

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**Harris Specialty Chemicals
519 West Water Street
Centerville, Indiana 47330**

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP-177-9318-00062	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM), and presented in the permit application.

A.1 General Information

The Permittee owns and operates a commercial waterproofing materials plant.

Responsible Official: Richard Hetisimer
Source Address: 519 West Water Street, Centerville, Indiana 47330
Mailing Address: P.O. Box 27, Centerville, Indiana 47330
SIC Code: 2851
County Location: Wayne
County Status: Attainment for all criteria pollutants
Source Status: Minor Source, under PSD Rules

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

Dry Operations Facilities

- (a) eight (8) dry material holding tanks, identified as:
- (i) hold tank 1 for mixers 1 & 2,
 - (ii) hold tank 2 for mixers 1 & 2,
 - (iii) hold tank 3 for mixers 1 & 2, and
 - (iv) hold tank 4 for mixers 1 & 2,
- each with capacities of 30,000 pounds, controlled by one (1) dust collector, and
- (v) hold tank 1 for mixer 3,
 - (vi) hold tank 2 for mixer 3,
 - (vii) hold tank 1 for mixer 4, and
 - (viii) hold tank 2 for mixer 4,
- each with capacities of 7000 pounds, controlled by one (1) dust collector,

dry materials are directed from the holding tanks to sixteen (16) finished product filling machines, also controlled by the aforementioned two (2) dust collectors;

Liquid Operations Facilities

- (b) epoxy and urethane mixing and packaging operations, consisting of:
- (i) one (1) mixer with a capacity of 500 gallons,
 - (ii) one (1) mixer with a capacity of 325 gallons,
 - (iii) one (1) mixer with a capacity of 250 gallons,
 - (iv) one (1) mixer with a capacity of 220 gallons,
 - (v) one (1) mixer with a capacity of 90 gallons,
 - (vi) one (1) mixer with a capacity of 15 gallons,
 - (vii) one (1) holding tank with a capacity of 900 gallons,
 - (viii) one (1) tylac storage tank with a capacity of 6500 gallons,
 - (ix) one (1) D.E.R. 331 resin storage tank with a capacity of 6500 gallons,
 - (x) one (1) nonylphenol storage tank with a capacity of 6500 gallons, and
 - (xi) one (1) jeffamine storage tank with a capacity of 6500 gallons,

dry material draw off emissions from these mixers are controlled by one (1) common dust collector,

epoxies and urethanes are directed from the mixers to the holding tank, with emissions exhausting to stack 8;

- (c) methylene diphenyl diisocyanate (MDI) repackaging operations, consisting of one (1) polytote temporary storage unit and one (1) filling machine, with emissions exhausting to stack 9;
- (d) water based acrylics mixing and packaging operations, consisting of two (2) mixers with capacities of 170 gallons,

dry material draw off emissions from these mixers are also controlled by the one (1) common dust collector,

wastewater from the water based acrylics is combined with diatomaceous earth to make earth cakes for disposal,

water based acrylics are packaged directly from the mixers, with a maximum packaging rate of 500 pounds per hour;

- (e) Thoroclear 777 mixing and packaging operations, consisting of one (1) mixer with a capacity of 1100 gallons and one (1) mineral spirits underground storage tank with a capacity of 8000 gallons; and
- (f) two (2) natural gas fired space heaters, each with heat input capacities of 0.7 million Btu per hour.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source is not subject to the Part 70 Permit requirements established by 326 IAC 2-7-2 (Applicability) because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

SECTION B GENERAL CONSTRUCTION AND OPERATION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

Construction Conditions [326 IAC 2-1-3.4]

B.1 General Construction Conditions

- (a) The data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
- (b) This permit to operate does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.3 Permit Review Rules [326 IAC 2]

Notwithstanding Construction Condition B.4, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of operation permits pursuant to 326 IAC 2 (Permit Review Rules).

B.4 First Time Operation Permit [326 IAC 2-1-4]

This document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:

- (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Operation Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
- (b) Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
- (c) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-1-7.1(Fees).

Operation Conditions

B.5 General Operation Conditions

- (a) The data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).

- (b) The Permittee shall comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC13-17) and the rules promulgated thereunder.

