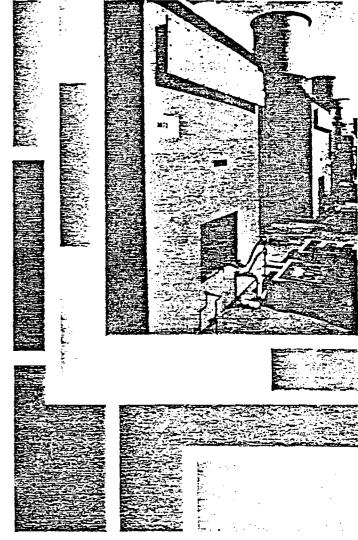
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

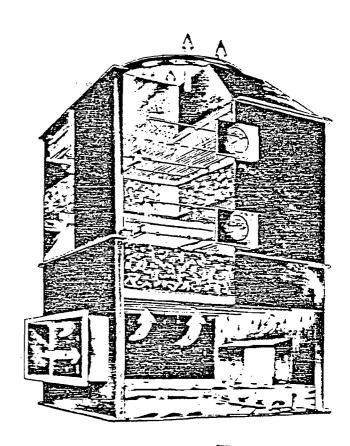
Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.



Beverly Pacific's Packed Scrubbers are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.

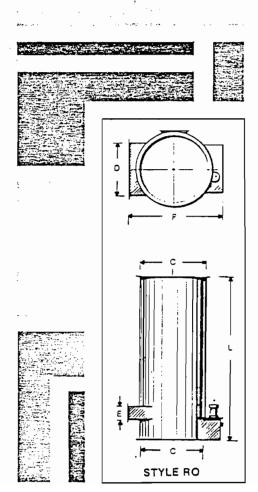
Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.



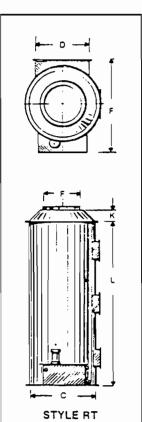


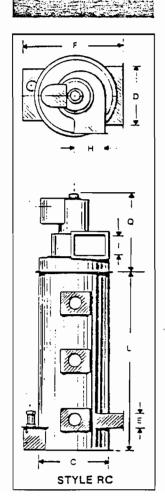
# PACKED SCRUBBER DIMENSIONAL CHART MODEL NUMBERS DIMENSIONS IN INCHES

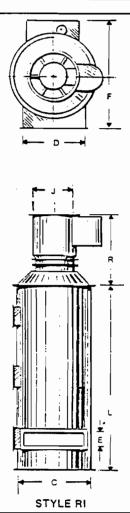
	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
Α	78	82	84	94	101	108	112	114	118	118
В	24	36	42	48	60	72	84	96	108	120
С	28	40	48	58	72	84	96	108	120	136
D	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	. 42	54	60	66	78	90	102	114	126	138
н	13%	16%	221/2	261/4	291/2	351/4	39	471/4	52%	631/8
1	10%	12%	17	201/2	22¾	27	30	371/2	40¾	49¾
J	18	22	28	34	38	45	50	62	66	80
К	6	8	10	10	12	16	19	. 20	24	24
L	84	87	89	104	112	118	122	124	128	128
М	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
0	38	52	58	65	79	91	106	-119	131	145
P	14	16	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	1214	15	20	241/2	27	33	361/2	441/2	49	60
CFM x:1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC, GPM MAKE-UP GPM	7 0.7	15 1.5	25 2.0	35 3.0	45 4.0	75 7.0	105 10.0	135 13.0	175 17.0	225 22.0
HT OP. WT.	388 220	745 385	1110 550	1570 770	2690 1210	4085 1925	5670 2750	7595 3795	11790 5390	16040 - 7040
VT CP. WT. VT SHIP WT.	318 150	660 300	1060 500	1500 700	2630 1150	3910 1750	5470 2550	7400 3600	11650 5250	15800 6800

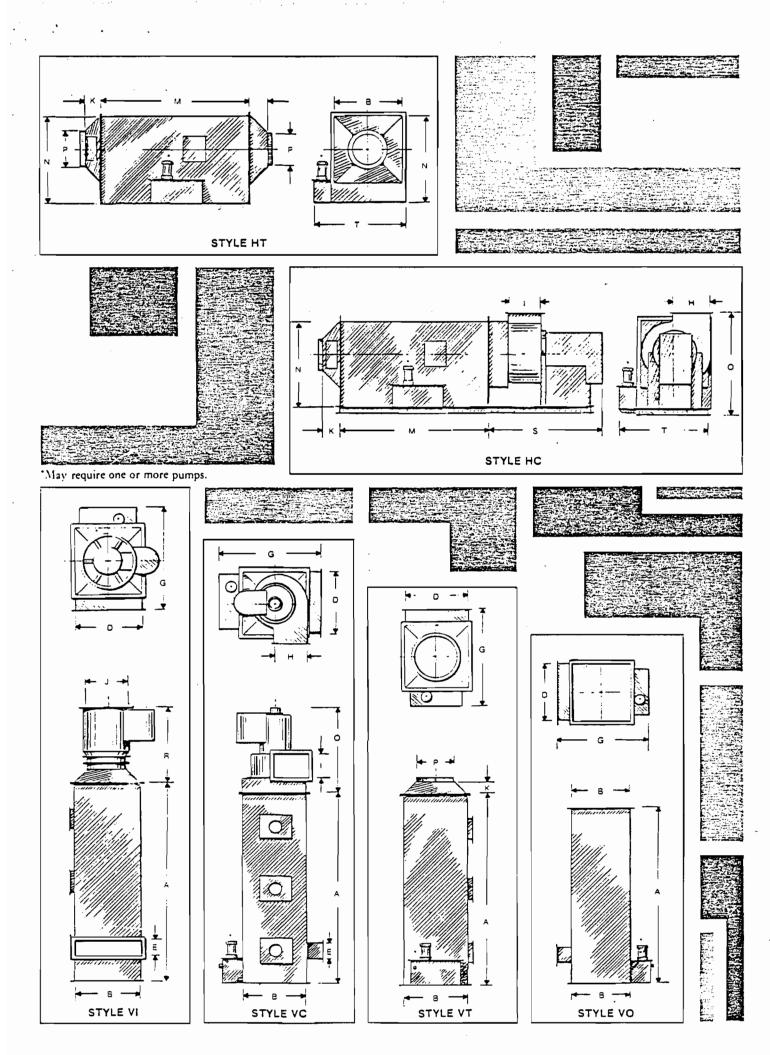












## COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

## SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

## SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

### ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

### CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

## OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54993

**BEST AVAILABLE COPY** 

APR 21 1982

SAINT JOHNS RIVER DISTRICT

APR 26 1982 STATE OF FLORIDA

AIR POLLUTION SOURCES

SOURCE TYPE:Stationar	У	[X] New <sup>1</sup> [ ] Ex	isting 1
APPLICATION TYPE: [X] Cons	truction [ ] Operation [	] Modification	
COMPANY NAME: Harris S	emiconductor		COUNTY: Brevard
Identify the specific emission poin No. 2, Gas Fired) Building 6	t source(s) addressed in this 2 Solvent Vapor Exha	application (i.e. Lime K aust Scrubber (FS	iln No. 4 with Venturi Scrubber; Peeking Unit 5-62B-1)
SOURCE LOCATION: Street _	Palm Bay Road		City Palm Bay
UTM: E	ast17-538700	Nort	h <u>17-3100900</u>
Latitude	28 • <u>01</u> • <u>20</u>	"N Long	gitude <u>80 ° 36 ′ 10 ′</u> w
APPLICANT NAME AND TITLE:	P. R. Bumgarner, M	anager Facilitie	s Engineering
APPLICANT ADDRESS: PT-0	30 Box 883, Melbourn	e, FL 32901	
	SECTION I: STATEMENTS		ENGINEER
A. APPLICANT			
I am the undersigned owner o	or authorized representative*	of <u>Harris Semico</u>	nductor
Florida Statutes, and all the	rules and regulations of the	department and revision will promptly notify the Signed:  P. R. Bumga	rner, Manager Facilities Eng.  Telephone No. 724-7657
B. PROFESSIONAL ENGINEE	R REGISTERED IN FLORIC	OA (where required by C	hapter 471, F.S.)
be in conformity with mode permit application. There is erly maintained and operate rules and regulations of the	rn engineering principles app reasonable assurance, in my d, will discharge an effluent tl department. It is also agreed t	olicable to the treatment professional judgment, that complies with all appoint the undersigned will operation of the pollution	e been designed/examined by me and found to and disposal of pollutants characterized in the hat the pollution control facilities, when propolicable statutes of the State of Florida and the furnish, if authorized by the owner, the applicable pollution
		Signed:Chester C. B	ach
			Name (Please Type)
(Affix Seal)	·	<u> Harris Semic</u>	
			ompany Name (Pleasa Type) 883, Melbourne, FL 32901
•			lailing Address (Please Type)
Florida Registration No	19110	Date: <u>2-22-82</u>	Telephone No

<sup>&</sup>lt;sup>1</sup>See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.) DER FORM 17-1-122(16) Page 1 of 10

## SECTION II: GENERAL PROJECT INFORMATION

Building 62 will utilize laboratory hood type work stations	pected improvements in source p ttach additional sheet if necessar to provide clean room
conditions for the manufacture of semiconductures. All chemi	cals are utilized in
1-2 gallon containers in which the devices are immersed. Ves	sel surface exposed to
exhaust air is minimal. Air is exhausted via A. 1200 CFM fum by Beverly Pacific. Schedule of project covered in this application (Construction Permit Application Only)	e scrubber manufacture
Start of Construction5-1-82 Completion of Construction _	9-1-82
Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for project serving pollution control purposes. Information on actual costs shall be furnished permit.)  Fan/Wet Scrubber \$12,000.00	with the application for operat
Indicate any previous DER permits, orders and notices associated with the emission point, in tion dates.  Building 62 is new construction located approximately 1000 f	
which has current operating permits.	
if seasonal, describe:	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?	; if power plant, hrs/yr
If this is a new source or major modification, answer the following questions. (Yes or No)	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?  b. If yes, has "Lowest Achievable Emission Rate" been applied?	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?  b. If yes, has "Lowest Achievable Emission Rate" been applied?  c. If yes, list non-attainment pollutants.  2. Does best available control technology (BACT) apply to this source? If yes, see	no
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?  b. If yes, has "Lowest Achievable Emission Rate" been applied?  c. If yes, list non-attainment pollutants.  2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.  3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements	no
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?  b. If yes, has "Lowest Achievable Emission Rate" been applied?  c. If yes, list non-attainment pollutants.  2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.  3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.  4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to	no no no

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Description	Contan	ninants	Utilization			
Description	Туре	% Wt	Rate - lbs/hr	Relate to Flow Diagram		
See Attachment A				See Attachment B		
•						
			•			

B. Process Rate, if applicable: (See Section V, I
---

1. Total Process Input Rate (lbs/hr): \_\_\_\_\_n/a\_\_

2. Product Weight (lbs/hr): Silicone wafer weighs 12 gms.

C. Airborne Contaminants Emitted:

		Emission <sup>1</sup>		Allowed Emission <sup>2</sup>	Allowable <sup>3</sup>	Potential Emission <sup>4</sup>		Relate to Flow Diagram	
Name of Contaminant		Maximum Actual lbs/hr T/yr		Rate per Ch. 17-2, F.A.C.	Emission lbs/hr	lbs/hr	T/yr		
See	AttachmentA				n/a			See Attachment	
_	· ·				<del> </del>		<del></del>		

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup>
Beverly Pacific Corp.	Solvent vapor	85%	n/a	Mfg. Design
Model #PS-2VT/CB-12				
_				

<sup>&</sup>lt;sup>1</sup>See Section V, Item 2.

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Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

<sup>&</sup>lt;sup>3</sup>Calculated from operating rate and applicable standard

<sup>&</sup>lt;sup>4</sup>Emission, if source operated without control (See Section V, Item 3)

<sup>51</sup>f Applicable

Punits Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, lbs/hr Fuel Analysis:  Percent Sulfur:	Type (Be Specific)		nsumption*		Maximum Heat Input			
G. Indicate liquid or solid wastes generated and method of disposal.  Scrubber water discharged to industrial wastewater treatment facility.  H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):  Stack Height: 15'0" ft. Stack Diameter: 14"  Gas Flow Rate: 1200 ACFM Gas Exit Temperature: 74  Water Vapor Content: 1 % Velocity: 500  SECTION IV: INCINERATOR INFORMATION n/a  Type of Waste Type O (Plastics) (Rubbish) (Refuse) (Garbage) (Pathological) (Liq & Gas By-prod.)  Lbs/hr Incinerated (Ibs/hr) Design Capacity (Ibs/hr)  Approximate Number of Hours of Operation per day days/week Manufacturer				avg/hr	max	/hr	(MMBTU)	/hr)
uel Analysis:  ercent Sulfur:  ensity:  Ibs/gal  Typical Percent Nitrogen:  BTU/lb  BT  Ther Fuel Contaminants (which may cause air pollution):  If applicable, indicate the percent of fuel used for space heating. Annual Average								· · · · · · · · · · · · · · · · · · ·
uel Analysis:  ercent Sulfur:    Ibs/gal   Typical Percent Nitrogen:   BTU/lb   BT  ther Fuel Contaminants (which may cause air pollution):   BTU/lb   BT  ther Fuel Contaminants (which may cause air pollution):   BTU/lb   BT  If applicable, indicate the percent of fuel used for space heating. Annual Average   n/a   Maximum				•		<u> </u>		
recent Sulfur: Percent Ash: Percent Ash:								
Percent Ash:  Percent Sulfur:  Density:  Ibs/gal  Typical Percent Nitrogen:  BTU/lb  BT  Dther Fuel Contaminants (which may cause air pollution):  If applicable, indicate the percent of fuel used for space heating. Annual Average	I Inite Natural Gae	MMCE/he: Eugl	Oile harrele/her	Coal the/he			<del> </del>	
Percent Sulfur: Percent Ash:    Ibs/gsl		minor /m, r der	Ons, Darreissin,	COai, 153/111				
Density:	•		·		Percent Ash:			-
Type of Waste Type O (Plastics) Type I (Refuse) Type II (Garbage) Type IV (Liq & Gas Sy-prod.)  Secription of Waste Publisher (Jos/Pr) Incinerated (Jos/Pr) Description of Waste Publisher (Jos/Pr) Description of Waste Publisher (Jos/Pr) Description of Waste Publisher (Jos/Pr) Pub								
If applicable, indicate the percent of fuel used for space heating. Annual Average	leat Capacity:			BTU/lb				BTU/g
Scrubber water discharged to industrial wastewater treatment facility.  Scrubber water discharged to industrial wastewater treatment facility.  H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):  Stack Height: 15'0"	Other Fuel Contami	nants (which ma	y cause air pollu	ition):				
Scrubber water discharged to industrial wastewater treatment facility.  Scrubber water discharged to industrial wastewater treatment facility.  I. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):  Stack Height: 15'0"						·	· 	
Scrubber water discharged to industrial wastewater treatment facility.  4. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):  Stack Height: 15'0"	. If applicable,	indicate the perc	ent of fuel used	for space heating	ng. Annual Ave	ragen/a	Maximum .	
Scrubber water discharged to industrial wastewater treatment facility.  4. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):  Stack Height: 15'0"								
A. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):  Stack Height: 15'0" ft. Stack Diameter: 14"  Gas Flow Rate: 1200 ACFM Gas Exit Temperature: 74  Water Vapor Content: 1 % Velocity: 500  SECTION IV: INCINERATOR INFORMATION n/a  Type of Waste Type O Type I (Rubbish) (Refuse) (Garbage) (Pathological) (Liq & Gas By-prod.) By-prod.  Lbs/hr Incinerated (lbs/hr) Description of Waste Position of Waste Incinerated (lbs/hr) Description of Hours of Operation per day days/week  Manufacturer day days/week						treatment f	acility.	
Stack Height: 15 °0"								
Water Vapor Content: 1 % Velocity: 500  SECTION IV: INCINERATOR INFORMATION  n/a  Type of Waste Type O (Plastics) Type I (Rubbish) Type II (Refuse) (Garbage) (Pathological) Type IV (Liq & Gas By-prod.) By-prod.)  Lbs/hr Incinerated Posscription of Waste Fotal Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)  Approximate Number of Hours of Operation per day days/week	Stack Height:	15'0"						f
SECTION IV: INCINERATOR INFORMATION  n/a  Type of Waste	Gas Flow Rat							
Type of Waste Type O (Plastics) (Rubbish) Type II (Garbage) (Pathological) Type V (Liq & Gas By-prod.) Solid By-prod.)  Lbs/hr Incinerated (lbs/hr) Design Capacity (lbs/hr) days/week  Manufacturer day days/week	Water Vapor (	Content:1	-	%	Velocity:	500		FP
Type of Waste Type O (Plastics) (Rubbish) Type II (Garbage) (Pathological) Type V (Liq & Gas By-prod.) Solid By-prod.  Lbs/hr Incinerated Description of Waste							,	
Type of Waste Type O (Plastics) (Rubbish) Type II (Garbage) (Pathological) Type V (Liq & Gas By-prod.) Solid By-prod.  Lbs/hr Incinerated Description of Waste				•				
Type of Waste Type O (Plastics) Type I (Refuse) Type II (Garbage) Type IV (Liq & Gas By-prod.) Type V (Liq & Gas By-prod.)	•		SECTION	IV: INCINER	ATOR INFORM	ATION		
Type of Waste (Plastics) (Rubbish) (Refuse) (Garbage) (Pathological) (Liq & Gas By-prod.) By-prod.  Lbs/hr Incinerated  Description of Waste				n/a				
Description of Waste	Type of Waste			Type II (Refuse)			(Liq & Gas	Type VI (Solid By-prod.)
Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr) days/week Manufacturer								
Approximate Number of Hours of Operation per day days/week	Description of Wast	e						
Manufacturer	Fotal Weight Incine	rated (lbs/hr)			Design Capacity	/ (lbs/hr)		
Manufacturer	Approximate Numb	er of Hours of C	peration per da	y <del></del>		days/v	veek	
·	_							
Date Constructed Model No					Model No			

	Volume	Heat Release	Fuel		Temperature	
	(ft) <sup>3</sup>	(BTU/hr)	Type	BTU/hr	(°F)	
Primary Chamber						
Secondary Chamber			······································		•	
Stack Height:		ft. Stack Diameter _		Stack Tem	p	
					FPS	
*If 50 or more tons per ocess air.	day design capac	city, submit the emission	ons rate in grains p	per standard cubic foo	t dry gas corrected to 50% ex-	
Type of pollution control	device: [ ] C	ycione [ ] Wet Scrub	ber [] Afterbu	irner [ ] Other (spe	cify)	
Brief description of opera						
Ditti description of opera	ting characteristi		•			
	·			<del> </del>	•	
·						
				<u> </u>	·	
1 Unimara diamarah af any a	officers sabas ab					
Ultimate disposal of any e	muent other th	an that emitted from th	e stack (scrubber	water, ash, etc.):		
			<del></del>		· · · · · · · · · · · · · · · · · · ·	

#### SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

- 1. Total process input rate and product weight show derivation.
- 2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
- 3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
- 4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
- 5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
- 6. An 8½" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
- 7. An 8%" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
- 8. An 8%" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

## SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

n

Contaminant	Rate or Concentration
•	
	•
Has EPA declared the best available control tech	nnology for this class of sources (If yes, attach copy) [ ] Yes [ ] No
Contaminant	Rate or Concentration
·	
ff. a contain levels do ver manner es best en	ilable sentral technology.
What emission levels do you propose as best ava	
Contaminant	Rate or Concentration
•	
	· · · · · · · · · · · · · · · · · · ·
Describe the existing control and treatment tech	nnology (if any).
Describe the existing control and treatment tech	nnology (if any).
ar and a second and	nnology (if any).
1. Control Device/System:	nnology (if any).  4. Capital Costs:
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> </ol>	
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> <li>Useful Life:</li> </ol>	4. Capital Costs:
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> <li>Useful Life:</li> <li>Energy:</li> </ol>	<ul><li>4. Capital Costs:</li><li>6. Operating Costs:</li></ul>
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> <li>Useful Life:</li> <li>Energy:</li> <li>Emissions:</li> </ol>	<ul><li>4. Capital Costs:</li><li>6. Operating Costs:</li><li>8. Maintenance Cost:</li></ul>
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> <li>Useful Life:</li> <li>Energy:</li> </ol>	<ul><li>4. Capital Costs:</li><li>6. Operating Costs:</li></ul>
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> <li>Useful Life:</li> <li>Energy:</li> <li>Emissions:</li> </ol>	<ul><li>4. Capital Costs:</li><li>6. Operating Costs:</li><li>8. Maintenance Cost:</li></ul>

<sup>\*</sup>Explain method of determining D 3 above.