B.6 Preventive Maintenance Plan [326 IAC 1-6-3]

Pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:

- (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
- (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
- (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

B.7 Transfer of Permit [326 IAC 2-1-6]

Pursuant to 326 IAC 2-1-6 (Transfer of Permits):

- (a) In the event that ownership of this commercial waterproofing materials plant is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
- (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
- (c) The OAM shall reserve the right to issue a new permit.

B.8 Permit Revocation [326 IAC 2-1-9]

Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

B.9 Availability of Permit [326 IAC 2-1-3(l)]

Pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of the source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitation and Standards

C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

- (a) The total source potential emissions of volatile organic compounds (VOC) and particulate matter (PM-10) are less than 250 tons per year and it is not one of the 28 source categories listed under 326 IAC 2-2. Therefore the requirements of 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 will not apply.
- (b) Any change or modification which may increase the potential VOC emissions to 250 tons per year or more from the equipment covered in this permit must be approved by the Office of Air Management (OAM) before such change may occur.

C.2 Opacity Limitations [326 IAC 5-1-2]

Pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:

- (a) visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.
- (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

The Permittee shall not open burn any material except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3 (a)(2)(A) and (B) are not federally enforceable.

C.4 Incineration [326 IAC 4-2][326 IAC 9-1-2]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and 326 IAC 9-1-2.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Operation of Equipment

All air pollution control equipment listed in this permit shall be in placed or operated at all times that the emission units vented to the control equipment are in operation, as described in Section D of this permit.

C.7 Stack Height [326 IAC 1-7]

- (a) The Permittee shall comply with the provisions of 326 IAC 1-7 (Stack Height Provisions), for all exhaust stacks through which a potential (before controls) of twenty-five (25) tons per year or more of particulate matter or sulfur dioxide is emitted.
- (b) Any change in an applicable stack shall require prior approval from IDEM, OAM.

C.8 Asbestos Abatement Projects - Accreditation [326 IAC 14-10] [326 IAC 18]
[40 CFR 61, Subpart M]

Prior to the commencement of any demolition or renovation activities, the Permittee shall use an Indiana accredited asbestos inspector to inspect thoroughly the affected facility or part of the facility where the demolition or renovation operation will occur for the presence of asbestos, including Category I and Category II nonfriable asbestos containing material. The requirement that the inspector be accredited is federally enforceable.

Compliance Monitoring Requirements

C.9 Compliance Monitoring

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment, no more than ninety (90) days after receipt of this permit. If due to circumstances beyond its control, this schedule cannot be met, the Permittee shall notify:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Management
100 North Senate Avenue, P. O. Box 6015
Indianapolis, Indiana 46206-6015

in writing, no more than ninety (90) days after receipt of this permit, with full justification of the reasons for the inability to meet this date and a schedule which it expects to meet. If a denial of the request is not received before the monitoring is fully implemented, the schedule shall be deemed approved.

C.10 Monitoring Methods [326 IAC 3]

Any monitoring or testing performed to meet the requirements of this permit shall be performed, according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.11 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.
- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
 - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
 - (2) If there is a change in the following:
 - (A) asbestos removal or demolition start date;

- (B) removal or demolition contractor; or
- (3) Waste disposal site.
- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).
- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

Indiana Department of Environmental Management
Asbestos Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

- (e) Procedures for Asbestos Emission Control
The Permittee shall comply with the emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4 emission control requirements are mandatory for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.
- (f) Indiana Accredited Asbestos Inspector
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited is federally enforceable.

Record Keeping and Reporting Requirements

C.12 Monitoring Data Availability

- (a) All observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.
- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.

- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements stated in (a) above.