a. Height: ft. b. Diameter: c. Flow Rate: ACFM d. Temperature: e. Velocity: FPS  E. Describe the control and treatment technology available (As many types as applicable, use additional pages if n  1. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  2. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  *Energy to be reported in units of electrical power — KWH design rate. 3. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Life: f. Operating Cost: h. Maintenance Coss:		10. 013	ick i didilicters			•				
e. Velocity: FPS  E. Describe the control and treatment technology available (As many types as applicable, use additional pages if n  1.  a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: g. Energy*: h. Maintenance Cost: i. Availability of construction materials and process chemicals:  j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  2.  a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: g. Energy**: h. Maintenance Costs: i. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  **Energy to be reported in units of electrical power — KWH design rate.  3. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: f. Operating Cost:		· a.	Height:	ft.	b.	Diameter:				
E. Describe the control and treatment technology available (As many types as applicable, use additional pages if n. 1.  a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  2. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels: *Explain method of determining efficiency. **Explain method of determining efficiency.  **Capital Cost:  **Operating Cost:  **Operating Cost:  **Operating Cost:  **Operating Cost:  **Operating Cost:  **Operat		C.	Flow Rate:	ACFM	d.	Temperature:				
1. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Availability of construction materials and process chemicals:  j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  2. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Availability of construction materials and process chemicals: j. Availability of construction materials and process chemicals: j. Availability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  *Capital Cost: c. Efficiency*: d. Capital Cost: c. Efficiency*: d. Capital Cost: f. Operating Principles:	•	e.	Velocity:	FPS		•				
a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: g. Energy*: h. Maintenance Cost: l. Availability of construction materials and process chemicals:  j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  2. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: g. Energy**: h. Maintenance Costs: i. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  *Capital Cost: c. Efficiency*: d. Capital Cost: c. Efficiency*: d. Capital Cost: c. Efficiency*: d. Capital Cost: f. Operating Cost:	E.	Describ	e the control and treatment tech	nology available (As a	many	types as applicable, use additional pages if necessary).				
b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: g. Energy*: h. Maintenance Cost: i. Availability of construction materials and process chemicals:  j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  2. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  *Explain method of principles:  d. Capital Cost: c. Efficiency*: d. Capital Cost: c. Life: f. Operating Cost:		1.								
c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: g. Energy*: h. Maintenance Cost: i. Availability of construction materials and process chemicals:  j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  2. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Applicability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  *Explain method of principles:  d. Capital Cost: c. Efficiency*: d. Capital Cost: c. Efficiency*: d. Capital Cost:		a.	Control Device:							
e. Useful Life: f. Operating Cost: g. Energy*: h. Maintenance Cost: i. Availability of construction materials and process chemicals:  j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  2.  a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: g. Energy**: h. Maintenance Costs: i. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  **Explain method of determining efficiency.  **Explain method of determining efficiency.  **Explain method of Device: b. Operating Principles:  c. Efficiency *: d. Capital Cost: c. Efficiency *: d. Capital Cost: d. Capital Cost: f. Operating Cost:		b.	Operating Principles:							
g. Energy*: i. Availability of construction materials and process chemicals:  j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  2. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  **Energy to be reported in units of electrical power — KWH design rate.  3. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Life: f. Operating Cost:		C.	Efficiency*:		d.	Capital Cost:				
i. Availability of construction materials and process chemicals:  j. Applicability to manufacturing processes:  k. Ability to construct with control device, install in available space, and operate within proposed levels:  2.  a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: g. Energy**: h. Maintenance Costs: i. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  *Explain method of determining efficiency.  *Energy to be reported in units of electrical power — KWH design rate.  3. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Life: f. Operating Cost:		e.	Useful Life:		. <b>f.</b> ·	Operating Cost:				
j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  2. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  *Explain method of determining efficiency.  *Explain method of Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Life: f. Operating Cost:		g.	Energy*:		h.	Maintenance Cost:				
k. Ability to construct with control device, install in available space, and operate within proposed levels:  2.  a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: j. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  *Explain method of determining efficiency.  Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Life: f. Operating Cost:		i.	Availability of construction materials and process chemicals:							
2.  a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: g. Energy**: h. Maintenance Costs: i. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  *Energy to be reported in units of electrical power — KWH design rate. 3. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Life: f. Operating Cost:		į.	Applicability to manufacturing	processes:	•					
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b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Useful Life: f. Operating Cost: g. Energy **: h. Maintenance Costs: i. Availability of construction materials and process chemicals: j. Applicability to manufacturing processes: k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  **Energy to be reported in units of electrical power — KWH design rate.  3. a. Control Device: b. Operating Principles:  c. Efficiency*: d. Capital Cost: e. Life: f. Operating Cost:		2.								
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g. Energy**:  h. Maintenance Costs:  i. Availability of construction materials and process chemicals:  j. Applicability to manufacturing processes:  k. Ability to construct with control device, install in available space, and operate within proposed levels:  *Explain method of determining efficiency.  **Energy to be reported in units of electrical power — KWH design rate.  3.  a. Control Device:  b. Operating Principles:  c. Efficiency*:  d. Capital Cost:  e. Life:  f. Operating Cost:		c.	Efficiency*:		d.	Capital Cost:				
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<ul> <li>a. Control Device:</li> <li>b. Operating Principles:</li> <li>c. Efficiency*:</li> <li>d. Capital Cost:</li> <li>e. Life:</li> <li>f. Operating Cost:</li> </ul>	••E	nergy to	be reported in units of electrical	power – KWH design	rate					
b. Operating Principles:  c. Efficiency*:  d. Capital Cost:  e. Life:  f. Operating Cost:		3.				•				
c. Efficiency*: d. Capital Cost: e. Life: f. Operating Cost:		a.	Control Device:							
e. Life: f. Operating Cost:		b.	Operating Principles:	•						
		c.	Efficiency *:		d.	Capital Cost:				
g. Energy: h. Maintenance Cosτ:		e.	Life:		f.	Operating Cost:				
		g.	Energy:		h.	Maintenance Cost:				

ft. OF

<sup>\*</sup>Explain method of determining efficiency above.

		1.	WA91	lability of construction materials and	process chemic	ais:					
		j.	Appl	licability to manufacturing processes:							
		k.	Abili	ity to construct with control device, i	nstall in availab	le space and operate within proposed levels:					
	4.										
		<b>a.</b> .	Cont	trol Device		•					
		<b>b.</b>	Oper	rating Principles:							
		c.	Effic	iency*:	· d.	Capital Cost:					
		1	Life:		f.	Operating Cost:					
			Ener		;; h.	Maintenance Cost:					
				lability of construction materials and		·					
		j.	Appl	licability to manufacturing processes:							
		-	•	•	nstall in availab	le space, and operate within proposed levels:					
:.	Des			control technology selected:							
				Device:		•					
	2.	Effic	ienc	y*:	3.	Capital Cost:					
	4.	Life:	;		5.	Operating Cost:					
	6.	Ener	gy:		7.	Maintenance Cost:					
	8.	Man	ufact	turer:							
	9.	Othe	r loc	rations where employed on similar pro	cesses:						
		a.									
			(1)	Company:							
			(2)	Mailing Address:							
			(3)	City:	(4)	State:					
			(5)	Environmental Manager:							
			(6)	Telephone No.:	•						
•E	xplair	n metl	hod o	of determining efficiency above.		•					
			(7)	Emissions*:							
				Contaminant		Rate or Concentration					
		-	(8)	Process Rate *:							
		b.									
			(1)	Company:							
			(2)	Mailing Address:							
			(3)	City:	(4)	State:					
Άn	plica					information not be available, applicant must state the reason(					
wh											

DER FORM 17-1.122(16) Page 8 of 10

(6) Telephone No.: (7) Emissions*:	
(7) Emissions*:  Contaminant	Rate or Concentration
(8) Process Rate*:	
10. Reason for selection and description of systems:	•

(5)

Environmental Manager:

<sup>\*</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

#### SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

n/a

A.	Company Monitored Data					•
	1 no sites TSA	p <u>(</u>	_) so <sup>2</sup> *		Wind spd/dir	•
	Period of monitoring / month da	/ ay year to		/ / year	•	
	Other data recorded		<u> </u>	· · · · · · · · · · · · · · · · · · ·		
	Attach all data or statistical summaries to t	his application.				
	2. Instrumentation, Field and Laboratory					
	a) Was instrumentation EPA referenced	or its equivalent	t?Yes	No	· ·	,
	b) Was instrumentation calibrated in acc	ordance with D	epartment proc	edures? _	Yes	No Unknowr
В.	Meteorological Data Used for Air Quality Mod	deling				•
	1 Year(s) of data from/ month da	/ iy year to	month day	/ y year		
	2. Surface data obtained from (location)	<del></del>				<del></del>
	3. Upper air (mixing height) data obtained fro	om (location)			· .	·
	4. Stability wind rose (STAR) data obtained f	from (location) .	-			, ,
C.	Computer Models Used		•			
	1	<del></del>			Modified?	If yes, attach description.
	2				Modified?	If yes, attach description.
	3				Modified?	If yes, attach description
	4				Modified?	If yes, attach description.
	Attach copies of all final model runs showing	input data, reces	ptor locations, a	and princip	le output table	? <b>s.</b>
D.	Applicants Maximum Allowable Emission Dat	:a			•	
	Pollutant			Emission R	ate	
	TSP	_			gra	ams/sec
	so <sup>2</sup>		•		gra	ams/sec
E.	Emission Data Used in Modeling	•				
	Attach list of emission sources. Emission dat	a required is so	urce name, des	cription on	point source	(on NEDS point number)

UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

<sup>\*</sup>Specify bubbler (B) or continuous (C).

Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

## **BEST AVAILABLE COPY**

## ATTACHMENT A

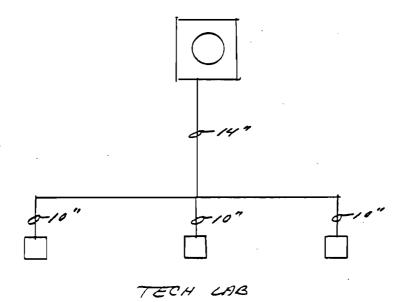
## HARRIS SEMICONDUCTOR

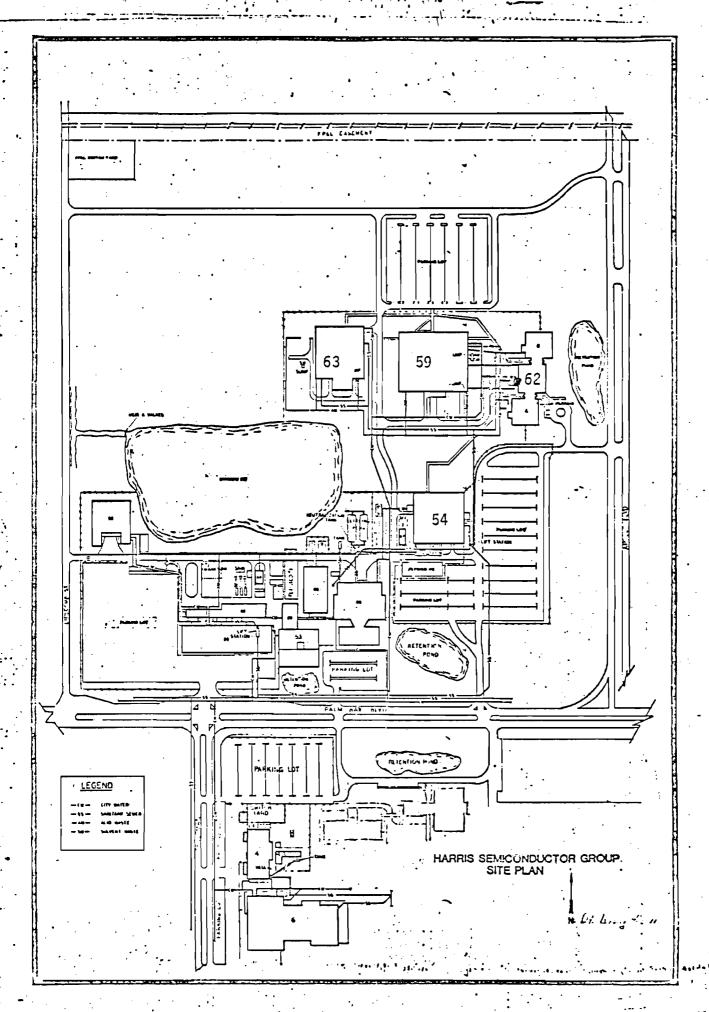
## EXHAUST SCRUBBER - BUILDING 62B

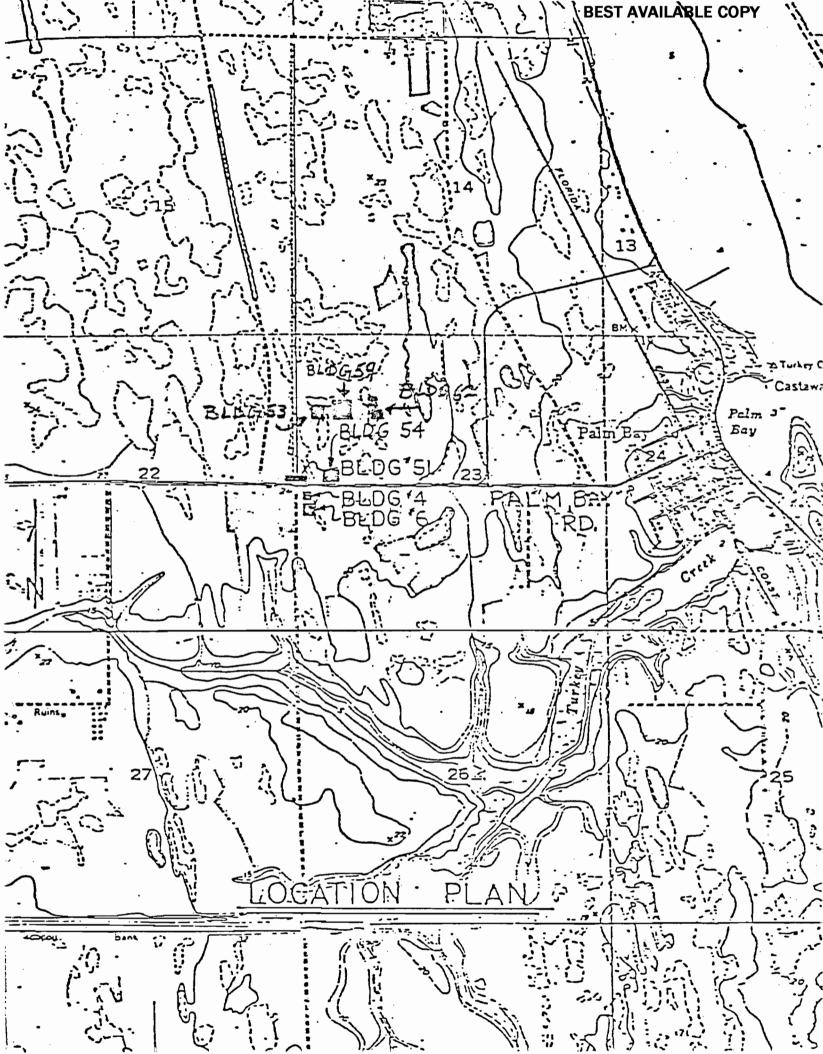
## SYSTEM 3 SOLVENT

RAW UTILIZATION MATERIAL RATE		EMISS	ION	POTENTIAL EMISSION		
MATERIAL	RATE 1b/hr	MAXIMUM lb/hr	ACTUAL ton/yr	lb/hr	ton/yr	
Acetone	.164	0.002	0.005	0.01	0.033	
Methanol	,130	0.010	0.032	0.066	0.210	
Trichloroethylem	3.2	0.005	0.015	0.031	0.099	
Xylene	.15	0.007	0.021	0.045	0.142	
Propanol ·	.97	0.002	0.006	0.012	0.039	
Butyl Acetate	.44	0.002	0.005	0.011	0.036	
Freon	.17	0.001	0.004	0.007	0.024	
Ethanol	.91	0.0008	0.003	0.006	0.018	
					· .	

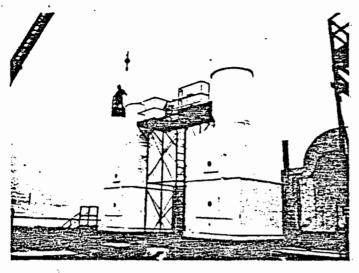
# BUILDING 62-B SOLVENT EXHAUST SYSTEM ATTACHMENT B







## **BEST AVAILABLE COPY**



## AIR POLLUTION CONTROL EQUIPMENT

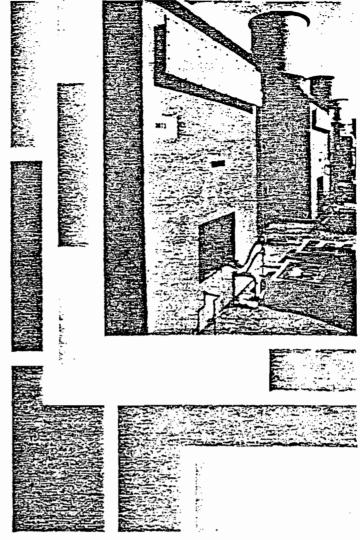
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

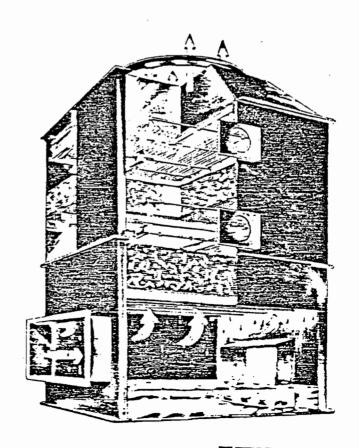
Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.



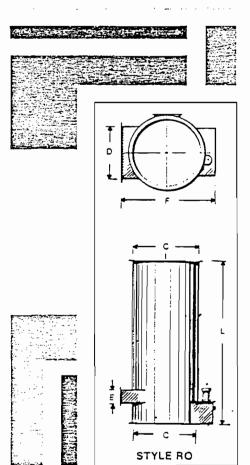
Beverly Pacific's Packed Scrubbers are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.

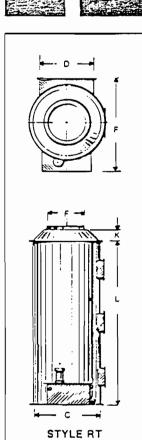
Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.

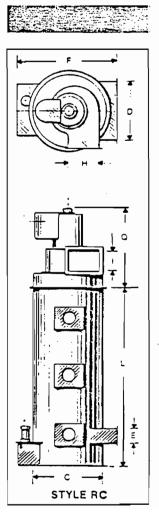


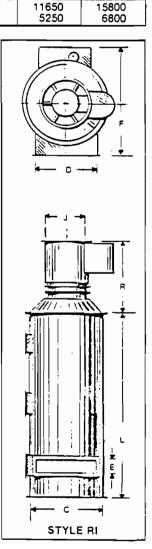


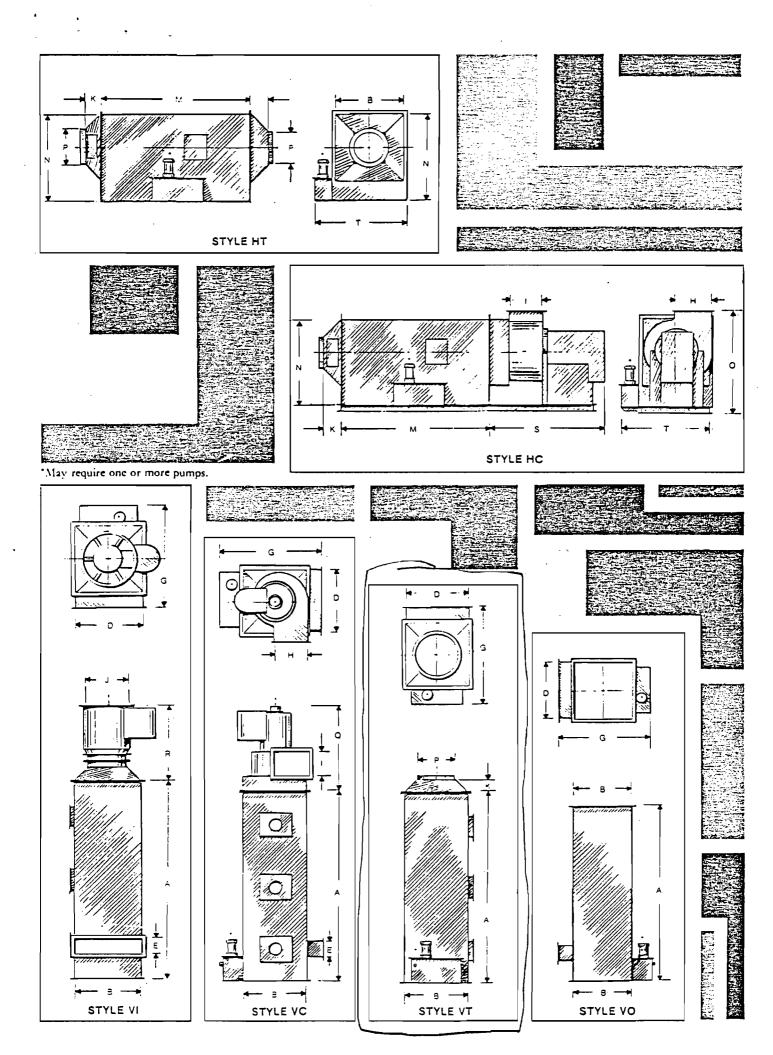
			PACK		JBBER DI MODEL N IENSIONS	UMBERS		ART .		
MA. Suff Commercial in conditions	PS-2	PS-4	PS-6	P\$-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
A	78	82	84	94	101	108	112	114	118	118
В	24	- 36	42	48	60	72	84	96	108	120
С	28	40	48	58	72	84	96	108	120	136
D	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	42	54	60	66	78	90	102	114	126	138
Н	13%	163/8	221/2	261/4	291/2	351/4	39	471/4	52%	63%
1	10%	12%	17	201/2	. 22¾	27	30	371/2	40¾	49¾
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	16	19	20	24	24
L	84	87	89	104	112	118	122	124	128	128
M	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
0	38	52	58	65	79	91	106	119	131	145
Р	14	16	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	121/4	15	20	241/2	27	33	36%	441/2	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC. GPM MAKE-UP GPM	7 0.7	15 1,5	25 2.0	35 3.0	45 4:0	75 7.0	105 10.0	135 13.0	175 17.0	225 22.0
HT OP. WT.	388 220	745 335	1110 550	1570 770	2690 1210	4085 1925	5670 2750	7595 3795	11790 5390	16040 7040
VT OP. WT. VT SHIP WT.	318 150	660 300	1060 500	1500 700	2630 1150	3910 1750	5470 2550	7400 3500	11650 5250	15800 6800











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## COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

## SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is serubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

## SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

## ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

## CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

## OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

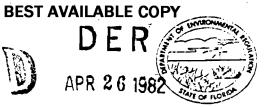
SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54994

APR 21 1982

SAINT JOHNS
RIVER DISTRICT



DEPENDENTATE OF FLORIDA
DEPENDENTAL REGUL

APPLICATION TO OPERATE/CONSTR\
AIR POLLUTION SOURCES

	7007 4250	[X] New 1 [] Existing 1
SOUR	RCE TYPE: Stationary	[X] New <sup>1</sup> [ ] Existing <sup>1</sup>
APPL	ICATION TYPE: [X] Construction [ ] Operation [	] Modification
СОМ	PANY NAME: <u>Harris Semiconductor</u>	COUNTY: Brevard
Ident No. 2	tify the specific emission point source(s) addressed in this 2. Gas Fired) Building 62 Acid Vapor Exhaus	application (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit t Scrubber (FS-62A-2)
		City Palm Bay
		North 17-3100900
	Latitude 28 ° 01 · 20	
4 201	ICANT NAME AND TITLE: P.R. Bumgarner, Ma	•
	ICANT ADDRESS: PT-030 Box 883, Melbourn	·
APPL	ICANT ADDRESS: F1-030 BOX C83; METBOUTH	e, FL 32301
	SECTION I: STATEMENTS	BY APPLICANT AND ENGINEER
Α.	APPLICANT	
	I am the undersigned owner or authorized representative*	of Harris Semiconductor
*Atta	pollution control source and pollution control facilities. Florida Statutes, and all the rules and regulations of the	by knowledge and belief. Further, I agree to maintain and operate the in such a manner as to comply with the provision of Chapter 403, a department and revisions thereof. I also understand that a mermit, if I will promptly notify the department upon sale or legal transfer of the Signed:
		P.R. Bumgarner, Mgr. Facilities Engineering
	•	Name and Title (Please Type)
	•	Date: 2-23-82 Telephone No. 724-7657
8.	PROFESSIONAL ENGINEER REGISTERED IN FLORE	DA (where required by Chapter 471, F.S.)
	be in conformity with modern engineering principles appearmit application. There is reasonable assurance, in my erly maintained and operated, will discharge an effluent trules and regulations of the department. It is also agreed	ution control project have been designed/examined by me and found to plicable to the treatment and disposal of pollutants characterized in the professional judgment, that the pollution control facilities, when propostat complies with all applicable statutes of the State of Florida and the that the undersigned will furnish, if authorized by the owner, the applicable operation of the pollution control facilities and, if applicable, pollution
		Signed: Chester Back
		Chester C. Bach
	(Affix Seal)	Name (Please Type) Harris Semiconductor
		Company Name (Please Type)
		PT-30 Box 883, Melbourne, FL 32901
		Mailing Address (Please Type)
	Florida Registration No	Date: <u>2-23-82</u> Telephone No. <u>724-7324</u>

<sup>1</sup>See Section 17-2.02(15) and (22), Florida Administrative Code, (F.A.C.)

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## SECTION II: GENERAL PROJECT INFORMATION

Building 62 will utilize laboratory hood type work stations	
conditions for the manufacture of semiconductors. All chemic	
1-2 gallon containers in which the devices are immersed. Ves	
exhaust air is minimal. Air is exhausted via A 24,000 cfm fu	me scrubber manufactu
by Beverly Pacific. Schedule of project covered in this application (Construction Permit Application Only)	
Start of Construction 5-1-82 Completion of Construction	9-1-82
Costs of pollution control system(s): (Note: Show breakdown of estimated costs only fo project serving pollution control purposes. Information on actual costs shall be furnished permit.)	r individual components/units of d with the application for opera
Fan/Wet Scrubber \$19,400.00	
Indicate any previous DER permits, orders and notices associated with the emission point, tion dates.	including permit issuance and ex
Building 62 is new construction located approximately 1000 f	t. from building 54
which has current operating permits.	
Normal equipment operating time: hrs/day 24; days/wk 7; wks/yr 52 if seasonal, describe:	; if power plant, hrs/yr
	; if power plant, hrs/yr
if seasonal, describe:	
If this is a new source or major modification, answer the following questions. (Yes or No)	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?  b. If yes, has "Lowest Achievable Emission Rate" been applied?	
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?  b. If yes, has "Lowest Achievable Emission Rate" been applied?  c. If yes, list non-attainment pollutants.  2. Does best available control technology (BACT) apply to this source? If yes, see	_no
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?  b. If yes, has "Lowest Achievable Emission Rate" been applied?  c. If yes, list non-attainment pollutants.  2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.  3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements	_no
If this is a new source or major modification, answer the following questions. (Yes or No)  1. Is this source in a non-attainment area for a particular pollutant?  a. If yes, has "offset" been applied?  b. If yes, has "Lowest Achievable Emission Rate" been applied?  c. If yes, list non-attainment pollutants.  2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.  3. Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.  4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to	_no _no _no

## A. Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contaminants		Utilization	Poloto to Flour Biogram
Description	Туре	% Wt	Rate - lbs/hr	Relate to Flow Diagram
See Attachment A			·	See Attachment B
<u></u>				
•				

B.	Process Rate,	if applicable:	(See Section \	/, Item	1)
----	---------------	----------------	----------------	---------	----

1. Total Process Input Rate (lbs/hr): \_\_\_\_n/a

2. Product Weight (lbs/hr): semiconductor wafer weighs 12 qms.

### C. Airborne Contaminants Emitted:

No.	Emiss	ion <sup>1</sup>	Allowed Emission <sup>2</sup>	Allowable <sup>3</sup>	Potential	Emission <sup>4</sup>	Relate
Name of Contaminant	Maximum Ibs/hr	Actual T/yr	Rate per Ch. 17-2, F.A.C.	Emission ibs/hr	lbs/hr	T/yr	to Flow Diagram
SeeAttachment A				n/a			See Attachment
					<u> </u>		

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup>
Beverly Pacific Corp.	Açid mist	95%	n/a	Mfa. Desian
Model #PS 24HT/CB40				Data

<sup>&</sup>lt;sup>1</sup>See Section V, Item 2.

5If Applicable

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<sup>&</sup>lt;sup>2</sup>Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. — 0.1 pounds per million BTU heat input)

<sup>3</sup>Calculated from operating rate and applicable standard

<sup>&</sup>lt;sup>4</sup>Emission, if source operated without control (See Section V, Item 3)

Tune	Type (Be Specific)		Consumption*			Maximum Heat Input	
.,,,,,			avg/hr	max	./hr	(MMBTU)	'hr) 
· .	<del></del>		,	<u> </u>			
Inits Natural Gas,	MMCF/hr: Fuel	Oils, barrels/hr:	Coal (bs/hr			<del>-</del>	
el Analysis:						•	
•			· ·	Percent Ash:			•
					Nitrogen:		
		•			•		
Stack Height:	34"	d Flow Characteri	ft.	Stack Diameter	:3'7"		
Stack Height: Gas Flow Rat	34" te: 21000/24	1000	ft ACFM	Stack Diameter Gas Exit Tempe	:317" erature:74		
Stack Height: Gas Flow Rat	34" te: 21000/24		ft ACFM	Stack Diameter Gas Exit Tempe	:317" erature:74		· · · · · · · · · · · · · · · · · · ·
Stack Height: Gas Flow Rat	34" te: 21000/24	1000	ft ACFM	Stack Diameter Gas Exit Tempe	:317" erature:74		
Stack Height: Gas Flow Rat	34" te: 21000/24		ft. ACFM %	Stack Diameter Gas Exit Tempe Velocity:	: 3'7" erature: 74 500		
Stack Height: Gas Flow Rat	34" te: 21000/24		ft. ACFM %	Stack Diameter Gas Exit Tempe	: 3'7" erature: 74 500		
Stack Height: Gas Flow Rat	34" te: 21000/24		ftACFM%	Stack Diameter Gas Exit Tempe Velocity:	: 3'7" erature: 74 500		
Stack Height: Gas Flow Rat Water Vapor (	34" te: 21000/24 Content: 1	SECTION	ft. ACFM % IV: INCINER n/a Type II	Stack Diameter Gas Exit Tempe Velocity:  ATOR INFORM	: 3'7"  Prature: 74  500  IATION	Type V (Lig & Gas	Type VI (Solid
Stack Height: Gas Flow Rat Water Vapor (  Type of Waste  bs/hr ncinerated	34" te: 21000/24 Content: 1  Type O (Plastics)	SECTION Type 1 (Rubbish)	ftftftftftft. ACFM%  IV: INCINER n/a Type II (Refuse)	Stack Diameter Gas Exit Tempe Velocity:  ATOR INFORM  Type III (Garbage)	: 3'7"  Prature: 74  500  IATION  Type IV  (Pathological)	Type V (Lig & Gas	Type VI (Solid
Stack Height: Gas Flow Rat Water Vapor (	34" te: 21000/24 Cantent: 1  Type O (Plastics)	SECTION  Type I (Rubbish)	ftACFM%  IV: INCINER n/a  Type II (Refuse)	Stack Diameter Gas Exit Tempe Velocity:  ATOR INFORM  Type III (Garbage)	erature: 74 500  AATION Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Stack Height: Gas Flow Rat Water Vapor (  Type of Waste  bs/hr ncinerated  escription of Wast	34" te: 21000/24 Content: 1  Type O (Plastics)  e	SECTION Type I (Rubbish)	Type II (Refuse)	Stack Diameter Gas Exit Tempe Velocity:  ATOR INFORM  Type III (Garbage)  Design Capacity	erature: 74 500  IATION  Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By prod.)
Stack Height: Gas Flow Rat Water Vapor (  Type of Waste  bs/hr ncinerated  escription of Wast	Type O (Plastics)  erated (lbs/hr)	SECTION  Type I (Rubbish)  Operation per day	Type II (Refuse)	Stack Diameter Gas Exit Tempe Velocity:  ATOR INFORM  Type III (Garbage)  Design Capacity	erature: 74 500  IATION  Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)

	Volume	/RTII/hr\		Fuel	Temperature
•	. (ft)3	(BTU/hr)	Туре	BTU/hr	(OF)
Primary Chamber					
Secondary Chamber					•
Stack Height:		ft. Stack Diameter _		Stack Tem	p
					FP:
If 50 or more tons per dicess air.	ay design capac	city, submit the emissio	ns rate in grains p	per standard cubic foot	dry gas corrected to 50% ex
Type of pollution control o	device: [ ] C	yclone [ ] Wet Scrub	per [] Afterbu	rner [ ] Other (spec	cify)
Brief description of operati					
			•		•
			·		•
	· · · · · · · · · · · · · · · · · · ·				
					· · · · · · · · · · · · · · · · · · ·
Ultimate disposal of any ef	fluent other th	an that emitted from the	stack (scrubber	water, ash, etc.):	
		·			

## SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

- 1. Total process input rate and product weight show derivation.
- 2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc..) and atfach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
- 3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
- 4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
- 5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
- 6. An 8%" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
- 7. An 8%" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
- 8. An 8½" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

- An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

#### SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

Are standards of performance for new stationary sources pursuant to 40 C.F.R. Part 60 applicable to the source? [] Yes [x] No Contaminant Rate or Concentration Has EPA declared the best available control technology for this class of sources (If yes, attach copy) [ ] Yes [ ] No Contaminant Rate or Concentration What emission levels do you propose as best available control technology? Contaminant Rate or Concentration D. Describe the existing control and treatment technology (if any). 1. Control Device/System: 2. Operating Principles: 3. Efficiency: \* 4. Capital Costs: 5. Useful Life: 6. Operating Costs: 8. Maintenance Cost: 7. Energy: 9. Emissions: Contaminant Rate or Concentration

<sup>\*</sup>Explain method of determining D 3 above.

• • •					•			
•	a.	Height:	ft.	b.	Diameter:			
	C.	Flow Rate:	ACFM	d.	Temperature:			
	e. ˈ	Velocity:	FPS	•	•			
E.	Describe the control and treatment technology available (As many types as applicable, use additional pages if necessary							
	1.							
	а.	Control Device:			· · · · ·			
	b.	Operating Principles:						
	c.	Efficiency*:		d.	Capital Cost:			
	e.	Useful Life:		f. ·	Operating Cost:			
	g.	Energy*:		ħ.	Maintenance Cost:			
	i.	Availability of construction materials and process chemicals:						
	j.	Applicability to manufacturing processe	es:		•			
	k.	k. Ability to construct with control device, install in available space, and operate within proposed l						
	2.							
	a.	Control Device:		-				
	b.	Operating Principles:			·			
	c.	Efficiency*:		d.	Capital Cost:			
	e.	Useful Life:		f.	Operating Cost:			
	g.	Energy **:		h.	Maintenance Costs:			
	i.	als:						
	j.	j. Applicability to manufacturing processes:						
	k.	k. Ability to construct with control device, install in available space, and operate within proposed levels:						
• <b>•</b> E	xplain m	ethod of determining efficiency.						
••E	nergy to	be reported in units of electrical power -	KWH design	rate				
	3.							
	a.	Control Device:						
	<b>b.</b>	Operating Principles:						
	C.	Efficiency*:		d.	Capital Cost:			
	е.	Life:		f.	Operating Cost:			
	g.	Energy:		h.	Maintenance Cost:			

٥F

<sup>\*</sup>Explain method of determining efficiency above.

		(0)	J. 17.	(-4)	Oldio.			
		(3)	City:	(4)	State:			
		(1) (2)	Company: Mailing Address:					
	b.		Company					
		(8)	Process Rate*:					
			Contaminant		Rate or Concentration			
		(7)	Emissions*:					
olair	n meti	hod (	of determining efficiency above.		•			
		(6)	Telephone No.:					
		(5)	Environmental Manager:					
		(3)	City:	(4)	State:			
		(2)	Mailing Address:					
		(1)	Company:	•				
<b>J</b> .	a.	1 100	ations where employed on similar p	10062262:				
	Mani							
	Ener			7.	Maintenance Cost:			
	Life:			5.	Operating Cost:			
	Effic		y <b>*</b> :	3.	Capital Cost:			
			Device:	,				
Des	cribe	the c	control technology selected:					
	k.	Abili	ity to construct with control device,	install in availab	le space, and operate within proposed levels:			
	j.	Appi	licability to manufacturing processes	s:	•			
	i	Avai	lability of construction materials an	d process chemic	als:			
		Ener		h.	Maintenance Cost:			
		Life:		f.	Operating Cost:			
	<b>c.</b> ,	Effic	tiency*:	d.	Capital Cost:			
	b.	Oper	rating Principles:					
			trol Device					
4.								
		<ul> <li>j. Applicability to manufacturing processes:</li> <li>k. Ability to construct with control device, install in available space and operate within proposed levels:</li> </ul>						
	1.	Ann	licability to manutacturing processe	¢:				

F.

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<ul><li>(6) Telephone No.:</li><li>(7) Emissions*:</li></ul>						
Contaminant	Rate or Concentration					
(8) Process Rate*:						

Environmental Manager:

<sup>\*</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

#### SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

n/a

A.	Company Monitored Data	•			
	1 no sites	TSP	( ) so <sup>2</sup> *	Wind spd/dir	•
	Period of monitoring	/ / onth day year	to / / month day y	ear	
	Other data recorded		·		
	Attach all data or statistical sumn	naries to this applicat	tion.	•	
	2. Instrumentation, Field and Labor	atory			•
	a) Was instrumentation EPA r	eferenced or its equiv	valent?Yes	No	•
	b) Was instrumentation calibra	ited in accordance wi	ith Department procedure	s?Yes	No Unknown
В.	Meteorological Data Used for Air Qu	ality Modeling			•
-	1 Year(s) of data from	/ /	_ to/ /		
	2. Surface data obtained from (local	•	•		
	Upper air (mixing height) data obtained				<u>-</u>
	4. Stability wind rose (STAR) data of				•
C.	Computer Models Used	obtained from trocats			
C.	1			Modified?	If yes, attach description
	2			•	
•	3				
	4				
	Attach copies of all final model runs				
D.	Applicants Maximum Allowable Em			· · ·	
	Pollutant	ion Rate			
	TSP			grams/sec	
	so <sup>2</sup>			gra	
E.	Emission Data Used in Modeling			_	
	Attach list of emission sources. Em	ission data required	is source name, description	on on point source	(on NEDS point number).

Attach list of emission sources. Emission data required is source name, description on point source (on NEDS point number), UTM coordinates, stack data, allowable emissions, and normal operating time.

F. Attach all other information supportive to the PSD review.

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

<sup>\*</sup>Specify bubbler (B) or continuous (C).

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

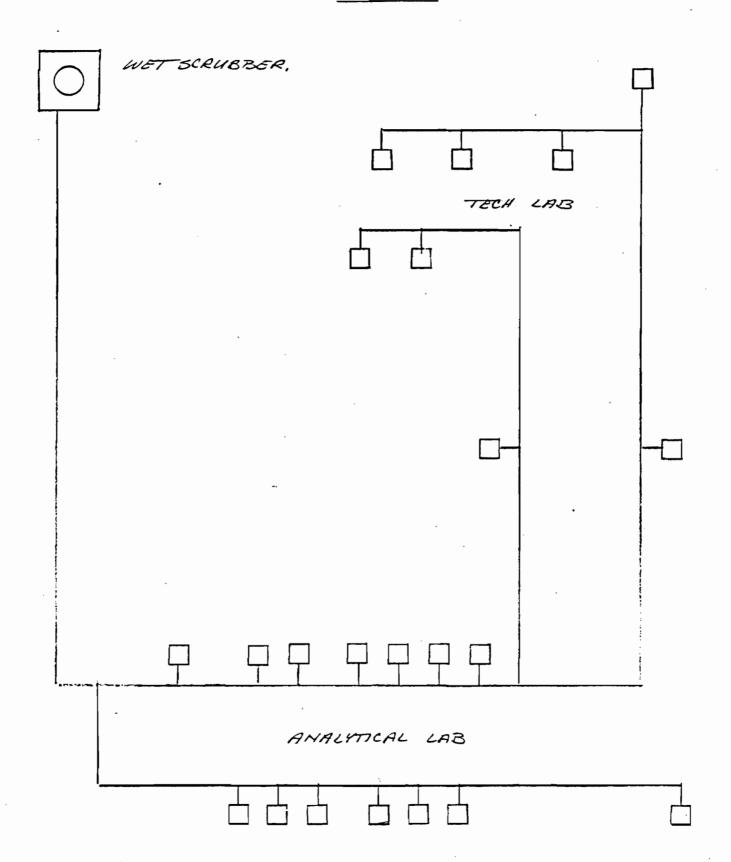
# ATTACHMENT A HARRIS SEMICONDUCTOR EXHAUST SCRUBBER - BUILDING 62A

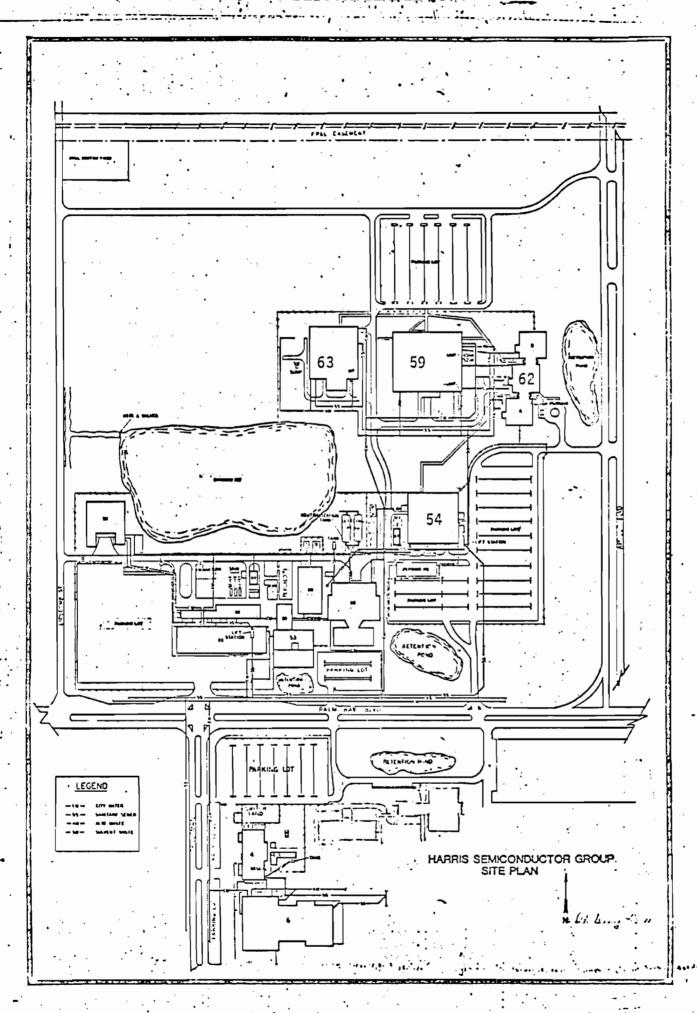
SYSTEM 2 ACID

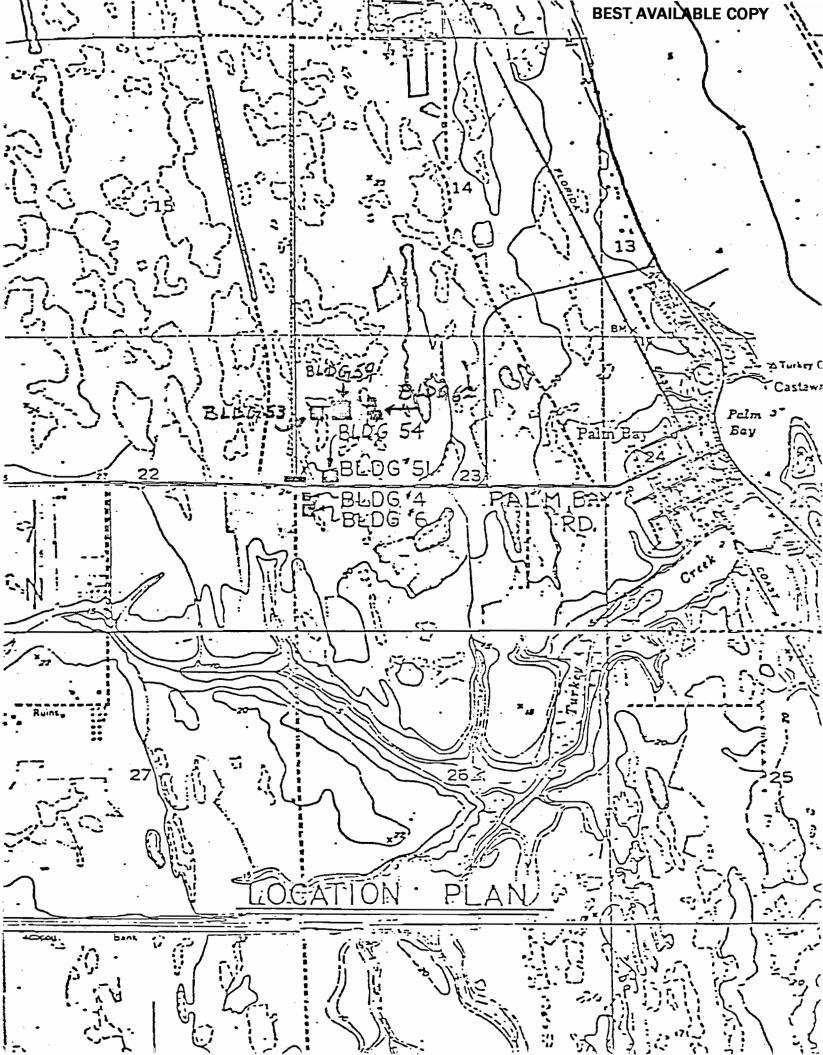
RAW	UTILIZATION	EMISS	SION	POTENTIAL EMISSION		
MATERIAL	RATE 1b/hr	MAXIMUM 1b/hr ACTUAL ton/yr		1b/hr	ton/yr	
Acetic Acid	1.364	0.002	0.006	0.040	0.127	
Ammonium Fluoride	5.03	0.009	0.030	0.19	0.602	
Hydrofluoric	5.70	0.004	0.014	0.088	0.278	
Nitric .	9.34	0.006	0.018	0.116	0.368	
Sodium Hydroxide	8.92	0.006	0.018	0.116	0.368	
Sulfuric	53.22	0.014	0.045	0.285	0.904	
Hydrochloric	1.11	0.0007	0.002	0.0135	0.043	
Phosphoric	7.068	0.004	0.014	0.087	0.277	
					.*	
·			·		·	
			·			
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. <b>.</b>						
	;					

BUILDING 62-A ACID EXHAUST SCRUBBER

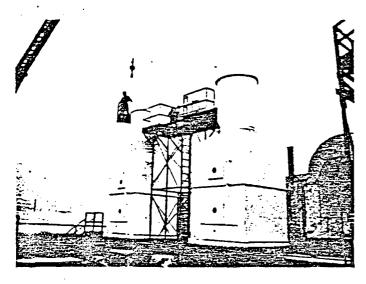
ATTACHMENT B







#### **BEST AVAILABLE COPY**



#### AIR POLLUTION CONTROL EQUIPMENT

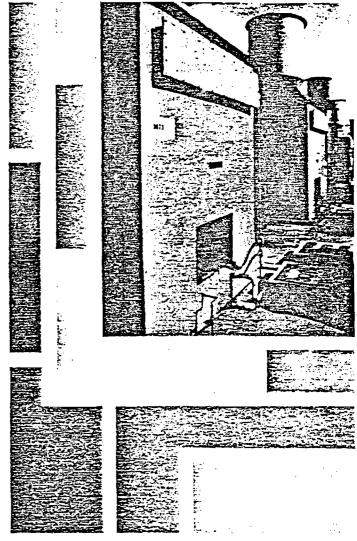
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

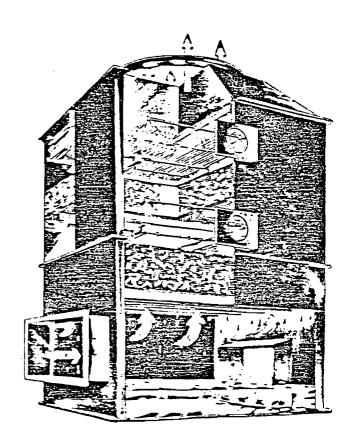
Beverly Pacific offers three (3) hasic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.