C.13 General Record Keeping Requirements

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location and available within one (1) hour upon verbal request of an IDEM, OAM, representative, for a minimum of three (3) years. They may be stored elsewhere for the remaining two (2) years providing they are made available within thirty (30) days after written request.
- (b) Records of required monitoring information shall include, where applicable:
 - (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;
 - (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
 - (1) Copies of all reports required by this permit;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;
 - (4) Records of preventive maintenance shall be sufficient to demonstrate that improper maintenance did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures.
- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.14 General Reporting Requirements

- (a) To affirm that the source has met all the requirements stated in this permit the source shall submit a Quarterly Compliance Report. Any deviation from the requirements and the date(s) of each deviation must be reported.
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit shall be submitted to:

Indiana Department of Environmental Management
Compliance Data Section, Office of Air Management
100 North Senate Avenue, P.O. Box 6015
Indianapolis, Indiana 46206-6015

- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, on or before the date it is due.
- (d) Unless otherwise specified in this permit, any quarterly report shall be submitted within thirty (30) days of the end of the reporting period.
- (e) All instances of deviations must be clearly identified in such reports. A reportable deviation is an exceedance of a permit limitation or a failure to comply with a requirement of the permit or a rule. It does not include:
 - (1) an excursion from compliance monitoring parameters as identified in Section D of this permit unless tied to an applicable rule or limit; or
 - (2) an emergency as defined in 326 IAC 2-7-1(12);
 - (3) failure to implement elements of the Preventive Maintenance Plan unless lack of maintenance has caused or contributed to a deviation; or
 - (4) failure to make or record information required by the compliance monitoring provisions of Section D unless such failure exceeds 5% of the required data in any calendar quarter.

A permittee's failure to take the appropriate response step when an excursion of a compliance monitoring parameter has occurred or failure to monitor or record the required compliance monitoring is a deviation.
- (f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

Stratospheric Ozone Protection

C.15 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to 40 CFR 82.156.

- (b) Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 DRY OPERATIONS FACILITY CONDITIONS

- (a) eight (8) dry material holding tanks, identified as:
- (i) hold tank 1 for mixers 1 & 2,
 - (ii) hold tank 2 for mixers 1 & 2,
 - (iii) hold tank 3 for mixers 1 & 2, and
 - (iv) hold tank 4 for mixers 1 & 2,
- each with capacities of 30,000 pounds, controlled by one (1) dust collector, and
- (v) hold tank 1 for mixer 3,
 - (vi) hold tank 2 for mixer 3,
 - (vii) hold tank 1 for mixer 4, and
 - (viii) hold tank 2 for mixer 4,
- each with capacities of 7000 pounds, controlled by one (1) dust collector,
- dry materials are directed from the holding tanks to sixteen (16) finished product filling machines, also controlled by the aforementioned two (2) dust collectors;

Emissions Limitation and Standards

D.1.1 Particulate Matter (PM) Process Operation [326 IAC 6-3]

The PM from the mineral aggregate operations shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

Compliance Determination Requirements

D.1.2 Particulate Matter (PM)

The dust collectors for particulate matter control shall be in operation at all times when the mineral aggregate facilities are in operation.

Compliance Monitoring Requirements

D.1.3 Monitoring

- (a) Daily inspections shall be performed to verify the placement, integrity, and particle loading of the dust collectors. To monitor the performance of the dust collectors, daily observations shall be made of the particulate matter emissions while the mineral aggregate facilities are in operation. Failure to take response steps in accordance with Section C - Compliance Monitoring Requirements, shall be considered a violation of this permit.
- (b) Weekly inspections shall be performed of the particulate matter emissions from the stack and the presence of dust on the rooftops and the nearby ground. Compliance response for this unit shall contain troubleshooting contingency and response steps for when a particulate matter emission, evidence of particulate matter emission, or other abnormal emission is observed. A trained employee shall record whether emissions are normal or abnormal. Failure to take response steps in accordance with Section C - Compliance Monitoring Requirements, shall be considered a violation of this permit.

- (c) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.
- (d) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (e) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (f) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Record Keeping and Reporting Requirements

D.1.4 Record Keeping Requirements

- (a) To document compliance with Condition D.1.1 and D.1.3 the Permittee shall maintain records of daily visible emission notations of the dry operations facilities stack exhausts.
- (b) To document compliance with Condition D.1.3, the Permittee shall maintain records of the results of the inspections required under Condition D.1.3.
- (c) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