Beverly Pacific's Packed Scrubbers are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.

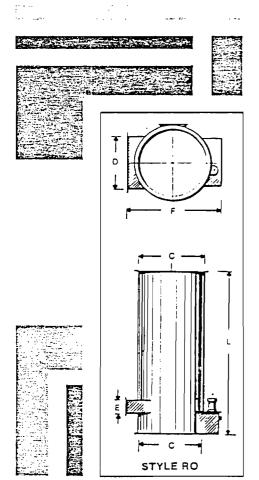
Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.

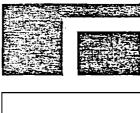


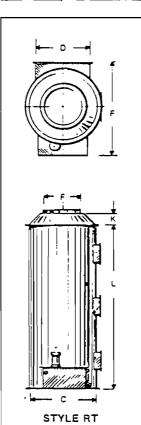


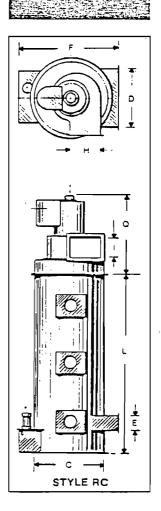
PACKED SCRUBBER DIMENSIONAL CHART MODEL NUMBERS DIMENSIONS IN INCHES

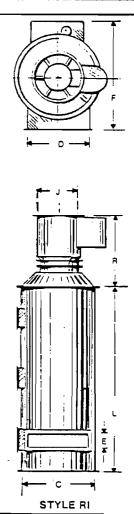
	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-30	PS-30	PS-40	PS-50
Α	78	82	84	94	101	108	112	114	118	118
В	24	36	42	48	60	72	84	96	108	120
С	28	40	48	58	72	84	96	108	120	136
D	22	34	40	46	58	70	80	92	104	116
E	6	8	10	11	12	16	18	20	24	24
F	46	58	66	76	90	102	114	126	138	154
G	. 42	54	60	66	78	90	102	114	126	138
н	13%	16%	221/2	261/4	291/2	351/4	39	471/4	52%	63%
I	10%	12%	17	201/2	22¾	27	30	371/2	40¾	491/4
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	16	19	. 20	24	24
L	84	87	89	104	112	118	122	124	128	128
M <sup>.</sup>	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
0	38	52	58	65	79	91	106	119	131	145
Р	14	16	22	26	30	36	42	50	54	66
Q	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120 ·	141
S	46	52	59	69	72	79	82	97	100	110
T	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	121/4	15	20	241/2	27	33	361/2	441/2	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	<b>30–</b> 40	40-50
RECIRC. GPM MAKE-UP GPM	7 0.7	15 1.5	25 2.0	35 3.0	45 4.0	75 7.0	105 10.0	135 13.0	175 17:0	225 22.0
HT OP. WT. HT SHIP WT.	388 220	745 385	1110 550	1570 770	· 2690 1210	4085 1925	5670 2750	7595 3795	11790 5390	16040 7040
VT OP. WT. VT SHIP WT.	318 150	660 300	1060 500	1500 700	2630 1150	3910 1750	5470 2550	7400 3600	11650 5250	15800 6800

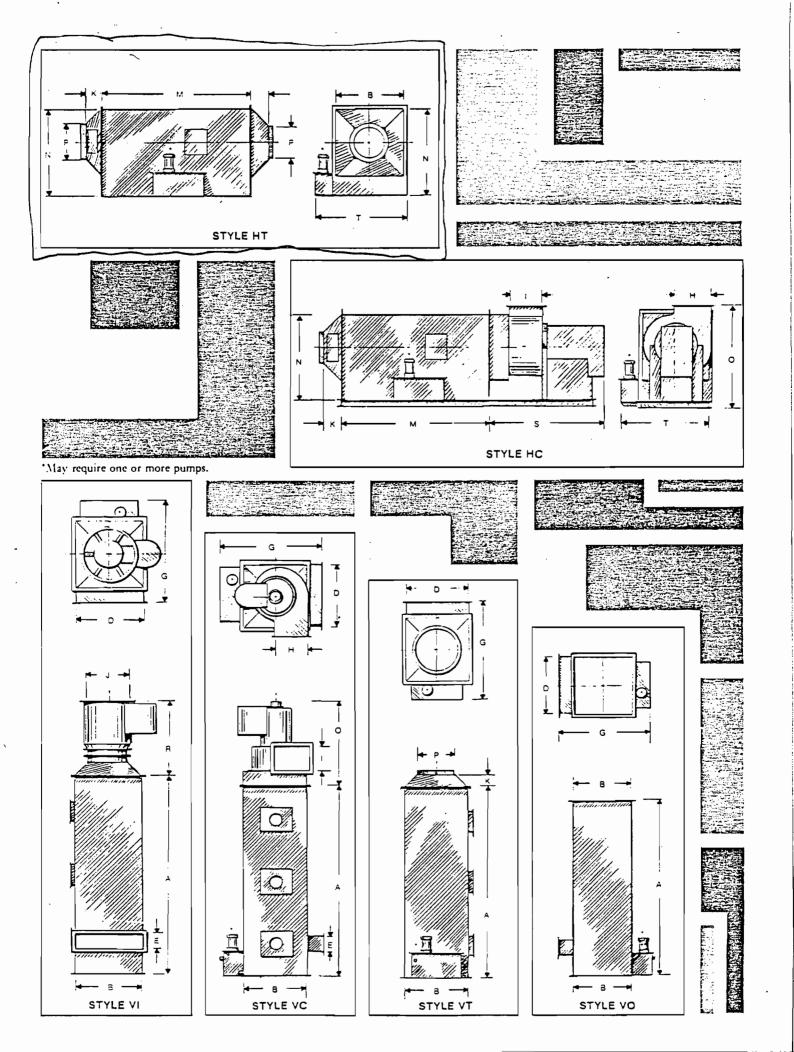












#### COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

#### SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

#### SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

#### ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5'' W.G.

#### CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

# OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54995

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APR 21 1982

SAINT JOHNS RIVER DISTRICT

APR 26 1982

AIR POLLUTION SOURCES

501	JRCE TYPE:	[ ] New ! [ ] Existing !
APF	PLICATION TYPE: [X] Construction [ ] Operation [ ] [	Modification
cor	MPANY NAME: Harris Semiconductor	COUNTY: Brevard
lder No.	ntify the specific emission point source(s) addressed in this app 2, Gas Fired) <u>Building 63 Solvent Vapor Exhau</u>	plication (i.e. Lime Kiln No. 4 with Venturi Scrubber; Peeking Unit st Scrubber (FS-63-1)
sou		City Palm Bay
	UTM: East17-538700	North17-3100900
	Latitude 28 o 01 , 20 <sub>"N</sub>	Longitude 80 o 36 , 10 , w
A DC	PLICANT NAME AND TITLE: P.R. Bumgarner, Manag	
	PLICANT ADDRESS: PT-030 Box 883, Melbourne	
ДРТ	FLICANT ADDRESS:	
	SECTION I: STATEMENTS BY	APPLICANT AND ENGINEER
A.	APPLICANT	•
	I am the undersigned owner or authorized representative* of	Harris Semiconductor
	I certify that the statements made in this application for a	
	<ul> <li>permit are true, correct and complete to the bast of my k</li> <li>pollution control source and pollution control facilities in</li> <li>Florida Statutes, and all the rules and regulations of the de</li> </ul>	nowledge and bolief. Further, I agree to maintain and operate the such a manner as to comply with the provision of Chapter 403, partment and revisions thereof. I also understand that a permit, if II promptly notify the department upon sale or legal transfer of the
•At	ttach letter of authorization	Signed: Oungaine
		P.R. Bumgarner, Mgr. FaciCities Engineering
	•	. Name and Title (Please Type)
		Date: 2-23-82 Telephone No. 724-7657
в.	PROFESSIONAL ENGINEER REGISTERED IN FLORIDA	(where required by Chapter 471, F.S.)
	be in conformity with modern engineering principles application. There is reasonable assurance, in my program maintained and operated, will discharge an effluent that rules and regulations of the department. It is also agreed that	n control project have been designed/examined by me and found to able to the treatment and disposal of pollutants characterized in the ifessional judgment, that the pollution control facilities, when proposition with all applicable statutes of the State of Florida and the title undersigned will furnish, if authorized by the owner, the application of the pollution control facilities and, if applicable, pollution
		Signed: Charles Back
	·	Chester C. Bach
	(Affix Seal)	Name (Please Type)
	(Attix Seat)	Harris Semiconductor
		Company Name (Please Type)
	•	PT-30 Box 883 Melbourne, FL 32901  Mailing Address (Please Type)
	Florida Registration No. 19110	Date: 2-23-82 Telephone No. 724-7324
	Piorida Hegistration No.	Date: relephone No

### SECTION II: GENERAL PROJECT INFORMATION

Describe the nature and extent of the project. Refer to pollution control equipment, and e formance as a result of installation. State whether the project will result in full compliance.	expected improvements in source per
Building 63 will utilize laboratory hood type work stations	· ·
conditions for the manufacture of semiconductors. All chemi	
1-2 gallon containers in which the devices are immersed. Ve	
exhaust air is minimal. Air is exhausted via a 10,000 cfm f by Beverly Pacific.	ume scrubber manutacture
Schedule of project covered in this application (Construction Permit Application Only)	
Start of Construction 5-1-82 Completion of Construction	9-1-82
Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for project serving pollution control purposes. Information on actual costs shall be furnished permit.)  Fan/Wet Scrubber \$30,500.00	or individual components/units of the distribution of the distribution for operation for operation for operation for operations.
Indicate any previous DER permits, orders and notices associated with the emission point, tion dates.	
Building 63 is new construction located approximately 1000	ft from building 54
which has current operating permits.	
if seasonal, describe:	
If this is a new source or major modification, answer the following questions. (Yes or No)	
1. Is this source in a non-attainment area for a particular pollutant?	no
a. If yes, has "offset" been applied?	
b. If yes, has "Lowest Achievable Emission Rate" been applied?	
c. If yes, list non-attainment pollutants.	
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.	no
<ol><li>Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.</li></ol>	no
4. Do "Standards of Performance for New Stationary Sources" (NSPS) apply to this source?	no
5. Do "National Emission Standards for Hazardous Air Pollutants" (NESHAP) apply to this source?	no
Attach all supportive information related to any answer of "Yes". Attach any justification considered questionable.	for any answer of "No" that might b

DER FORM 17-1.122(16) Page 2 of 10

# SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

# A. Raw Materials and Chemicals Used in your Process, if applicable:

Dii	Contam	ninants	Utilization	Relate to Flow Diagram	
Description	Туре	% Wt	Rate - lbs/hr		
See Attachment A				See Attachment B	
•					
			•		

В.	Process Rate, if applicable: (See Section V, Item 1)
	1. Total Process Input Rate (lbs/hr):
	2. Product Weight (lbs/hr): semiconductor wafer weighs 12 gms.

#### C. Airborne Contaminants Emitted:

Nome	Emiss	ion <sup>1</sup>	Allowed Emission <sup>2</sup> Allowable <sup>3</sup>		Potential Emission <sup>4</sup>		Relate	
Name of Contaminant	Maximum lbs/hr	Actual T/yr	Rate per Ch. 17-2, F.A.C.	Emission lbs/hr	lbs/hr	T/yr	to Flow Diagram	
See Attachment	A		n/a	n/a			See Attachmen	
	-			1				
							i	

D. Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup> Mfg. Design	
Beverly Pacific Corp.	Solvent Vapor	85%	n/a		
Model# PS12VT/CB24				Data	
			· · · · · · · · · · · · · · · · · · ·		

<sup>1</sup>See Section V, Item 2.

51f Applicable

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<sup>&</sup>lt;sup>2</sup>Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. – 0.1 pounds per million BTU heat input)

<sup>&</sup>lt;sup>3</sup>Calculated from operating rate and applicable standard

<sup>&</sup>lt;sup>4</sup>Emission, if source operated without control (See Section V, Item 3)

Units Natural Gas, MMCF/hr; Fuel Oils, barrels/hr; Coal, Ibs/hr ivel Analysis:  ercent Sulfur:  Density:  Description of Waste  Type of Waste  Description of Waste  Descrip	Type	Type (Be Specific)		Consumption*			Maximum Heat Input	
recent Sulfur:				avg/hr	ma	k./hr	(MMBTU/hr)	
Percent Ash:								
recent Sulfur:	,		- : -		· · · · · · · · · · · · · · · · · · ·		<del>.</del>	
recent Sulfur:		<del></del>		<u>_</u> ·				
recent Sulfur:								· · · · · · · · · · · · · · · · · · ·
Percent Sulfur:		MMCF/hr; Fuel	Oils, barrels/hr;	Coal, lbs/hr		V		
Density:	•			•	Percent Ash:			
BTU/ b								
Type of Waste Type O (Plastics) Type I (Rubbish) Type II (Refuse) (Garbage) (Pathological) (Solid By-prod.)  Secription of Waste — Design Capacity (lbs/hr) — Design Capacity (lbs/hr) — Design Capacity (lbs/hr) — Approximate Number of Hours of Operation per day — days/week — days/we	•			_		_		
If applicable, indicate the percent of fuel used for space heating. Annual Averagen/a Maximum	•							
Scrubber water discharged to industrial wastewater treatment facility  I. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):  Stack Height: 35'0" ft. Stack Diameter: 24" ft. Gas Flow Rate: 8000/10,000 ACFM Gas Exit Temperature: 74 of Water Vapor Content: 1 % Velocity: 500 FP  SECTION IV: INCINERATOR INFORMATION n/a  Type of Waste Type O (Plastics) (Rubbish) (Refuse) (Garbage) (Pathological) (Liq & Gas By-prod.)  Lbs/hr Incinerated Description of Waste Operation per day Design Capacity (lbs/hr)  Approximate Number of Hours of Operation per day days/week	dier i dei Containn	ilanes (willeli ili	ay cause an pond					
Scrubber water discharged to industrial wastewater treatment facility  H. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):  Stack Height: 35'0" ft. Stack Diameter: 24" ff. Gas Flow Rate: 8000/10,000 ACFM Gas Exit Temperature: 74 or Water Vapor Content: 1 % Velocity: 500 FP  SECTION IV: INCINERATOR INFORMATION n/a  Type of Waste Type O (Plastics) (Rubbish) (Refuse) (Garbage) (Pathological) (Liq & Gas By-prod.)  Description of Waste (Ibs/hr) Design Capacity (Ibs/hr) Approximate Number of Hours of Operation per day Annufacturer days/week  Manufacturer days and Flow Characteristics (Provide data for each stack):  Stack Height Treatment facility  ft. Stack Diameter: 24" ff. Stack Diameter: 24" or Fr. Stack Diameter	If applicable i	ndicate the ner	cent of fuel used	for space heating	na Annual Av	erana n/a	Maximum	
Scrubber water discharged to industrial wastewater treatment facility  I. Emission Stack Geometry and Flow Characteristics (Provide data for each stack):  Stack Height: 35'0"						erage	·	
Emission Stack Geometry and Flow Characteristics (Provide data for each stack):   Stack Height: 35'0"	• •		-					
Stack Height: 35'0" ft. Stack Diameter: 24" ft  Gas Flow Rate: 8000/10,000 ACFM Gas Exit Temperature: 74 or  Water Vapor Content: 1 % Velocity: 500 FP  SECTION IV: INCINERATOR INFORMATION n/a  Type of Waste Type O (Plastics) Type I (Rubbish) Type II (Garbage) Type IV (Liq & Gas By-prod.)  Lbs/hr Incinerated (lbs/hr) Design Capacity (lbs/hr)  Operation of Waste Total Weight Incinerated (lbs/hr) Design Capacity (lbs/hr)  Approximate Number of Hours of Operation per day Manufacturer Manufacturer	Scrubbei	r water dis	scharged to	<u>industrial</u>	<u>wastewate</u>	<u>r treatment f</u>	<u>acility</u>	
Stack Height: 35'0" ft. Stack Diameter: 24" ft  Gas Flow Rate: 8000/10,000 ACFM Gas Exit Temperature: 74 or  Water Vapor Content: 1 % Velocity: 500 FP  SECTION IV: INCINERATOR INFORMATION n/a  Type of Waste Type O (Plastics) (Rubbish) Type II (Garbage) (Pathological) (Solid By-prod.)  Lbs/hr Incinerated (lbs/hr) Design Capacity (lbs/hr) Approximate Number of Hours of Operation per day Manufacturer Annufacturer day days/week								
Stack Height: 35 °0" ft. Stack Diameter: 24" ft. Gas Flow Rate: 8000/10,000 ACFM Gas Exit Temperature: 74 OF Water Vapor Content: 1 % Velocity: 500 FP  SECTION IV: INCINERATOR INFORMATION n/a  Type of Waste Type O (Plastics) (Rubbish) (Refuse) (Garbage) (Pathological) (Solid By-prod.)  Lbs/hr Incinerated (Ibs/hr) Design Capacity (Ibs/hr) Approximate Number of Hours of Operation per day Manufacturer day days/week Manufacturer								
Stack Height: 35 °0" ft. Stack Diameter: 24" ft. Gas Flow Rate: 8000/10,000 ACFM Gas Exit Temperature: 74 OF Water Vapor Content: 1 % Velocity: 500 FP  SECTION IV: INCINERATOR INFORMATION n/a  Type of Waste Type O (Plastics) (Rubbish) (Refuse) (Garbage) (Pathological) (Solid By-prod.)  Lbs/hr Incinerated (Ibs/hr) Design Capacity (Ibs/hr) Approximate Number of Hours of Operation per day Manufacturer day days/week Manufacturer	H Emission Stack	Geometry and	l Flow Characteri	stics (Provide d	ata for each sta	ck):		
Gas Flow Rate: 8000/10,000 ACFM Gas Exit Temperature: 74 OF Water Vapor Content: 1 % Velocity: 500 FP  SECTION IV: INCINERATOR INFORMATION n/a  Type of Waste Type O (Plastics) Type II (Refuse) Type III (Garbage) (Pathological) (Solid By-prod.)  Lbs/hr Incinerated Paper (Ibs/hr) Design Capacity (Ibs/hr) days/week Manufacturer days/week		25101	_					f1
SECTION IV: INCINERATOR INFORMATION  n/a  Type of Waste Type O (Plastics) Type I (Rubbish) Type II (Refuse) (Garbage) (Pathological) (Lig & Gas By-prod.)  Lbs/hr Incinerated (lbs/hr) Design Capacity (lbs/hr)  Approximate Number of Hours of Operation per day Manufacturer Manufacturer								
Type of Waste Type O (Plastics) (Rubbish) (Refuse) (Garbage) (Pathological) (Liq & Gas By-prod.)  Lbs/hr Incinerated (lbs/hr) Design Capacity (lbs/hr) days/week Manufacturer				•				
Type of Waste Type O (Plastics) Type I (Rubbish) Type II (Refuse) Type III (Pathological) Type IV (Liq & Gas By-prod.)  Lbs/hr Incinerated Coscription of Waste Description of Hours of Operation per day Description of Waste Description of Wa								
Type of Waste Type O (Plastics) Type I (Rubbish) Type II (Refuse) Type III (Pathological) Type IV (Liq & Gas By-prod.)  Lbs/hr Incinerated Coscription of Waste Description of Hours of Operation per day Description of Waste Description of Wa	,							
Type of Waste  Type O (Plastics)  Type I (Rubbish)  Type II (Garbage)  Type IV (Liq & Gas By-prod.)  Type V (Liq & Gas By-prod.)			SECTION	IV: INCINER	ATOR INFOR	MATION		
Type of Waste (Plastics) (Rubbish) (Refuse) (Garbage) (Pathological) (Liq & Gas By-prod.)  Lbs/hr Incinerated (lbs/hr) Design Capacity (lbs/hr) days/week				n/a			,	
Lbs/hr Incinerated  Description of Waste	<b>-</b>	Type O	Type I	Type II	Type III	Type IV	Type V	
Description of Waste	Type of Waste	(Plastics)	(Rubbish)	(Refuse)	(Garbage)	(Pathological)	By-prod.)	
Description of Waste	1.5-/						•	
Description of Waste Design Capacity (lbs/hr) Design Capacity (lbs/hr) days/week days/week								
Description of Waste Design Capacity (lbs/hr) Design Capacity (lbs/hr) Design Capacity (lbs/hr) days/week								
Approximate Number of Hours of Operation per day days/week	Description of Waste	·						
Manufacturer	Total Weight Inciner	rated (lbs/hr) _			Design Capaci	ty (lbs/hr)		
	Approximate Numb	er of Hours of (	Operation per day	/ <del></del>		days/v	veek	
	Manufacturer							

	Volume Heat Release (ft)3 (BTU/hr)		1	Fuel	Temperature (°F)	
•			Type	BTU/hr		
Primary Chamber						
Secondary Chamber				·		
Stack Height:		ft. Stack Diameter .		Stack Tem	o	
Gas Flow Rate:		ACFM		_ DSCFM* Velocity _	FPS	
*If 50 or more tons per cess air.	day design capad	city, submit the emissi	ons rate in grains p	per standard cubic foot	dry gas corrected to 50% ex-	
Type of pollution control	device: [] C	yclone [ ] Wet Scrub	ber [] Afterbu	irner [ ] Other (spec	ify)	
Brief description of opera	ting characterist	cs of control devices:				
·			<u> </u>			
	•		<u> </u>		· · · · ·	
Ultimate disposal of any e	effluent other th	an that emitted from th	ne stack (scrubber	water, ash, etc.):		
					·	
			·			

#### **SECTION V: SUPPLEMENTAL REQUIREMENTS**

Please provide the following supplements where required for this application.

- 1. Total process input rate and product weight show derivation.
- 2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc.,) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
- 3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
- 4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio: for scrubber include cross-section sketch, etc.).
- 5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
- 6. An 8%" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
- 7. An 8%" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
- 8. An 8%" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

#### SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

n/a

Contaminant	Rate or Concentration
•	
	I technology for this class of sources (If yes, attach copy) [ ] Yes [ ] No
Contaminant	Rate or Concentration
What emission levels do you propose as bes	st available control technology?
Contaminant	Rate or Concentration
•	<del></del>
	•
Describe the existing control and treatmen	·
Describe the existing control and treatmen  1. Control Device/System:	·
Describe the existing control and treatmen  1. Control Device/System:  2. Operating Principles:	·
1. Control Device/System:	·
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> </ol>	t technology (if any).
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> </ol>	t technology (if any).  4. Capital Costs:
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> <li>Useful Life:</li> </ol>	t technology (if any).  4. Capital Costs:  6. Operating Costs:
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> <li>Useful Life:</li> <li>Energy:</li> </ol>	t technology (if any).  4. Capital Costs:  6. Operating Costs:
<ol> <li>Control Device/System:</li> <li>Operating Principles:</li> <li>Efficiency: *</li> <li>Useful Life:</li> <li>Energy:</li> <li>Emissions:</li> </ol>	t technology (if any).  4. Capital Costs:  6. Operating Costs:  8. Maintenance Cost:

<sup>\*</sup>Explain method of determining D 3 above.