SECTION D.2 LIQUID OPERATIONS FACILITY CONDITIONS

- (b) epoxy and urethane mixing and packaging operations, consisting of:
- (i) one (1) mixer with a capacity of 500 gallons,
 - (ii) one (1) mixer with a capacity of 325 gallons,
 - (iii) one (1) mixer with a capacity of 250 gallons,
 - (iv) one (1) mixer with a capacity of 220 gallons,
 - (v) one (1) mixer with a capacity of 90 gallons,
 - (vi) one (1) mixer with a capacity of 15 gallons,
 - (vii) one (1) holding tank with a capacity of 900 gallons,
 - (viii) one (1) tylac storage tank with a capacity of 6500 gallons,
 - (ix) one (1) D.E.R. 331 resin storage tank with a capacity of 6500 gallons,
 - (x) one (1) nonylphenol storage tank with a capacity of 6500 gallons, and
 - (xi) one (1) jeffamine storage tank with a capacity of 6500 gallons,
- dry material draw off emissions from these mixers are controlled by one (1) common dust collector,
- epoxies and urethanes are directed from the mixers to the holding tank, with emissions exhausting to stack 8;
- (c) methylene diphenyl diisocyanate (MDI) repackaging operations, consisting of one (1) polytote temporary storage unit and one (1) filling machine, with emissions exhausting to stack 9;
- (d) water based acrylics mixing and packaging operations, consisting of two (2) mixers with capacities of 170 gallons,
- dry material draw off emissions from these mixers are also controlled by the one (1) common dust collector,
- wastewater from the water based acrylics is combined with diatomaceous earth to make earth cakes for disposal,
- water based acrylics are packaged directly from the mixers, with a maximum packaging rate of 500 pounds per hour; and
- (e) Thoroclear 777 mixing and packaging operations, consisting of one mixer with a capacity of 1100 gallons and one mineral spirits underground storage tank with a capacity of 8000 gallons.

Emissions Limitation and Standards

D.2.1 BACT Minor Limitation [326 IAC 8-1-6]

- (a) The input VOC to the Thoroclear 777 mixer shall be limited to 705 tons 12 month period, rolled on a monthly basis. This is equivalent to a VOC potential to emit of 24 tons per year using a flashoff factor of 3.4%. Therefore, the Best Available Control Technology (BACT) requirements of 326 IAC 8-1-6 will not apply.
- (b) During the first 12 months of operation, the input raw material usage to the Thoroclear 777 mixer shall be limited such that the total usage divided by the accumulated months of operation shall not exceed the limit specified.

- (c) The potential VOC emissions are less than 25 tons per year for the individual facilities within the following mixing and packaging operations:
- (i) water based acrylics, and
 - (ii) urethanes and epoxies.
- Prior to any change which may increase the potential VOC emissions of any individual facility within these operations, approval from the Office of Air Management (OAM) will be required.

D.2.2 Particulate Matter (PM) Process Operation [326 IAC 6-3]

The PM from the urethane and epoxy coatings and water based acrylic coatings operations shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour; and} \\ P = \text{process weight rate in tons per hour}$$

Compliance Determination Requirements

D.2.3 Volatile Organic Compounds

Compliance with the VOC content and usage limitations contained in Condition D.2.1 shall be determined pursuant to 326 IAC 8-1-4(a)(3)(A) using formulation data. However, IDEM, OAM, reserves the authority to determine compliance using Method 24 in conjunction with the analytical procedures specified in 326 IAC 8-1-4.

D.2.4 Particulate Matter (PM)

The dust collectors for particulate matter control shall be in operation at all times when the epoxy and urethane coatings and water based acrylics facilities are in operation.

Compliance Monitoring Requirements

D.2.5 Monitoring

- (a) Daily inspections shall be performed to verify the placement, integrity, and particle loading of the dust collectors. To monitor the performance of the dust collectors, daily observations shall be made of the particulate matter emissions while the mineral aggregate facilities are in operation. Failure to take response steps in accordance with Section C - Compliance Monitoring Requirements, shall be considered a violation of this permit.
- (b) Weekly inspections shall be performed of the particulate matter emissions from the stack and the presence of dust on the rooftops and the nearby ground. Compliance response for this unit shall contain troubleshooting contingency and response steps for when a particulate matter emission, evidence of particulate matter emission, or other abnormal emission is observed. A trained employee shall record whether emissions are normal or abnormal. Failure to take response steps in accordance with Section C - Compliance Monitoring Requirements, shall be considered a violation of this permit.
- (c) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, eighty percent (80%) of the time the process is in operation, not counting startup or shut down time.

- (d) In the case of batch or discontinuous operations, readings shall be taken during that part of the operation that would normally be expected to cause the greatest emissions.
- (e) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal visible emissions for that specific process.
- (f) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Record Keeping and Reporting Requirements

D.2.6 Record Keeping Requirements

- (a) To document compliance with Condition D.2.1 and D.2.3 the Permittee shall maintain records in accordance with (1) through (6) below. Records maintained for (1) through (6) shall be taken monthly and shall be complete and sufficient to establish compliance with the VOC usage limits and/or the VOC emission limits established in Condition D.2.1.
 - (1) The amount of VOC content of the Thoroclear 777 coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
 - (2) A log of the dates of use;
 - (3) The volume weighted VOC content of the Thoroclear 777 used for each calendar day;
 - (4) The cleanup solvent usage for each month;
 - (5) The total VOC usage for each calendar day and month; and
 - (6) The weight of VOC emitted for each compliance period.
- (b) To document compliance with Condition D.2.2 and D.2.5 the Permittee shall maintain records of daily visible emission notations of the dry operations facilities stack exhausts.
- (c) To document compliance with Condition D.2.5, the Permittee shall maintain records of the results of the inspections required under Condition D.2.5.
- (d) All records shall be maintained in accordance with Section C - General Record Keeping Requirements, of this permit.

D.2.7 Reporting Requirements

A quarterly summary of the information to document compliance with Condition D.2.1 shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, using the reporting forms located at the end of this permit, or their equivalent, within thirty (30) days after the end of the quarter being reported.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF AIR MANAGEMENT
 COMPLIANCE DATA SECTION**

Quarterly Report

Source Name: Harris Specialty Chemicals
 Source Address: 519 West Water Street, Centerville, Indiana 47330
 Mailing Address: P.O. Box 27, Centerville, Indiana 47330
 Construction Permit No.: CP-177-9318-00062
 Facility: Thoroclear 777 Coatings Operation
 Parameter: Input Volatile Organic Compounds
 Limit: 705 tons (1,410,000 pounds) per 12 month day period, rolled on a monthly basis at an emission factor of 3.4%

YEAR: _____

Month	Column 1	Column 2	Column 1 + Column 2
	This Month	Previous 11 Months	12 Month Total
Month 1			
Month 2			
Month 3			

- 9 No deviation occurred in this quarter.
- 9 Deviation/s occurred in this quarter.
 Deviation has been reported on: _____

Submitted by: _____
 Title / Position: _____
 Signature: _____
 Date: _____
 Phone: _____

**Please note - This form should only be used to report malfunctions
applicable to Rule 326 IAC 1-6 and to qualify for
the exemption under 326 IAC 1-6-4.**

326 IAC 1-6-1 Applicability of rule

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO₂, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

326 IAC 1-2-39 “Malfunction” definition

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m. : 11 IR 2373)

***Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for New Construction and Operation

Source Background and Description

Source Name:	Harris Specialty Chemicals
Source Location:	519 West Water Street, Centerville, IN 47330
County:	Wayne
Construction Permit No.:	CP-177-9318-00062
SIC Code:	2851
Permit Reviewer:	Jon C. Akin

The Office of Air Management (OAM) has reviewed an application from Harris Specialty Chemicals relating to the construction and operation of a commercial waterproofing materials plant, consisting of the following equipment:

Dry Operations Facilities

- (a) eight (8) dry material holding tanks, identified as:
- (i) hold tank 1 for mixers 1 & 2,
 - (ii) hold tank 2 for mixers 1 & 2,
 - (iii) hold tank 3 for mixers 1 & 2, and
 - (iv) hold tank 4 for mixers 1 & 2,
- each with capacities of 30,000 pounds, controlled by one (1) dust collector, and
- (v) hold tank 1 for mixer 3,
 - (vi) hold tank 2 for mixer 3,
 - (vii) hold tank 1 for mixer 4, and
 - (viii) hold tank 2 for mixer 4,
- each with capacities of 7000 pounds, controlled by one (1) dust collector,

dry materials are directed from the holding tanks to sixteen (16) finished product filling machines, also controlled by the previously mentioned two (2) dust collectors;