	. 10. 318	CV Laiginerera			•
•	. a.	Height:	ft.	ь.	Diameter:
	c.	Flow Rate:	ACFM	d.	Temperature:
•	e.	Velocity:	FPS	,	•
	Describ	e the control and treatment technology ava	ilable (As i	many	types as applicable, use additional pages if necessary).
	1.				
	a.	Control Device:			
	b.	Operating Principles:			
	c.	Efficiency*:		ď.	Capital Cost:
	e.	Useful Life:		f.	Operating Cost:
	<b>g.</b>	Energy*:		h.	Maintenance Cost:
	i.	Availability of construction materials and	process ch	emic	als:
	j.	Applicability to manufacturing processes:		-	
	k.	Ability to construct with control device, i	install in av	ailab	le space, and operate within proposed levels:
	2.				
	a.	Control Device:			
	<b>b.</b>	Operating Principles:			
	<b>c.</b> .	Efficiency*:		d.	Capital Cost:
	e.	Useful Life:			Operating Cost:
	g.	Energy**:	-	h.	Maintenance Costs:
	i.	Availability of construction materials and	process ch	emic	als:
	j.	Applicability to manufacturing processes:	:		·
	k.	Ability to construct with control device, i	install in av	ailab	ele space, and operate within proposed levels:
•E:	xplain me	ethod of determining efficiency.			
		be reported in units of electrical power — K	WH design	rate	
	3.	·			•
	a.	Control Device:			
	b.	Operating Principles:			
	c.	Efficiency*:		d.	Capital Cost:
•	e.	Life:		f.	Operating Cost:
	g.	Energy:		 h.	Maintenance Cost:
	7.	31.		,	

ft. ٥F

E.

<sup>\*</sup>Explain method of determining efficiency above.

	plicability to manufacturing processes:		
k. Abi	lity to construct with control device, in	nstall in availab	le space and operate within proposed levels:
4.			
a. Cor	ntrol Device		
b. Ope	erating Principles:		
c. Eff	iciency*:	d.	Capital Cost:
e. Life	<b>:</b>	f.	Operating Cost:
g. Ene	ergy:	· h.	Maintenance Cost:
i. Ava	ilability of construction materials and p	process chemic	als:
j. Apı	plicability to manufacturing processes:		
k. Abi	lity to construct with control device, in	istall in availab	le space, and operate within proposed levels:
Describe the	control technology selected:		
1. Control	Device:		·
2. Efficien	cy *:	3.	Capital Cost:
4. Life:		5.	Operating Cost:
6. Energy:	•	7.	Maintenance Cost:
8. Manufac	cturer:		
9. Other lo	cations where employed on similar pro	cesses:	
a.			
(1)	Company:		
(2)	Mailing Address:		
(3)	City:	(4)	State:
(5)	Environmental Manager:		
(6)	Telephone No.:		
plain method	of determining efficiency above.		•
(7)	Emissions*:		
	Contaminant		Rate or Concentration
			•
(8)	Process Rate*:		
b.			·
(1)	Company:		
(2)	Mailing Address:		
(3)	City:	(4)	State:

Availability of construction materials and process chemicals:

(6)	Telephone No.:		
(7)	Emissions*:		
	Contaminant	Rate or Concentration	
		· · · · · · · · · · · · · · · · · · ·	
(8)	Process Rate*:		
	Process Rate*:		

Environmental Manager:

<sup>\*</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

#### SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

n/a

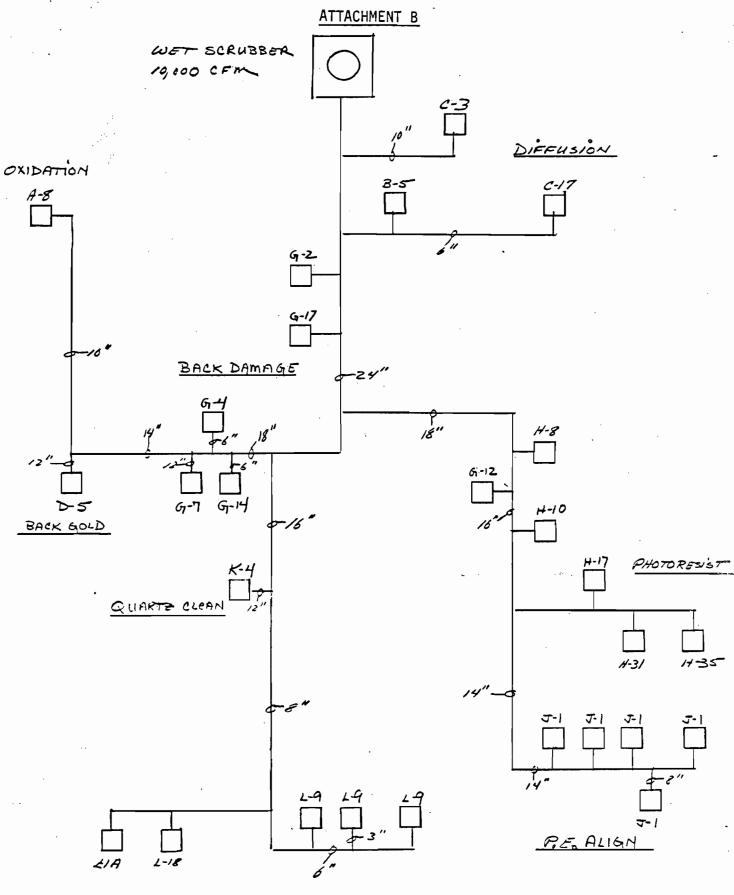
А.	Company Monitored Data	
	1 no sites TSP ( ) SO <sup>2</sup> •	Wind spd/dir
	Period of monitoring / / / to / / month day year month day yea	<del></del>
	Other data recorded	
	Attach all data or statistical summaries to this application.	
	2. Instrumentation, Field and Laboratory	
	a) Was instrumentation EPA referenced or its equivalent?Yes	No
	b) Was instrumentation calibrated in accordance with Department procedures?	Yes No Unknown
В.	Meteorological Data Used for Air Quality Modeling	•
	1Year(s) of data from/ / to/ /	<del>-</del>
	2. Surface data obtained from (location)	
	3. Upper air (mixing height) data obtained from (location)	······································
	4. Stability wind rose (STAR) data obtained from (location)	
C.	Computer Models Used	
	1	Modified? If yes, attach description.
	2	Modified? If yes, attach description.
	3	Modified? If yes, attach description.
	4	Modified? If yes, attach description.
	Attach copies of all final model runs showing input data, receptor locations, and prin-	ciple output tables.
D.	Applicants Maximum Allowable Emission Data	
	Pollutant Emission	n Rate
	TSP	grams/sec
	so <sup>2</sup>	grams/sec
E.	Emission Data Used in Modeling	
	Attach list of emission sources. Emission data required is source name, description UTM coordinates, stack data, allowable emissions, and normal operating time.	on point source (on NEDS point number),
F.	Attach all other information supportive to the PSD review.	
*Spe	ecify bubbler (B) or continuous (C).	
G.	Discuss the social and economic impact of the selected technology versus other approached to the selected technology versus other approached technology.	olicable technologies (i.e., jobs. payroll, pro- ources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

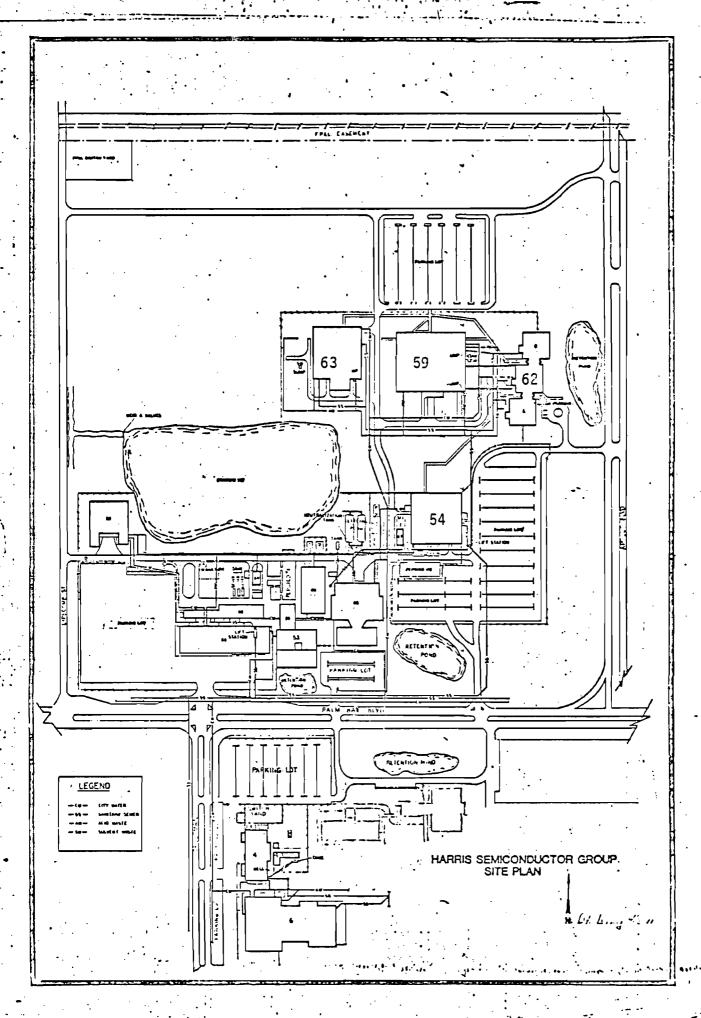
# ATTACHMENT A HARRIS SEMICONDUCTOR EXHAUST SCRUBBER - BUILDING 63

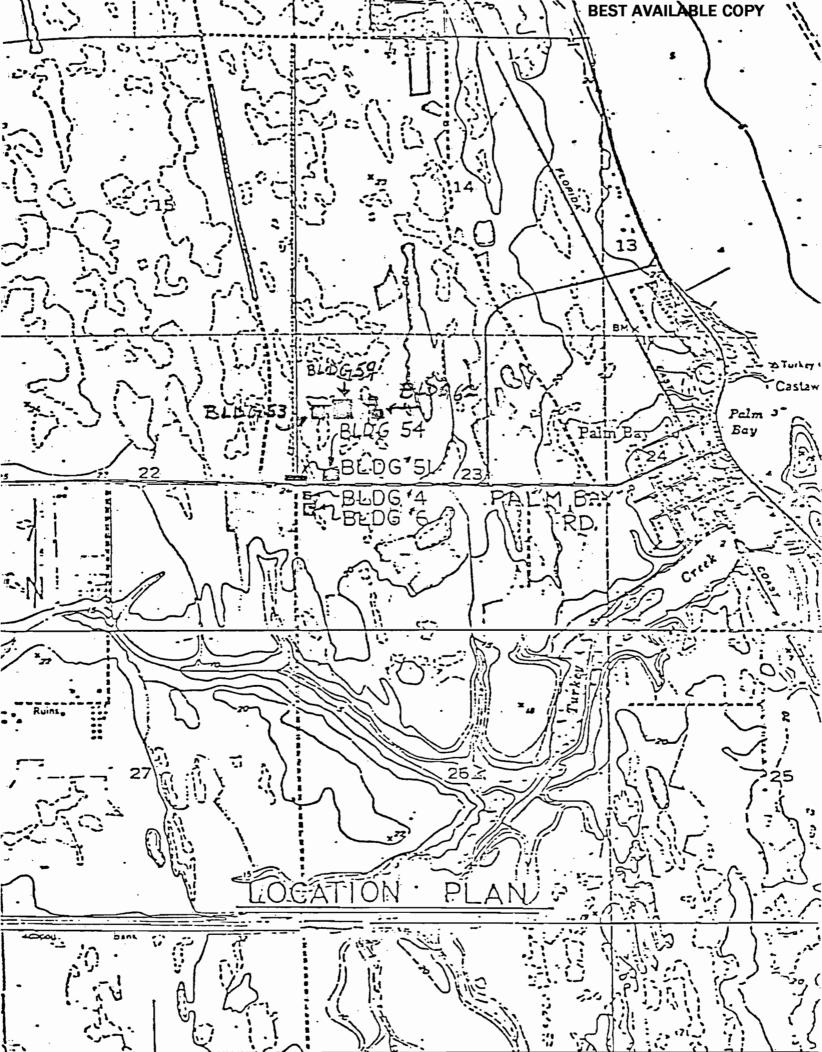
SYSTEM 1 SOLVENT

RAW UTILIZATION		EMISS	ION	POTENTIAL	. EMISSION
MATERIAL	RATE 1b/hr	MAXIMUM lb/hr	ACTUAL ton/yr	lb/hr	ton/yr
Acetone	.984	0.012	0.036	0.077	0.244
Methanol	.977	0.075	1.577	0.498	0.236
i '					
Trichloroethylem		0.035	0.111	0.235	0.744
Xylene	1.07	0.050	0.160	0.336	1.064
Propanol .	6.83	0.014	0.044	0.093	0.295
Butyl Acetate	2.85	0.013	0.040	0.085	0.269
Freon	1.39	0.008	0.027	0.057	0.179
Photoresist	1.09	0.11	<b>0.57</b> 0	1.2	3.801
Ethanol	6.86	0.006	0.020	0.042	0.020
·			. ,		
			,		
			,		
<b>-</b> -•					

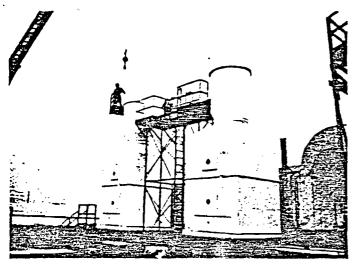


EPT STORAGE





#### **BEST AVAILABLE COPY**



#### AIR POLLUTION CONTROL EQUIPMENT

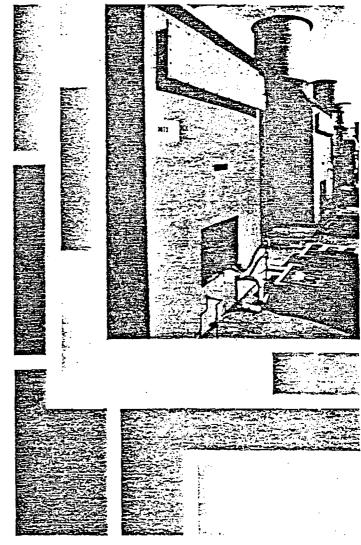
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

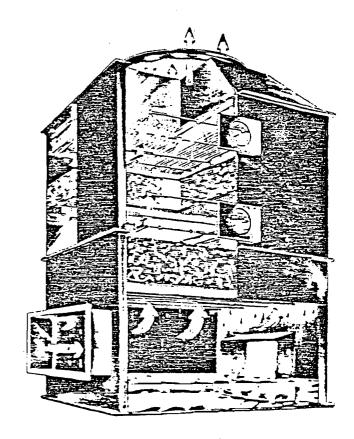
Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.



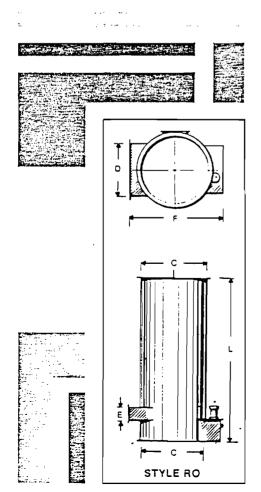
Beverly Pacific's Packed Scrubbers are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.

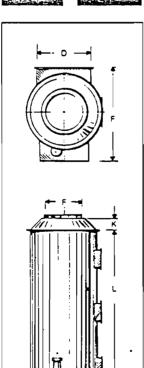
Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.



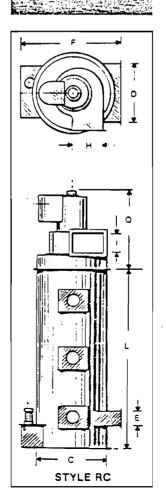


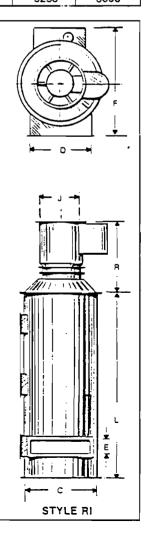
	PACKED SCRUBBER DIMENSIONAL CHART MODEL NUMBERS DIMENSIONS IN INCHES									
ونفري والتحميدي	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50
Α	78	82	84	94	101.	108	112	114	118	118
В	24	- 36	42	48	60	72	84	96	108	120
С	28	40	48	58	72	84	96	108	120	136
ם	22	34	40	46	58	70	80	92	104	116
E	6	-8	10	11	12 _	16	18	20	24	24
F	46	- 58	66	76	90	102	114	126	138	154
G	42	54	60	66	78	90	102	114	126	138
н	13%	16%	221/2	261/4	291/2	351/4	39	471/4	52%	63%
1	10 <del>%</del>	12%	17	201/2	22¾	27	30	371/2	40¾	49¾
J	18	22	28	34	38	45	50	62	66	80
K	6	8	10	10	12	16	19	. 20	24	24
L	84	87	89	104	112	118	122	124	128	128
M	64	64	70	77	89	102	102	102	114	114
N	35	49	55	62	76	88	103	116	128	142
0	38	52	58	65	79	91	106	119	131	145
P	14	16	22 -	26	30	36	42	50	54	66
a	45	50	61	64	68	72	78	86	93	103
R	35	44	55	65	75	85	94	108	120	141
S	46	52	59	69	72	79	82	97	100	110
Т	36	48	54	60	72	84	96	108	120	132
WHEEL DIA.	121/4	15	20	241/2	27	33	3614	441/2	49	60
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50
RECIRC. GPM MAKE-UP GPM	7 0.7	15 1.5	25 2.0	35 3.0	45 4.0	75 7.0	105 10.0	135 13.0	175 17.0	225 22.0
HT OP. WT.	388 220	745 385	1110 550	1570 770	2690 1210	4085 1925	5670 2750	7595 3795	11790 5390	16040 7040
VT OP. WT. VT SHIP WT.	318 150	660 300	1060 500	1500 700	2630 1150	3910 1750	5470 2550	7400 3600	11650 5250	15800 6800

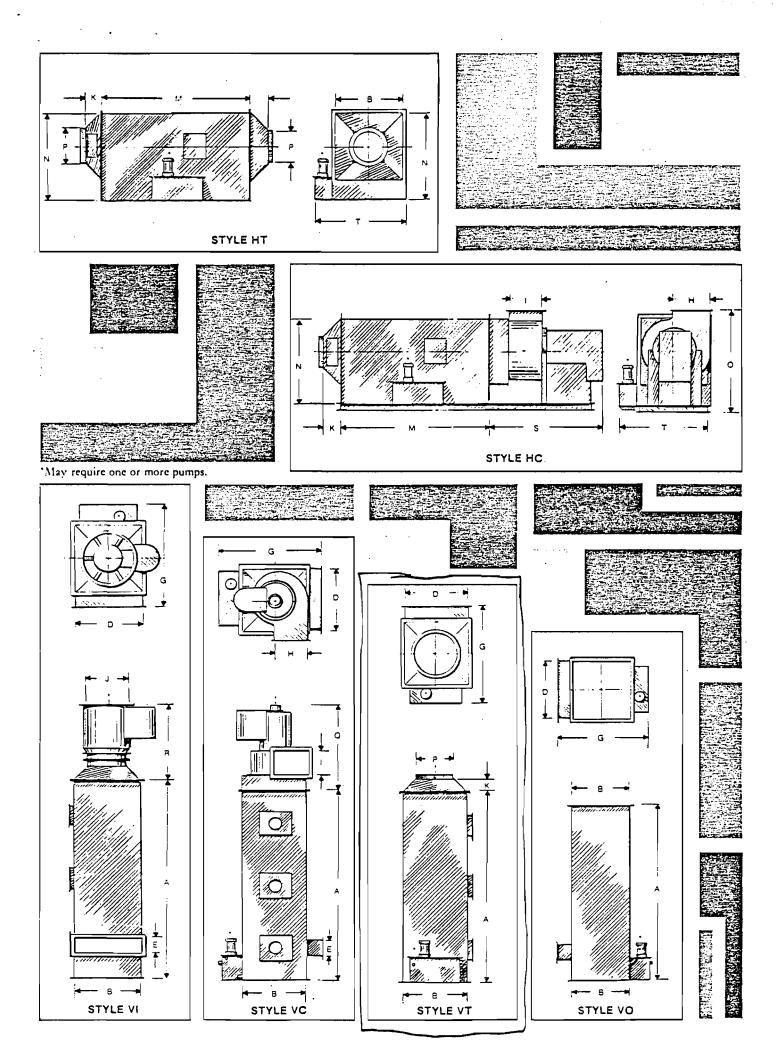




STYLE RT







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## COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

### SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

#### SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

#### ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

#### CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

# OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

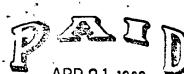
RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

AC 05-54996



APR 21 1982

SAINT JOHNS RIVER DISTRICT

# DER

STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION
ON TO OPERATE/CONSTRUCT
AIR POLLUTION SOURCES



				60
SOU	RCE TYPE:Sta	ationary	$-$ [ $\chi$ ] New <sup>1</sup> [] Existing	1 954567
APPL	LICATION TYPE:	[X] Construction [ ] Operation [	] Modification	
СОМ	PANY NAME: Ha	arris Semiconductor		COUNTY: Brevard
Ident No. 2	tify the specific emis 2, Gas Fired)Bui	ssion point source(s) addressed in this Ilding 63, Acid Exhaust Vap	application (i.e. Lime Kiln Noor Scrubber (FS-63-2	o. 4 with Venturi Scrubber; Peeking Unit
SOU	RCE LOCATION:	Street Palm Bay Road		City Palm Bay
		UTM: East 17-538700		
		Latitude <u>28</u> o <u>01</u> · <u>20</u>	"N Longitude	80 • 36 · 10 ·w
APPL	LICANT NAME AND	TITLE: P. R. Bumgarner. Ma	nager Facilities Eng	ineering
APPL	LICANT ADDRESS:	PT-030 Box 883, Melbourn	e, FL 32901	•
<b>A</b> :	APPLICANT	SECTION I: STATEMENTS	BY APPLICANT AND ENGI	NEER
A.			. Harris Semiconduc	ctor
	Fam the undersigne	atements made in this application for a	construction	<u> </u>
*Atta	Florida Statutes, ar	nd all the rules and regulations of the artment, will be non-transferable and I ment.	department and revisions the will promptly notify the dep  Signed:  P.R. Bumgarner, 1  Name	are for the provision of Chapter 403. Are of. I also understand that a permit, if artment upon sale or legal transfer of the formation of the
B	PROFESSIONAL E	NGINEER REGISTERED IN FLORIC	•	
	be in conformity we permit application. erly maintained and rules and regulation	vith modern engineering principles app There is reasonable assurance, in my p d operated, will discharge an effluent th hs of the department. It is also agreed t	licable to the treatment and c professional judgment, that tr nat complies with all applicab hat the undersigned will furni	n designed/examined by me and found to disposal of pollutants characterized in the pellution control facilities, when propels statutes of the State of Florida and the sh, if authorized by the owner, the applicable pollution and the Characteristics and the specific facilities and the specific facilities and the control facilities and the specific facilities and the control facilities and the specific facilities and the
			Chester C. Back	
	(Affix Seal)		Harris Semicono	
				iny Name (Please Type)
		· ·		Melbourne, FL 32901  Address (Please Type)
	Florida Registration	n No. 19110	`	

#### SECTION II: GENERAL PROJECT INFORMATION

Describe the nature and extent of the project. Refer to pollution control equipment, and exp formance as a result of installation. State whether the project will result in full compliance. At	ected improvements in source per
Building 63 will utilize laboratory hood type work station to	•
conditions for the manufacture of semiconductors. All chemicals	
gallon containers in which the devices are immersed. Vessel sur	
exhaust air is minimal. Air is exhausted via a 50.000 cfm fume	•
by Beverly Pacific. Schedule of project covered in this application (Construction Permit Application Only)	SCHIMET MANUTACHITER
·	0 1 02
Start of Construction 5-1-82 Completion of Construction	
Costs of pollution control system(s): (Note: Show breakdown of estimated costs only for i project serving pollution control purposes. Information on actual costs shall be furnished permit.)	
Fan/Met Scrubber \$34,000.00	
, .	,
1 address and the DER constant and a salar and a salar and a label	
Indicate any previous DER permits, orders and notices associated with the emission point, incition dates.	cluding permit issuance and expir
Building 63 is new construction loacted approximately 1000 ft	from Building 54 which
has current operating permits.	
Normal equipment operating time: hrs/day 24 ; days/wk 7 ; wks/yr 52 if seasonal, describe:	; it power plant, nrs/yr
	·
	•
If this is a new source or major modification, answer the following questions. (Yes or No)	
1. Is this source in a non-attainment area for a particular pollutant?	no .
a. If yes, has "offset" been applied?	no .
b. If yes, has "Lowest Achievable Emission Rate" been applied?	no .
	no .
c. If yes, list non-attainment pollutants.	no
	no
2. Does best available control technology (BACT) apply to this source? If yes, see Section VI.	no
2. Does best available control technology (BACT) apply to this source? If yes, see	,
<ol> <li>Does best available control technology (BACT) apply to this source? If yes, see Section VI.</li> <li>Does the State "Prevention of Significant Deterioriation" (PSD) requirements</li> </ol>	no
<ol> <li>Does best available control technology (BACT) apply to this source? If yes, see Section VI.</li> <li>Does the State "Prevention of Significant Deterioriation" (PSD) requirements apply to this source? If yes, see Sections VI and VII.</li> <li>Do "Standards of Performance for New Stationary Sources" (NSPS) apply to</li> </ol>	no

Attach all supportive information related to any answer of "Yes". Attach any justification for any answer of "No" that might be considered questionable.

### SECTION III: AIR POLLUTION SOURCES & CONTROL DEVICES (Other than Incinerators)

#### Raw Materials and Chemicals Used in your Process, if applicable:

Description	Contan	ninants	Utilization	Relate to Flow Diagram		
	Туре	% Wt	Rate - lbs/hr			
• ,		.				
	1					
See Attachment A				See Attachment B		
			•			

<b>B.</b>	Process Rate, if applicable:	(See Section V	, Item 1	I)	
-----------	------------------------------	----------------	----------	----	--

1. Total Process Input Rate (lbs/hr): .

2. Product Weight (lbs/hr): semiconductor wafer weighs 12 ams

#### Airborne Contaminants Emitted:

Name of Contaminant	Emission <sup>1</sup>		Allowed Emission <sup>2</sup>	Allowable <sup>3</sup>	Potential Emission <sup>4</sup>		Reiate	
	Maximum lbs/hr	Actual T/yr	Rate per Ch. 17-2, F.A.C.	Emission lbs/hr	lbs/hr	T/yr	to Flow Diagram	
				1				1
								1
See Attachment	A			n/a			See Attachment	B
								1
				1				Ī

Control Devices: (See Section V, Item 4)

Name and Type (Model & Serial No.)	Contaminant	Efficiency	Range of Particles <sup>5</sup> Size Collected (in microns)	Basis for Efficiency (Sec. V, It <sup>5</sup>
Beverly Pacific Corp.	Acid mist	95%	n/a	Mfg. Design
Model # PS50HT/CB60				Data
		·		

<sup>1</sup>See Section V, Item 2.

DER FORM 17-1.122(16) Page 3 of 10

Reference applicable emission standards and units (e.g., Section 17-2.05(6) Table II, E. (1), F.A.C. — 0.1 pounds per million BTU heat input)

<sup>3</sup>Calculated from operating rate and applicable standard

<sup>&</sup>lt;sup>4</sup>Emission, if source operated without control (See Section V, Item 3)

<sup>5</sup>If Applicable

	•					
E.	Fu	el	\$	n,	/	а

Type (Be Specific)	Consum	Consumption Maximum Heat Input (MMBTU/hr)		
Type (be Specific)	avg/hr	max./hr	(MMBTU/hr)	
	·			

					:		
					. !		
	<del></del>		•				
				<u></u>			
Units Natural Gas,	MMCF/hr; Fuel	Oils, barrels/hr;	Coal, lbs/hr				
Fuel Analysis:				•			
Percent Sulfur:				Percent Ash:			<u> </u>
Density:							
leat Capacity:		•	8TU/Ib				BTU/gal
Other Fuel Contami							•
, a.c. 1 00. 00a		, , , , , , , , , , , , , , , , , , , ,					
			· · · · · ·				
If applicable,	indicate the per	cent of fuel used	for space heati	ing. Annual Ave	rage	Maximum .	<del>.</del>
3. Indicate liquid	l or solid wastes	generated and m	ethod of dispo	sai.			
Scrubber	water disc	harged to i	ndustrial	wastewater ·	treatment fac	cility	
						•	
H. Emission Stac	k Geometry and	Flow Character	ictice (Provide o	data for each stac	٠١٠ <sup>.</sup>		
	-				: 4'6"		
Stack Height:							
					erature: 74		
Water Vapor (	Content:1	<u> </u>	%	Velocity:	500		FP\$
		SECTION	IIV: INCINE	RATOR INFORM	IATION		
		02011011	n/a				
		ı	T	<del>-  </del>		Type V	Type VI
Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	(Liq & Gas By-prod.)	(Solid By-prod.)

			<u>.</u>				
Type of Waste	Type O (Plastics)	Type I (Rubbish)	Type II (Refuse)	Type III (Garbage)	Type IV (Pathological)	Type V (Liq & Gas By-prod.)	Type VI (Solid By-prod.)
Lbs/hr Incinerated							
Description of Wast				Design Capacity	/ (lbs/hr)		
Approximate Numb	per of Hours of (	Operation per day	/ <del></del>		days/w	reek	·
11	•						
wanutacturer	_						

	4.0.001	Lieat Heicase			Temperature	
	(ft)3	(BTU/hr)	Туре	BTU/hr	(OF)	
Primary Chamber						
Secondary Chamber				·	•	
Stack Height:		ft. Stack Diameter		Stack Tem	p	
Gas Flow Rate:		ACFM		_ DSCFM* Velocity	FPS	
					t dry gas corrected to 50% ex	
Type of pollution control	device: [ ] C	yclone [ ] Wet Scrub	ber [] Afterbu	irner [ ] Other (spe	cify)	
Brief description of operat	ting characterist	ics of control devices: _				
	•		•			
			<u> </u>		<del></del>	
			<del></del>			
				<del>-</del>	<u> </u>	
Ultimate disposal of any e	ffluent other th	an that emitted from th	ne stack (scrubber	water, ash, etc.):		
					•	
		· · · · · · · · · · · · · · · · · · ·			·	
					·	

Fuel

#### SECTION V: SUPPLEMENTAL REQUIREMENTS

Please provide the following supplements where required for this application.

- 1. Total process input rate and product weight show derivation.
- 2. To a construction application, attach basis of emission estimate (e.g., design calculations, design drawings, pertinent manufacturer's test data, etc..) and attach proposed methods (e.g., FR Part 60 Methods 1, 2, 3, 4, 5) to show proof of compliance with applicable standards. To an operation application, attach test results or methods used to show proof of compliance. Information provided when applying for an operation permit from a construction permit shall be indicative of the time at which the test was made.
- 3. Attach basis of potential discharge (e.g., emission factor, that is, AP42 test).
- 4. With construction permit application, include design details for all air pollution control systems (e.g., for baghouse include cloth to air ratio; for scrubber include cross-section sketch, etc.).
- 5. With construction permit application, attach derivation of control device(s) efficiency. Include test or design data. Items 2, 3, and 5 should be consistent: actual emissions = potential (1-efficiency).
- 6. An 8%" x 11" flow diagram which will, without revealing trade secrets, identify the individual operations and/or processes. Indicate where raw materials enter, where solid and liquid waste exit, where gaseous emissions and/or airborne particles are evolved and where finished products are obtained.
- 7. An 8%" x 11" plot plan showing the location of the establishment, and points of airborne emissions, in relation to the surrounding area, residences and other permanent structures and roadways (Example: Copy of relevant portion of USGS topographic map).
- 8. An 8%" x 11" plot plan of facility showing the location of manufacturing processes and outlets for airborne emissions. Relate all flows to the flow diagram.

- 9. An application fee of \$20, unless exempted by Section 17-4.05(3), F.A.C. The check should be made payable to the Department of Environmental Regulation.
- 10. With an application for operation permit, attach a Certificate of Completion of Construction indicating that the source was constructed as shown in the construction permit.

#### SECTION VI: BEST AVAILABLE CONTROL TECHNOLOGY

n/a

Contaminant	Rate or Concentration
Has EPA declared the best available control t	echnology for this class of sources (If yes, attach copy) [ ] Yes [ ] No
Contaminant	Rate or Concentration
	· · · · · · · · · · · · · · · · · · ·
What emission levels do you propose as best a	the contract of the contract o
Contaminant	Rate or Concentration
•	
•	
Describe the existing control and treatment t	
Describe the existing control and treatment t	
Describe the existing control and treatment t  1. Control Device/System:	
Describe the existing control and treatment t  1. Control Device/System:  2. Operating Principles:	echnology (if any).
Describe the existing control and treatment to 1. Control Device/System: 2. Operating Principles: 3. Efficiency: *	echnology (if any).  4. Capital Costs:
Describe the existing control and treatment to 1. Control Device/System: 2. Operating Principles: 3. Efficiency: * 5. Useful Life:	echnology (if any).  4. Capital Costs:  6. Operating Costs:
Describe the existing control and treatment to 1. Control Device/System: 2. Operating Principles: 3. Efficiency: * 5. Useful Life: 7. Energy:	echnology (if any).  4. Capital Costs:  6. Operating Costs:
Describe the existing control and treatment to 1. Control Device/System: 2. Operating Principles: 3. Efficiency: * 5. Useful Life: 7. Energy: 9. Emissions:	4. Capital Costs: 6. Operating Costs: 8. Maintenance Cost:

<sup>\*</sup>Explain method of determining D 3 above.

	••••				•	
• , • ,	a.	Height:	ft.	b.	Diameter:	•
	C.	Flow Rate:	ACFM	d.	Temperature:	-
•	e.	Velocity:	FPS		•	
Desc	ribe	the control and treatment technology	available (As	many	y types as applicable, use additional pages if necess	ary).
1.						
	<b>a</b> .	Control Device:			•	
	b.	Operating Principles:				
	C.	Efficiency*:		d.	Capital Cost:	
	e.	Useful Life:		f. ·	· Operating Cost:	
!	<b>g</b> .	Energy*:		h.	Maintenance Cost:	•
	Ļ	Availability of construction materials	and process ch	emic	cals:	
	_					
	j.	Applicability to manufacturing proces		•		
	k.	Ability to construct with control device	ce, install in av	railab	ble space, and operate within proposed levels:	
2.						
	<b>a</b> .	Control Device:				
	b.	Operating Principles: .			•	
	C.	Efficiency*:		d.	Capital Cost:	
	<b>e.</b>	Useful Life:		f.	Operating Cost:	
	g.	Energy **:		∵h.	Maintenance Costs:	
	i.	Availability of construction materials	and process ch	nemic	cals:	
	j.	Applicability to manufacturing process	ses:			
	k.	Ability to construct with control device	ce, install in a	railab	ble space, and operate within proposed levels:	
		thod of determining efficiency.				
Energy 3.	to t	e reported in units of electrical power	– KWH desigr	ı rate	<b>2.</b>	
J.	<b>a</b> .	Control Device:				
:	b.	Operating Principles:			-	
	٠.	operating transport				
	C.	Efficiency*:		ď.	Capital Cost:	-
	ŧ.	Life:		f.	Operating Cost:	
	_	E	•	_	Malatanana Cart	

E.

<sup>\*</sup>Explain method of determining efficiency above.

		•			
Ļ	App	licability to manufacturing processes	:		
k.	Abil	ity to construct with control device,	install in availab	ple space and operate within proposed levels:	
4.					
a.	Cont	trol Device		•	
b.	Oper	rating Principles:			
c.	Effic	iency*:	· d.	Capital Cost:	
€.	Life:	•	f.	Operating Cost:	
g.	Ener		h.	Maintenance Cost:	
i.		lability of construction materials and			•
į.	Appl	licability to manufacturing processes	<b>:</b>		
k.	Abili	ity to construct with control device,	install in availab	ole space, and operate within proposed levels:	
Describ	e the c	control technology selected:			
1. Co	ntrol [	Device:		•	
2. Eff	ficienc	y*:	3.	Capital Cost:	
4. Lif	e:	•	5.	Operating Cost:	
6. En	ergy:		7.	Maintenance Cost:	
8. Ma		turer:			•
9. Oti	her loc	rations where employed on similar pr	'ocesses:		
a.					
	(1)	Company:			
	(2)	Mailing Address:			
	(3)	City:	(4)	State:	
	(5)	Environmental Manager:		•	
	(6)	Telephone No.:		•	
olain me	ethod	of determining efficiency above.		•	
	(7)	Emissions*:		•	
,		Contaminant		Rate or Concentration	• •
				· · · · · · · · · · · · · · · · · · ·	
	(8)	Process Rate*:		•	
b.					•
	(1)	Company:			
	(2)	Mailing Address:		•	
		City:		State:	

Availability of construction materials and process chemicals:

(7)	Emissions*:							•	
	Conta	minant	·	·	Rate or Concentration				
		· :				<del></del>			
	İ			·					
(8)	Process Rate*:	•					•		

Environmental Manager:

<sup>\*</sup>Applicant must provide this information when available. Should this information not be available, applicant must state the reason(s) why.

#### SECTION VII - PREVENTION OF SIGNIFICANT DETERIORATION

n	/	а
	,	w

	1 no sites	TSP	so²•	. Wind spd/dir
	Period of monitoring		to//	-
	Other data recorded		month day year	
				<del>.</del>
	Attach all data or statistical summar		on.	•
	2. Instrumentation, Field and Laborate	ory		
	a) Was instrumentation EPA refe	erenced or its equiva	alent? Yes N	o .
	b) Was instrumentation calibrate	d in accordance wit	th Department procedures? _	Yes No Unknown
В.	Meteorological Data Used for Air Quali	ity Modeling		•
	1 Year(s) of data from	1 1	_ to	-
	·	•	, ,	
	2. Surface data obtained from (locatio			
	3. Upper air (mixing height) data obta		•	•
	4. Stability wind rose (STAR) data ob	tained from (location	on)	<u>-</u>
C.	Computer Models Used		•	
	1	·		Modified? If yes, attach description.
	2		· · · · · · · · · · · · · · · · · · ·	Modified? If yes, attach description.
	3			Modified? If yes, attach description.
	4		· .	Modified? If yes, attach description.
	Attach copies of all final model runs sh	nowing input data, r	receptor locations, and princip	ele output tables.
Ð.	Applicants Maximum Allowable Emiss	ion Data		
	Pollutant		Emission F	Pate
	TSP			grams/sec
	so <sup>2</sup>			grams/sec
Ε.	Emission Data Used in Modeling			
	_	ion data required in	e courses name, description of	point source (on NEDS point number),
	UTM coordinates, stack data, allowable	e emissions, and no	rmal operating time.	· point source (on NEDS point number),
F.	Attach all other information supportiv	e to the PSD review	<i>1</i> .	

\*Specify bubbler (B) or continuous (C).

G. Discuss the social and economic impact of the selected technology versus other applicable technologies (i.e., jobs, payroll, production, taxes, energy, etc.). Include assessment of the environmental impact of the sources.

H. Attach scientific, engineering, and technical material, reports, publications, journals, and other competent relevant information describing the theory and application of the requested best available control technology.

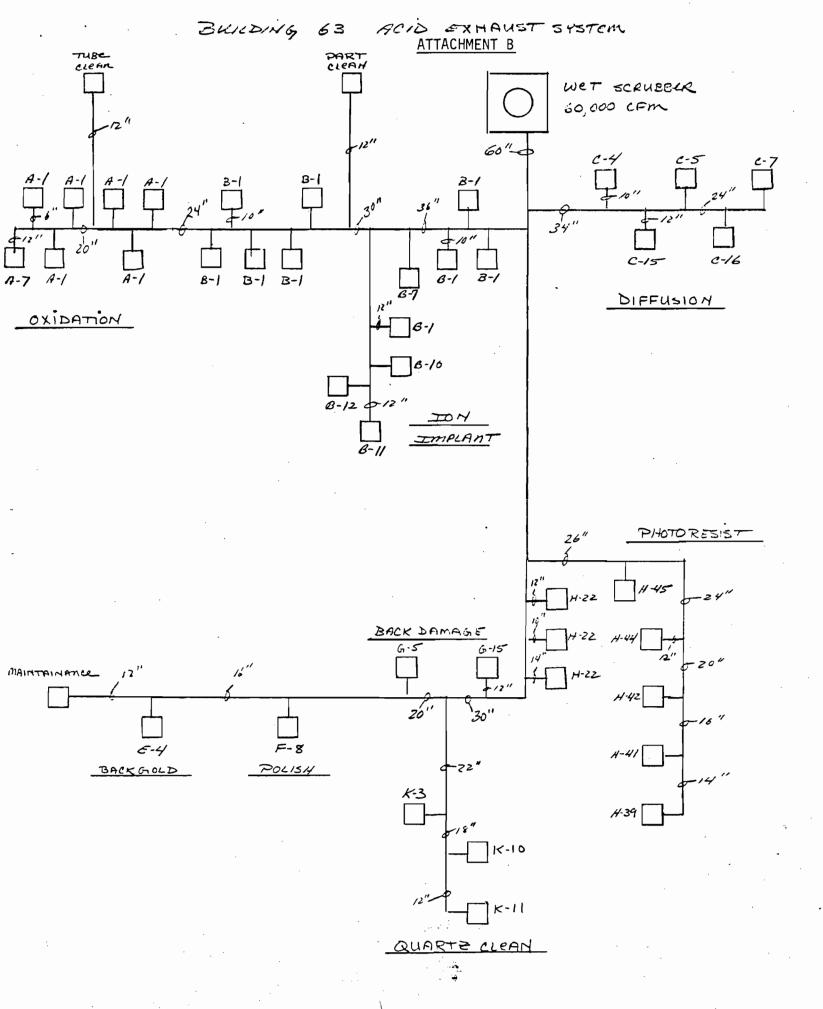
Company Monitored Data

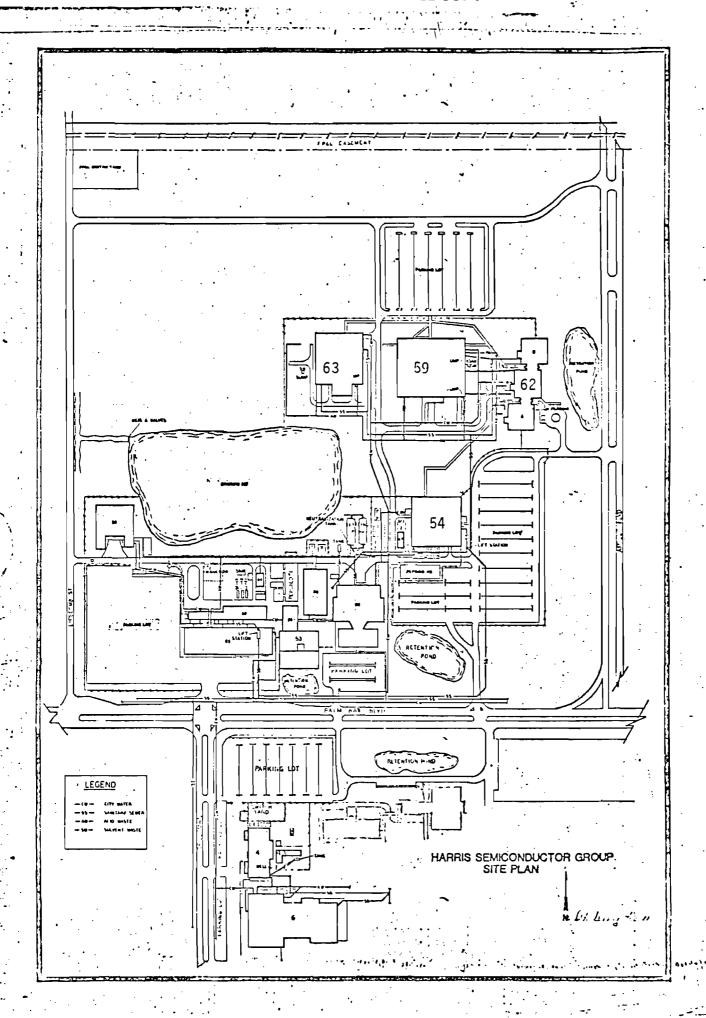
# ATTACHMENT A HARRIS SEMICONDUCTOR EXHAUST SCRUBBER - BUILDING 63

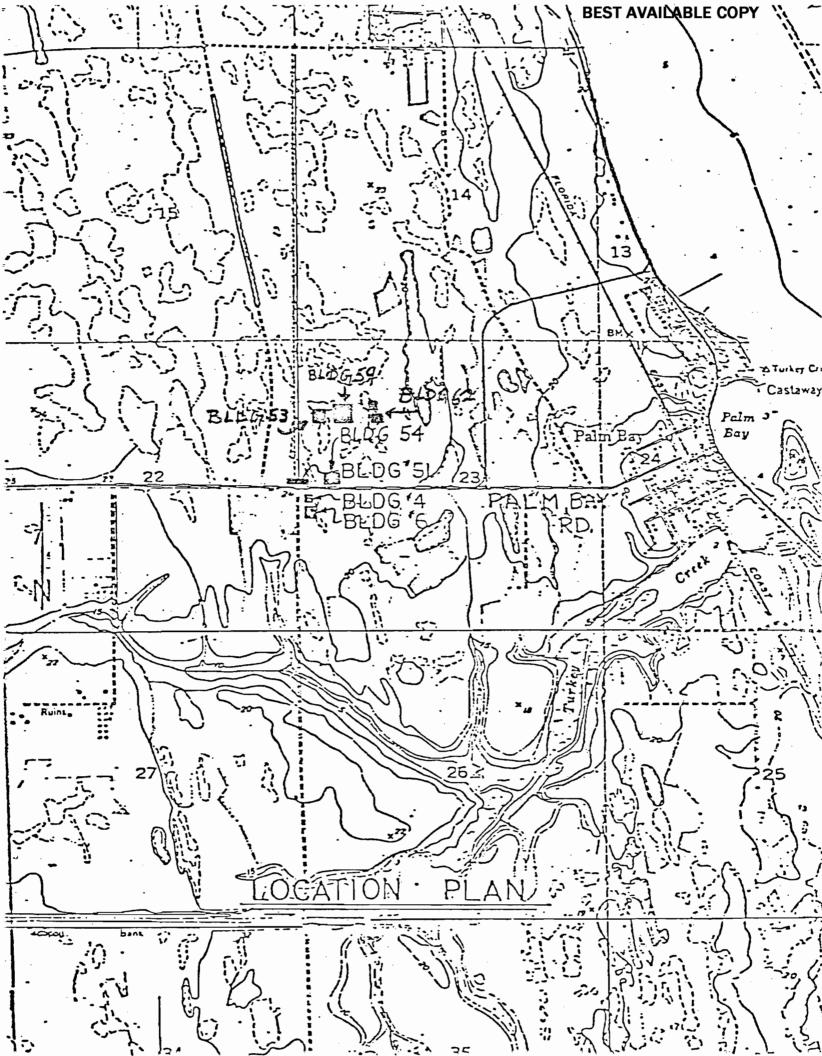
### SYSTEM 2 ACID

RAW	UTILIZATION	EMISS	SION	POTENTIAL	EMISSION
MATERIAL	RATE lb/hr	MAXIMUM 1b/hr	ACTUAL ton/yr	lb/hr	ton/yr
Acetic Acid	3.41	0.005	0.015	0.094	0.298
Ammonium Fluoride	12.29	0.022	0.070	0.445	1.41
Hydrofluoric	14.254	0.01	0.033	0.205	0.650
Nitric .	21.8	0.014	0.043	0.272	0.862
Sodium Hydroxide	20.82	0,014	0.043	0.272	0.862
Sulfuric	125.46	0.033	0.106	0.668	2.116
Hydrochloric	3.18	0.002	0.005	0.2044	0.997
Phosphoric	17.67	0.01	0.032	0.204	0.648
~•				·	

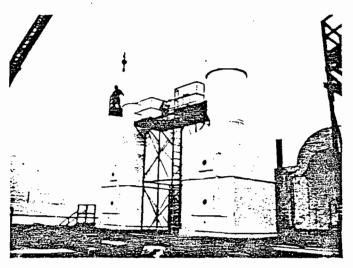
RRS-2/10/82







#### **BEST AVAILABLE COPY**



#### AIR POLLUTION CONTROL EQUIPMENT

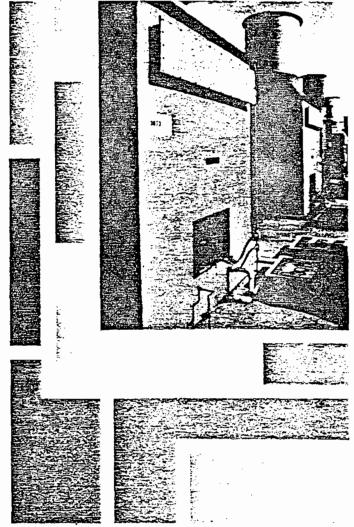
Over the years, more and more emphasis has been placed on air pollution control. There is little doubt more stringent standards and laws are forthcoming from State and Federal agencies regarding the demand for effective, well-designed air cleaning devices for industrial ventilation systems.

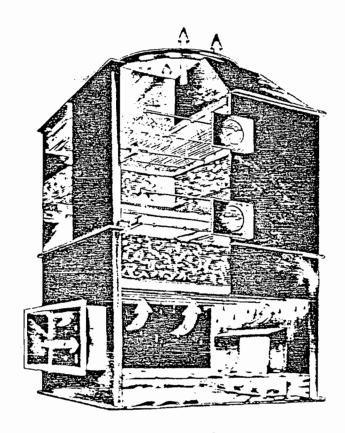
Beverly Pacific offers three (3) basic air pollution control units, totaling ten (10) variations, each with a multitude of standard and optional equipment available to meet your specific requirements.



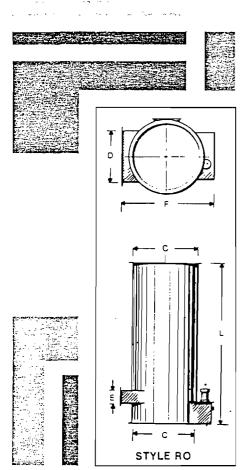
Beverly Pacific's Packed Scrubbers are designed for the removal of soluble gases, mists and particulate matter through "gas absorption" — where noxious gases are transferred from the air stream into a liquid state; and through "impingement" — where particulates are forced against a wetted packing media surface.

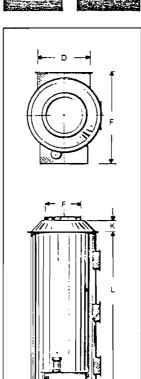
Recirculated scrubbing liquid is used for contaminate saturation and for irrigation of the packing media. Scrubbing efficiency depends largely on uniform distribution of scrubbing liquid, which Beverly Pacific achieves with low pressure, large orifice, non-plugging spray nozzles contained in a uniquely designed spray header assembly.



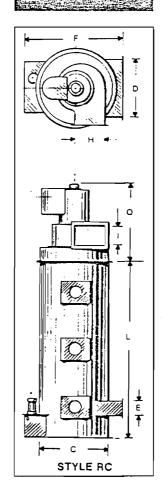


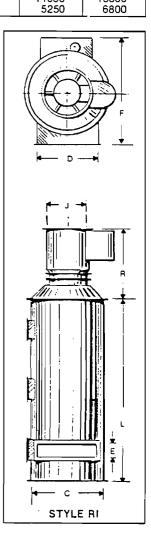
	PACKED SCRUBBER DIMENSIONAL CHART  MODEL NUMBERS  DIMENSIONS IN INCHES											
-	PS-2	PS-4	PS-6	PS-8	PS-12	PS-18	PS-24	PS-30	PS-40	PS-50		
Α	78	82	84	94	101	108	112	114	118	118		
В	24	- 36	42	48	60	72	84	96	108	120		
С	28	40	48	58	72	84	96	108	120	136		
D	22	34	40	46	58	70	80	92	104	116		
E	6	8	10	11	.12	16	18	20	24	24		
F	46	58	66	76	90	102	114	126	138	154		
G	42	54	60	66	78	90	102	114	126	138		
Н	13%	16%	221/2	261/4	291/2	351/4	39	471/4	52%	63%		
ı	103/8	12%	17	201/2	22¾	- 27	30	371/2	40¾	49¾		
J	18	22	28	34	38	45	50	62	66	80		
К	6	8	10	10	12	16	19	20	24	24		
L L	84	87	89	104	112	118	122	124	128	128		
М	64	64	70	77	89	102	102	102	114	114		
N	35	49	55	62	76	88	103	116	128	142		
0	38	52	58	65	79	91	106	119	131	145		
Р	14	16	22	26	30	36	42	50	54	66		
Q	45	50	61	64	68	72	78	86	93	103		
R	35	44	55	65	75	85	94	108	120	141		
s	46	52	59	69	72	79	82	97	100	110		
T	36	48	54	60	72	84	96	108	120	132		
WHEEL DIA.	121/4	15	20	241/2	27	33	361/2	441/2	49	60		
CFM x 1000	1-2	2-4	4-6	6-8	8-12	12-18	18-24	24-30	30-40	40-50		
RECIRC. GPM MAKE-UP GPM	7 0.7	15 1.5	25 2.0	35 3.0	45 4.0	75 7.0	105 10.0	135 13.0	175 17.0	225 22.0		
HT OP. WT. HT SHIP WT.	388 220	745 385	1110 550	1570 770	2690 1210	4085 1925	5670 2750	7595 3795	11790 5390	16040 7040		
VT OP, WT. VT SHIP WT.	318 150	660 300	1060 500	1500 700	2630 1150	3910 1750	5470 2550	7400 3600	11650 5250	15800 6800		

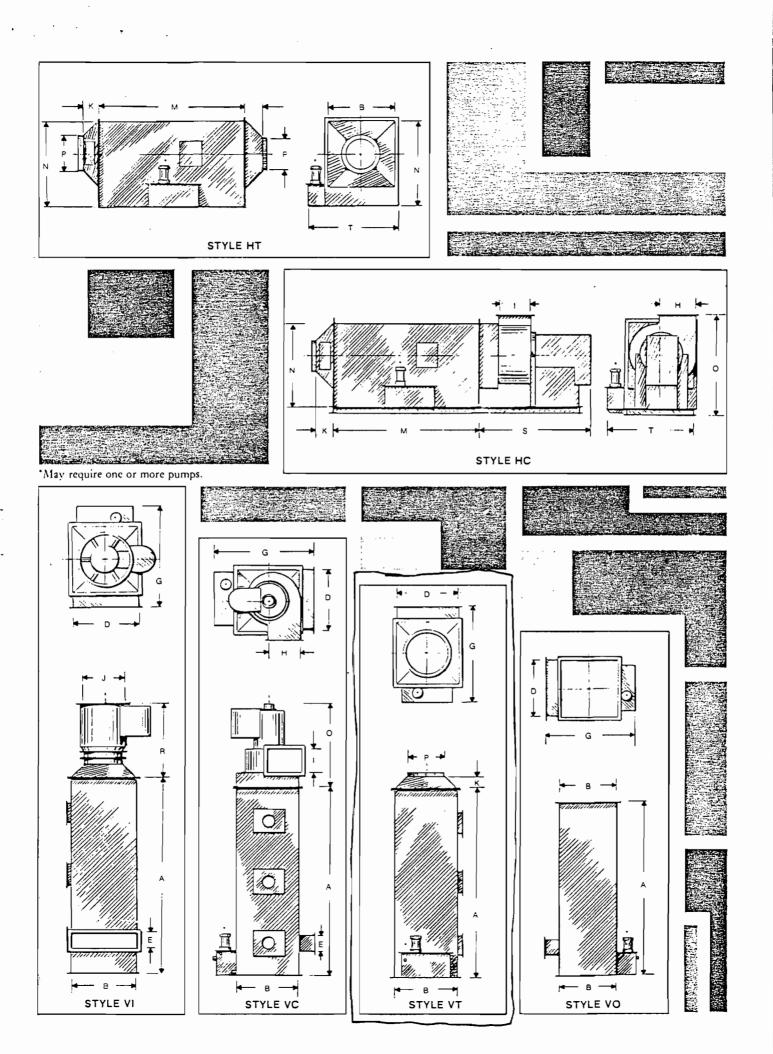




STYLE RT







#### COMPUTERIZED PACKING MEDIA SELECTION

The most common mistake made by scrubber manufacturers today is the use of only one type of packing media for all types of contaminant removal. Beverly Pacific Corporation scrubbers are designed with a computer program assist to determine the most beneficial packing media to achieve high removal efficiency coupled with low pressure drop providing the user with the ultimate in lower operating costs consistent with the contaminant removal requirements.

#### SCRUBBER CONFIGURATIONS

Beverly Pacific Corporation manufactures scrubbers of both crossflow and counter-current configurations.

The CROSSFLOW design is of low profile, rectangular shape wherein the contaminated air stream moves horizontally through the packing media and is scrubbed by the liquid flowing downward through the packing. This configuration is ideal for roof-top mounting and is available in ten (10) standard sizes with or without integral centrifugal fans.

The COUNTER-CURRENT design is offered in two (2) configurations, round or rectangular. While the round tower unit is the most economical in initial cost, the rectangular tower unit permits larger CFM volume using the same amount of floor space. In the counter-current design, the contaminated airstream flows up through the packing media and is scrubbed by the liquid flowing downward. The round and rectangular tower units are each offered in ten (10) sizes and are available with or without integral inline or centrifugal fans.

#### SCRUBBER MAKE-UP WATER CONSUMPTION

Beverly Pacific's scrubber design is based on a scrubbing liquid recirculation rate of 5 GPM per 1000 CFM of contaminated air. Of that 5 GPM, losses due to absorption and/or evaporation range from 0.2 GPM to 0.6 GPM, depending on inlet gas temperature and gas stream dust load.

#### ENTRAINMENT SEPARATION

The unique design of Beverly Pacific's mist eliminator section provides up to 99+% moisture particle entrapment at a pressure drop of approximately 0.5" W.G.

#### CONSTRUCTION

The structural housings are fabricated of Fiberglass Reinforced Plastic (FRP) materials which provide structural strength, are corrosion-resistant and light in weight. Resin selection depends on the corrosive element involved. Resins can also be of fire-retardant grade if required. Our construction technique employs the use of female molds resulting in an extremely smooth, attractive, gelcoated exterior surface (note the upper right photo on the facing page). Beverly Pacific Corporation's construction methods meet or exceed the requirements of NBS-PS 15-69 for custom contact-molded reinforced polyester chemical resistant process equipment.

#### OPTIONAL EQUIPMENT, FITTINGS AND ACCESSORIES

FITTINGS, such as drain, overflow, make-up water, access doors, etc. can usually be located to facilitate installation and maintenance.

RECIRCULATION RESERVOIR(S) are normally an integral part of the scrubber but, if required, can be furnished for remote installation.

RECIRCULATION PUMP(S) can be located within the built-in reservoir, but can also be installed in remote reservoir units.

SPECIAL RESERVOIR(S) can be furnished in applications where it is necessary to remove non-soluble particulate accumulation to prevent pump damage and minimize maintenance.

pH CONTROL SENSING/METERING equipment can be provided where contaminate absorption requires the addition of acid or caustic to the recirculated scrubbing liquid.

ATTACHMENT 2

#### DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32301



BOB GRAHAM GOVERNOR VICTORIA J. TSCHINKEL SECRETARY

May 21, 1982

CERTIFIED MAIL-RETURN RECEIPT REQUESTED

Mr. P. R. Bumgarner Manager, Facilities Engineering Harris Semiconductor Post Office Box 883 Melbourne, Florida 32901

Dear Mr. Bumgarner:

RE: Air Pollution Construction Applications
Harris Semiconductor

The Bureau of Air Quality Management (BAQM) is currently processing the subject seven air pollution construction applications for the Harris Palm Bay expansion. However, the applications have been determined incomplete until further information is received addressing the following questions:

- 1. Section V, Part 3 requires attachment of the basis of the potential emission calculations. The applications as submitted show no relation between the potential emissions and the amount of solvents/acids used. Please provide some information that will verify potential emissions.
- In each application, Attachment A refers to a "Utilization Rate" in pounds per hour, most of which are much greater than the potential emission discharge rates. Please indicate what becomes of the solvents/acids which are not controlled by the scrubbers. Are they recycled or reclaimed?
- 3. Verification of the proposed total net usage of solvents and acids is required on a tons per year basis. This net usage will be the amounts purchased minus the amounts reclaimed, recycled or captured in the scrubbing system. Any volatile materials used in the process that are not accounted for via a materials balance, are assumed to be emitted to the atmosphere.

Mr. P. R. Bumgarner Page Two May 21, 1982

- 4. Regarding the scrubbing liquids how many times is the liquid recycled before treatment and do you propose to monitor the solvent/acid content of the recycled water? Also, will caustic be used in the acid vapor scrubber systems?
- 5. Please indicate the specific chemical formula for the solvents Freon, Photoresist, and Microstrip. Also indicate which isomers are used of the Propanol and Butyl Acetate solvents. This is important, as certain Freons and other organic compounds are exempted from control requirements. This information will remain confidential upon your request.
- 6. Emissions in tons per year do not coincide with the hourly emission rate and the hours of operation (constant or 8736 hours/year) as applied for. Please clarify this discrepancy.

Processing of the applications will resume when these questions have been resolved. Don't hesitate to contact Tim Powell or myself at (904)488-1344 if you have any questions.

Sincerely,

William Thomas, P.E. Bureau of Air Quality Management

WT/TP/pa

ATTACHMENT 3



Buce 1982

August 2, 1982

Mr. William Thomas, P.E.
Bureau of Air Quality Management
State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

Reference: Air Pollution Construction Applications for Harris

Semiconductor -- Your Letter Dated May 21, 1982

Dear Mr. Thomas:

Thank you for your response of May 21, 1982 in which you acknowledged receipt of and review of the seven (7) air pollution construction applications for the Harris Semiconductor expansion. The questions presented in the referenced letter are under review and a response will be forwarded in the near future.

If you have any questions, please do not hesitate to call me at (305) 724-7657.

Sincerely,

HARRIS SEMICONDUCTOR

P. R. Bumgarner

Manager

Plant Engineering

PRB/1mp

cc: R. R. Sands

L. J. Hart

ATTACHMENT 5

#### INTEROFFICE MEMORANDUM

For And/Or	Routing To District Offices To Other Than The Addres	tsee
To:	Loctn.:	
To:	Loctn.:	
	Loctn.:	
	Oate:	
	Reply Required [ ]	
Date Oue:	Date .Due:	

TO: File - Harris Semiconductor: Construction Permit Application Nos. AC 05-54990,-91, -92, -93, -94, -95, -96

THRU: Bill Thomas

FROM: Bruce Mitchell

DATE: September 29, 1982

SUBJ: Incompleteness meeting with the applicant at BAQM conference room at 10:30 AM on September 28, 1982.

The following data will be required in order to continue further processing of the referenced construction permit applications:

- Potential annual pollutant emissions by mass balance of the VOC materials utilized in categories of solvents and acids (show all calculations, assumptions, references, tables, etc.).
- Facility annual emissions by source of all pollutants emitted.
- 3. Request a change of the construction permit applications expiration date.
- 4. Since materials balance will be a specific condition requirement to account for the VOC emissions, detail the methodology that will be followed by the applicant in order to ensure compliance verification.

#### RBM/bjm

cc: P. R. Bumgarner
Robert R. Sands
Chuck Collins
Martha Harrell Hall

ATTACHMENT 6

#### **BEST AVAILABLE COPY**

STATE OF FLORIDA

#### DEPARTMENT OF ENVIRONMENTAL REGULATION

TWIN TOWERS OFFICE BUILDING 2600 BLAIR STONE ROAD TALLAHASSEE, FLORIDA 32301-8241



BOB GRAHAM GOVERNOR VICTORIA J. TSCHINKEL SECRETARY

December 17, 1982

CERTIFIED MAIL

Mr. P. R. Bumgarner, Manager Plant Engineering Harris Corporation PT-030 Box 883 Melbourne, Florida 32901

Dear Mr. Bumgarner:

On May 21, 1982, an incompleteness letter was sent to you requesting additional information concerning applications to construct, Nos. AC 05-54990, -91, -92, -93, -94, -95, and -96. Then, on September 28, 1982, an incompleteness meeting was held in the DER-BAQM conference room with representatives of Harris Corporation and DER-CAPS's engineers. Since that time no response has been received by this office.

If the project has been canceled, the Bureau requests that a letter withdrawing the permit application be submitted. If the project is still to be completed, please submit the information requested in our letter of May 21, 1982, and interoffice memorandum dated September 29, 1982, by January 17, 1983. Sufficient time has elapsed for a response and the Bureau has the option to deny the permit.

If you have any questions, please contact Bruce Mitchell of my staff at (904) 488-1344.

Sincerely,

C. H. Fancy, P. E.

Deputy Chief

Bureau of Air Quality

Mangement

CHF/BM/bjm

cc: Robert R. Sands
Chuck Collins
Martha Harrell Hall

ATTACHMENT 7



January 7, 1983

Bill

Mr. C. H. Fancy, P.E.
Deputy Chief
Bureau of Air Quality Management
State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

DER

JAN 11 1983

BAQM

Dear Mr. Fancy:

We received a letter from you on December 20, 1982 concerning our construction applications (Nos. AC 05-54990, -91, -92, -93, -94, -95 and -96). The project associated with these permit applications has not been cancelled and Harris Semiconductor intends to pursue the requests for construction permits.

The following information is submitted in response to the request for additional data presented at the meeting held September 28, 1982 and the subsequent interoffice memo dated September 29, 1982.

- 1. A total mass balance is under development and will be made available to your office as soon as it is completed.
- 2. The attached chart details the Harris Semiconductor facility annual emissions by source and current permit number.
- 3. Please change the construction permit applications expiration date to September 1, 1983.
- 4. Harris Semiconductor will ensure compliance verification through a program of annual sampling and analyses of the scrubber effluents. The sampling and analysis program will comply with current methodologies for VOC detection in air emissions.

We sincerely regret the delay in responding to your request for additional data. If you have any questions please contact Rob Sands, our Environmental Engineer, at (305) 729-5736.

Sincerely,

HARRIS SEMICONDUCTOR

P. R. Bumgarner

Manager

Facilities Engineering

PRB/1mp

cc: Bruce Mitchell-DER/Tallahassee

Attachment

### AIR POLLUTION PERMITS

Source Location	Permit <u>Number</u>	Acid Mist Tons/Year	H/C Emissions Tons/Year
BUILDING 4	A005-38485 (S) A005-36146 (F) A005-36147 (F) A005-36148 (S) A005-36149 (S) A005-36150 (S) A005-36152 (F) A005-36154 (F)	.032 .125 - .546 1.56 1.108 .867	.02 - .185 - - - 1.60
BUILDING 6	A005-38486 (S) A005-36155 (F) A005-36156 (F) A005-36157 (F) A005-36158 (F) A005-36159 (F) A005-36160 (F)	1.014 - 3.384 4.995 - -	1.977 - 3.784 2.640 2.246
BUILDING 51	A005-38487 (S) A005-36161 (S) A005-36162 (S) A005-36163 (S) A005-36164 (S) A005-36165 (S) A005-36166 (S)	.12 .354 - .171 .222	.07 3.361 8.68 .056 .084 10.879
BUILDING 54	A005-38488 (S) A005-36882 (S)	.063 1.139	. 045 . 4712
BUILDING 60	A005-38489 (S)	.094	.067
		15.794	36.1652
	TOTAL	51.	. 96

F = Fan Exhaust

S = Scrubber Exhaust

ATTACHMENT 8



May 4, 1983

Slu Pathy Bill

Mr. C. M. Fancy
Deputy Chief
Bureau of Air Quality Management
State of Florida
DEPARTMENT OF ENVIRONMENTAL REGULATION
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32301

DER MAY 1 6 1983

BAQM

Reference: Harris Semiconductor -- Construction Permit Applications

Nos. AC-05-54990, -91, -92, -93, -94, -95, -96

Dear Mr. Fancy:

The attached information is submitted in order to complete the construction permit applications referenced. Attachment A enclosed is to replace the Attachment A submitted with the applications; and represents updated, accurate data on the utilization, evaporation, and potential emissions for each source for which we are requesting permits. Attachment C presents Material Balance/Flow Diagram for the VOC/Acid materials utilized in each building and exhausted through the individual fume scrubbers.

Also attached are the basic assumptions and methodologies utilized in developing this data.

It is hoped that this material will satisfy your requirements. If you have any questions, please contact Rob Sands, our Environmental Engineer, at (305) 729-5736.

Sincerely,

HARRIS SEMICONDUCTOR

P. R. Bumgarner

Manager

Plant Engineering

PRB/1mp

Attachments

# ASSUMPTIONS/CALCULATIONS HARRIS SEMICONDUCTOR

Construction Permit Application Nos. AC-05-54990, -91, -92, -93, -94, -95, -96

- 1. Production modules are in operation approximately 264 days each year.
- 2. Building 62 operations (AC-05-54992, -93, -94) occur 8-hours each production day (2,112 hours/year).
- 3. Building 59 and Building 63 operations (AC-05-54990, -91, -95, -96) occur 24-hours each production day (6,336 hours/year).
- 4. The chemical usage volumes for Buildings 59, 62 & 63 were derived by surveying similar operations in the existing facility. A one time survey was conducted to determine the chemical volumes utilized during the survey period. However, frequent changes in production techniques, which are common in the semiconductor industry, make this data totally accurate only for that period in time in which the survey was conducted.
- 5. The Building 59 operation will be essentially the same as current operations in Building 6. The chemical usage volumes for Building 59 were derived by determining current Building 6 usage and increasing that number to account for the increase in production area in the new building.
- 6. The Building 63 operation will be essentially the same as current operations in Building 4. Therefore, the Building 63 chemical usage volumes were derived from a survey of the volumes of chemicals utilized in Building 4. These volumes were increased to account for an increase in product wafer size from 3 inch to 4 inch, and to account for the increase in production area in the new building.
- 7. Building 62 chemical usage volumes were determined by surveying current operations in the existing facility which will be moved to the new building upon completion.
- 8. A nonmoving static diffusion film of air over the surface of the process chemicals, due to the laminar flow hoods, creates a diffusion barrier on the surface of the liquid which reduces the normal evaporation rate at a given temperature. Therefore, the assumption is made that the effective vapor pressure, of any chemical vapor, at the top of the static diffusion film of air is only 30% (.3) of the saturation vapor pressure at the surface of the liquid.
- 9. Basis of evaporation calculation:

Mass of Liquid Evaporated		0.3 (P*)		Mass of Liquid Used
Time	=	P <sub>t.</sub>	Х,	Time

P\* = Saturation vapor pressure of liquid in tank

 $P_{t}$  = Total atmospheric pressure

10. Compliance verification for VOC emissions will be accomplished through an annual program of sampling and analysis. If compliance testing is required for acid mist from dedicated acid vapor scrubbers, it will be accomplished through sampling and analysis of the scrubber discharge water.

# ATTACHMENT A HARRIS SEMICONDUCTOR

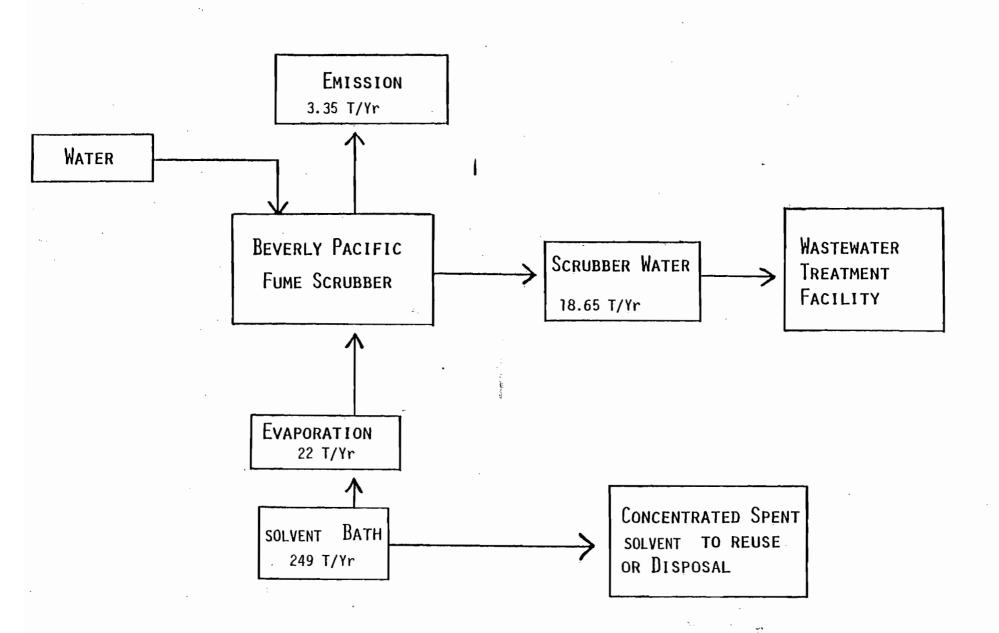
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FS-59-1 (AC-05-54990)

### SYSTEM 1 SOLVENTS

		UTILIZATIO	N	EVAPO	EVAPORATION Re			EMISSION	
MICAL	1b/hr	1b/day	T/year	1b/hr	1b/day	Efficiency	1b/hr	lb/year	T/year
A	40.0	1157 5	150.0	2.5	02.0	05%		2000 0	
tone (Acetone)	48.2	1157.5	152.8	3.5	83.2	85%	.5	3292.8	1.6
hanol (Methanol)	9.9	237.6	·31.4	.4	9.1	85%	.1	359.9	.2
panol (Propanol)	44.6	1069.7	141.2	.6	13.9	. 85%	.1	552.2	.3
utyl Acetate (N-Butyl	11.3	270.4	35.7	.1	1.6	85%	.01	63.4	.03
rostrip (Microstrip)	<sup>)</sup> 122.7	2943.9	388.6	2.4	58.1	85%	.4	2300.0	1.2
<pre>ist (Photoresist)</pre>	8.7	208.3	27.5	.02	. 4	85%	∠.01	16.5	<.01
ene (Xylene)	3.6	87.3	11.5	.01	.3	85%	<.01	12.7	<.01
							,		
AL .	249.0	5974.7	788.7	7.03	166.6		1.13	6597.5	3.35

SOLVENT VAPOR SCRUBBER FS-59-1 (AC-05-54990)



# ATTACHMENT A HARRIS SEMICONDUCTOR FS-59-2 (AC-05-54991)

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SYSTEM 2 ACID

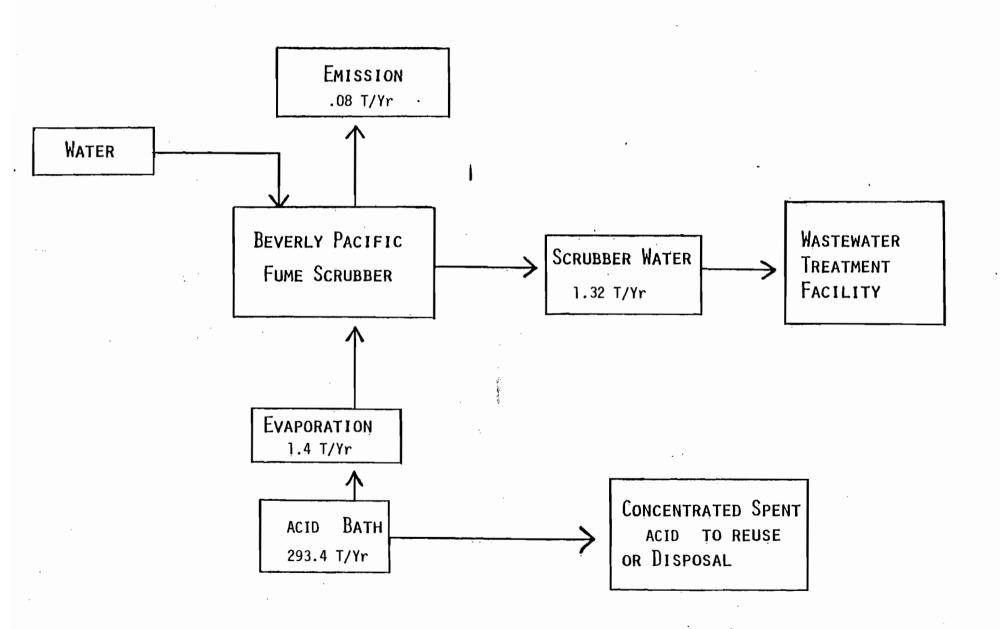
		UTILIZATI	ON	EVAPO	ORÁTION	Removal		EMISSION	
1ICAL	1b/hr	1b/day	T/year	lb/hr	1b/day	Efficiency	1b/hr	lb/year	T/year
rofluoric Acid (Hydrofluoric Ac	13.9	333.9	44.1	.08	1,9	95%	∠.01	24.4	.01
ric Acid	12.6	303.7	40.1	.04	1.0	95%	<.01	12.7	.01
(Nitric Acid) furic Acid (Sulfuric Acid)	127.9 ·	3069.1	405.1	.05	1.2	95%	<.01	15.8	.01
ltic Acid	23.0	551.5	72.8	.1	2.4	95%	<b>∠.</b> 01	31.7	.02
(Acetic Acid) onium Fluoride	24.4	586.0	77.4	.2	4.0	95%	<b>&lt;.</b> 01	53.2	.03
(Ammonium Fluorio sphoric Acid (Phosphoric Acid	91.6	2198.9	290.2	.01	.2	95%	<.01	3.2	∠.01
AL	293.4	7043.1	929.7	.48	10.7	,	<.06	141.0	.08

24 HOUR PER DAY PRODUCTION
PRODUCTION OCCURS 264 DAYS PER YEAR

1

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the second



## ATTACHMENT A HARRIS SEMICONDUCTOR FS-62A-1 (AC-05-54992)

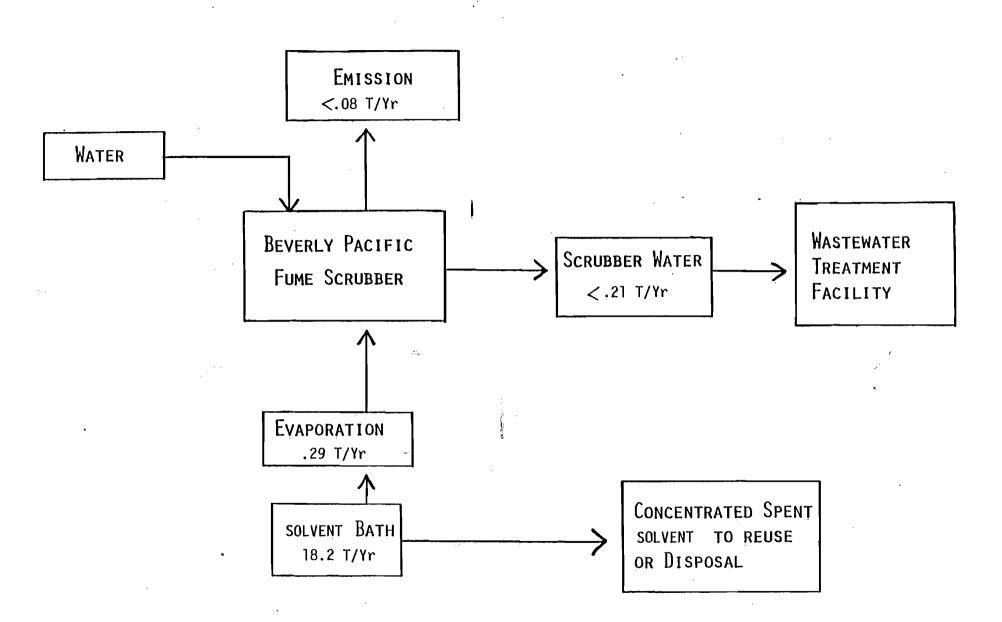
SYSTEM 1 SOLVENT

		UTILIZATIO	ON	EVAPORATION		Remova1		<b>EMISSION</b>	
ICAL	1b/hr	lb/day	T/year	lb/hr	lb/day	Efficiency	jb/hŗ	lb/year	T/year
one (Acetone)	1.1	8.6	1.1	.1	.7	85%	.01	24.4	.01
nano](Methanol)	1.1	8.9	. 1.2	.04	.3	85%	<.01	13.6	< .01
hloroethane(1,1,1-	.3	2.1	.3	∠.01	<b>∠</b> .05	85%	₹.01	1.9	<.01
trichloroethan ne (Xylene)	e) 1.2	9.8	1.3	∠.01	∠.01	. 85%	<.01	.8	<.01
anol (Propanol)	7.8	62.5	8.3	.1	.8	85%	.01	21.5	.01
'l Acetate (N-Butyl	3.3	26.3	3.3	.02	,2	85%	∠.01	6.2	<.01
oresist (Photoresist	) 1.8	14.2	1.9	<.0]	.03	85%	∠.01	1.1	<.01
ostrip (Microstrip)	.7	5.9	.8	.02	,1	85%	∠.01	4.6	<.01
ıL	17.3	138.3	18.2	.3	2,2		<.08	74.1	<.08

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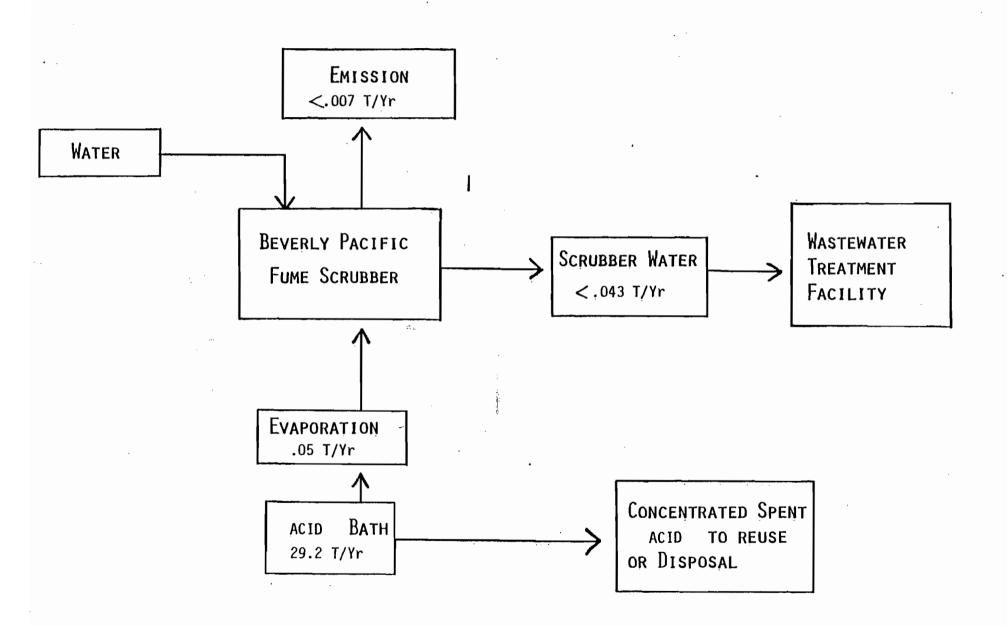
FS-62A-1 (AC-05-54992)

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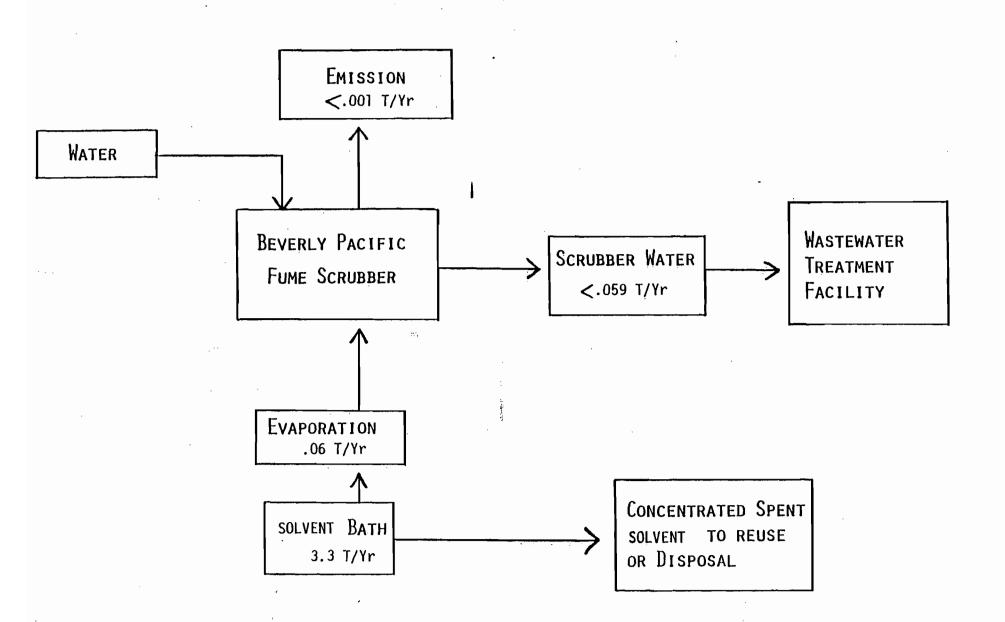
SYSTEM 2 ACID

	UTILIZATION			EVAP	ORATION	Removal		EMISSION	
1ICAL	lb/hr	]b/day	T/year	lb/hr	lb/day	Efficiency	lb/hr	lb/year	T/year
tic Acid	.5	3.6	.5	∠.01	.2	95%	<b>&lt;.</b> 001	.2	<.001
(Acetic Acid)	1.7	13.4	1.8	.01	.09	95%	<b>&lt;.</b> 001	1.2	<.001
(Ammonium Fluor rofluoric Acid	1.9	15.2	2.0	.01	.08	95%	<.001	1.1	<b>∠</b> .001
(Hydrofluoric A	3.1	24.9	3.3	.01	.08	95%	<.001	1.0	<.001
(Nitric Acid) furic Acid (Sulfuric Acid)	17.7	141.9	18.7	∠.01	.06	95%	<.001	.7	<.001
rochioric acid	- 4	3.0	.4	<b>&lt;.</b> 01	.03	95%	<.001	.4	∠.001
(Hydrochloric Adsphoric Acid (Phosphoric Acid		18.8	2.5	<.01	∠.01	95%	<b>₹.</b> 001	.02	∠.001
AL .	27.7	220.8	29.2	∠.07	.37		<b>₹.</b> 007	4.6	∠.007



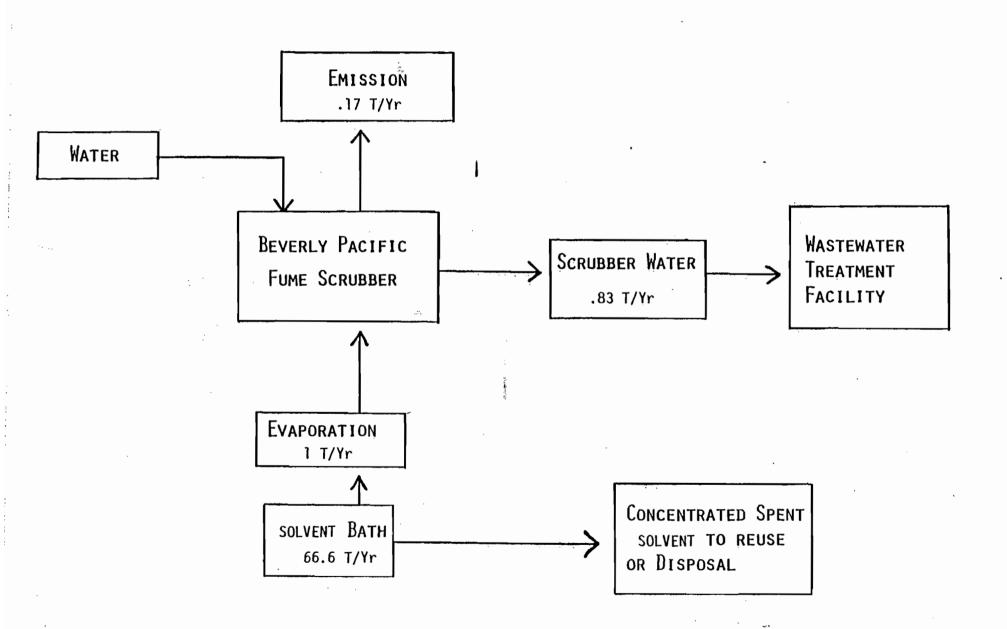
SYSTEM 3 SOLVENT

ICAL	UTILIZATION			EVAPORATION		Remova1		<b>EMISSION</b>	
	lb/hr	1b/day	T/year	1b/hr	lb/day	Efficiency	1b/hr	1b/year	T/year
tone (Acetone)	.2	1.3	.2	.01	.09	85%	.002	3.7	.002
nanol (Methanol)	.1	1.0	·.1	, <b>∠.</b> 01	.04	85%	.001	1.6	.001
,l-Trichloroethane	.3	2.6	.3	.01	.1	. 85%	.002	4.0	.002
(1,1,1-trichloroe one (Xylene)	.2	1.2	.2	∠.01	∠.01	85%	<b>∠.</b> 001	1	<.001
nanol (Propanol)	1.0	7.8	1.0	.01	.1	85%	.002	4.0	.002
yl Acetate (N-Butyl	.4	3.5	.5	<.01	.02	85%	<b>&lt;.</b> 001	.8	<.001
Acetate) inol (Ethanol)	.9	7.3	1.0	.01	.1	85%	.002	4.6	.002
)L	3.1	24.7	3.3	∠.07	.46		.01	18.8	<b>∠</b> .001



SYSTEM 1 SOLVENT

MICAL	UTILIZATION			<b>EVAPORATION</b>		Remova1		EMISSION	
	1b/hr	1b/day	T/year	lb/hr	]b/day	Efficiency	lb/hr	lb/year	T/year
							:		
panol (Propanol)	3.7	89.1	11.8	, 05	1.2	85%	.01	46.2	.02
<pre>,l-Trichloroethane   (1,1,1-trichloroet anol (Ethanol)</pre>	4.4	104.9	13.8	.17	4.1	85%	.03	164.1	.08
	4.8	114.6	15.1	.07	1.8	. 85%	.01	71.6	.04
yl Acetate (N-Butyl	1.2	28.1	3.7	.01	.17	85%	∠.01	6.3	.01
Acetate) ist (Photoresist)	1.0	22.3	2.9	<.01	.04	85%	<.01	1.9	∠.01
ene (Xylene)	6.1	146.2	19.3	.01	.29	85%	∠.01	11.7	<.01
AL ·	21.2	505.2	66.6	.32	7.6		₹.08	301.9	.17



SYSTEM 2 ACID

1ICAL	UTILIZATION			EVAPORATION		Remova 1		EMISSION	
	lb/hr	lb/day	T/year	lb/hr	lb/day	Efficiency	]b/hr	lb/year	T/year
rofluoric Acid (Hydrofluoric A rochloric Acid (Hydrochloric A ric Acid (Nitric Acid) furic Acid	24.4	585.8	77.3	.14	3.2	95%	<.01	42.4	. 02
	3.5	84.0	-11.1	.04	.8	95%	<.01	11.4	∠.01
	3.7	88.9	11.7	.01	.3	95%	₹.01	3.8	∠.01
	187.4	4496.6	593.6	.07	1.8	95%	<b>&lt;.</b> 01	23.4	<b>&lt;</b> .01
۸L	219.0	5255.3	693.7	.26	6.1		<.04	81.0	∠.05

# ATTACHMENT C

### MATERIAL BALANCE/FLOW DIAGRAM

ACID VAPOR SCRUBBER FS-63-2 (AC-05-54996)