Liquid Operations Facilities

- (b) epoxy and urethane mixing and packaging operations, consisting of:
- (i) one (1) mixer with a capacity of 500 gallons,
 - (ii) one (1) mixer with a capacity of 325 gallons,
 - (iii) one (1) mixer with a capacity of 250 gallons,
 - (iv) one (1) mixer with a capacity of 220 gallons,
 - (v) one (1) mixer with a capacity of 90 gallons,
 - (vi) one (1) mixer with a capacity of 15 gallons,
 - (vii) one (1) holding tank with a capacity of 900 gallons,
 - (viii) one (1) tylac storage tank with a capacity of 6500 gallons,
 - (ix) one (1) D.E.R. 331 resin storage tank with a capacity of 6500 gallons,
 - (x) one (1) nonylphenol storage tank with a capacity of 6500 gallons, and
 - (xi) one (1) jeffamine storage tank with a capacity of 6500 gallons,

dry material draw off emissions from these mixers are controlled by one (1) common

dust collector,

epoxies and urethanes are directed from the mixers to the holding tank, with emissions exhausting to stack 8;

- (c) methylene diphenyl diisocyanate (MDI) repackaging operations, consisting of one (1) polytote temporary storage unit and one (1) filling machine, with emissions exhausting to stack 9;
- (d) water based acrylics mixing and packaging operations, consisting of two (2) mixers with capacities of 170 gallons,

dry material draw off emissions from these mixers are also controlled by the one (1) common dust collector,

wastewater from the water based acrylics is combined with diatomaceous earth to make earth cakes for disposal,

water based acrylics are packaged directly from the mixers, with a maximum packaging rate of 500 pounds per hour;

- (e) Thoroclear 777 mixing and packaging operations, consisting of one (1) mixer with a capacity of 1100 gallons and one (1) mineral spirits underground storage tank with a capacity of 8000 gallons; and
- (f) two (2) natural gas fired space heaters, each with heat input capacities of 0.7 million Btu per hour.

On May 4, 1981, a registration was issued for the following facilities, but this review is based on the actual emissions from the following facilities:

- (a) nine (9) ingredient storage silos with emissions controlled by vent filters;
- (b) five dry material mixers with emissions controlled by a baghouse; and
- (c) three (3) liquid material mixers with emissions controlled by a baghouse.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (inches)	Flow Rate (acfm)	Temperature (°F)
1	Silo Dust Collector	6	8 x 8	12,000	70
2	Silo 3	70	2 x 6	1600-variable	70
3	Silos 1 & 2	70	2 x 6	1600-variable	70
4	Silo 6	70	2 x 6	1600-variable	70
5	Silo 7	70	2 x 6	1600-variable	70
6	Silo 8	70	2 x 6	1600-variable	70
7	Silo 9	70	2 x 6	1600-variable	70
8	Epoxy-Urethane	15	6	1400	70
9	MDI	15	6	5860	70

Enforcement Issue

IDEM is aware that the epoxy and urethane coatings, Thoroclear 777, two (2) of the waterbased acrylics mixers, and the MDI packaging and/or mixing processes have been operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the construction permit rules.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on December 19, 1997.

Emissions Calculations

Emissions calculations were submitted by the applicant along with the application. These calculations have been reviewed by the Office of Air Management and modified for correction. In addition, the combustion calculations for the two (2) space heaters are included in Appendix A (3 pages) as well as limited potential to emit calculations for the source.

Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/year)	Potential Emissions (tons/year)
Particulate Matter (PM)	70.94	25.98
Particulate Matter (PM10)	70.94	13.77
Sulfur Dioxide (SO ₂)	-	-
Volatile Organic Compounds (VOC)	-	66.07
Carbon Monoxide (CO)	-	0.10
Nitrogen Oxides (NO _x)	-	0.30
Single Hazardous Air Pollutant (HAP)	-	8.97
Combination of HAPs	-	19.13

- (a) Allowable emissions are determined from the applicability of rule 326 IAC 6-3. The dry mineral aggregate, urethane and epoxy coatings, and water based acrylic coatings operations shall comply with 326 IAC 6-3-2(c) using the following equation:

 $E = 4.10P^{0.67}$ where: E = rate of emission in pounds per hour,
 P = process weight in tons per hour = 7.76 tons per hour,
 $E = 4.10 * (7.76)^{0.67} = 16.19$ pounds per hour = 70.94 tons per year
- (b) The potential emissions before control are less than the allowable emissions therefore, the potential emissions before control are used for the permitting determination.
- (c) Potential emissions (as defined in the Indiana Rule) of volatile organic compounds (VOC) and particulate matter (PM) are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

County Attainment Status

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Wayne County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Wayne County has been classified as attainment or unclassifiable for oxides of nitrogen (NO_x), sulfur dioxide (SO₂), particulate matter (PM/PM-10), and carbon monoxide (CO). Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Fugitive Emissions
 Since this type of operation is not one of the 28 listed source categories under 326 IAC

2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	1.46
PM10	0.78
SO ₂	-
VOC	28.84
CO	-
NO _x	-

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.
- (b) These emissions were based on calculations submitted with the application by the company. Modifications to these calculations are included in Appendix A.

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)
Proposed Modification	0.61	0.21	-	56.27	0.1	0.3
PSD Threshold Level	250	250	250	250	250	250

This modification to an existing minor stationary source is not major because the emission increase is less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This existing source, including the emissions from this permit CP-177-9318-00062, is still not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source. This status has been verified by the OAM inspector assigned to the source.

Federal Rule Applicability

- (a) The dry aggregate handling operation is not subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60.670, Subpart OOO) because the facility has a capacity of 25 tons per hour or less.
- (b) The storage tanks are not subject to the New Source Performance Standard, 326 IAC 12, (40 CFR 60.110b, Subpart Kb) because although they are used to store volatile organic liquids (nonylphenol, jeffamine, and mineral spirits) and the tanks were constructed after the applicability date of this rule (July 23, 1984), the storage capacities of the three (3) tanks (two (2) @ 24.61 cubic meters and one (1) @ 30.28 cubic meters) are less than 40 cubic meters each. The other two (2) storage tanks are used to store nonvolatiles (tylac and a nonvolatile resin).
- (c) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (40 CFR 63, 40 CFR 61, and 326 IAC 14) applicable to this source.

State Rule Applicability

326 IAC 2-2 (Prevention of Significant Deterioration (PSD) Requirements)

The source is not subject to these rules because potential VOC and particulate matter (PM-10) emissions are less than 250 tons per year and it is not one of the 28 source categories listed under this rule.

326 IAC 2-6 (Emission Reporting)

The source is not subject to this rule because it is located in Wayne County and has the potential to emit volatile organic compounds (VOC), particulate matter (PM-10), sulfur dioxide (SO₂), oxides of nitrogen (NO_x), and carbon monoxide (CO) at levels less than 100 tons per year.

326 IAC 5-1-2 (Visible Emissions Limitations)

The source is subject to this rule except as provided in 326 IAC 5-1-3 (Temporary Exemptions).

Pursuant to 326 IAC 5-1-2 the visible emissions shall meet the following:

- (a) visible emissions shall not exceed an average of 40% opacity in 24 consecutive readings.
- (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

326 IAC 6-3 (PM process operation)

The source is subject to this rule for the mineral aggregate, urethane and epoxy, and water based acrylic coatings operations because no other 326 IAC 6 rules apply.

These operations shall comply with 326 IAC 6-3-2(c) using the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emission in pounds per hour,}$$

P = process weight in tons per hour, if
P is equal to or less than 60,000 lbs/hr (30 tons/hr)

These operations comply with this rule by using dust collectors as emission control devices.

326 IAC 8-1-6 (New facilities; general reduction requirements)

- (a) The Thoroclear 777 mixer is subject to this rule since it is a new facility which is not subject to any other 326 IAC 8 rules having potential volatile organic compound (VOC) emissions of 25 tons per year or more. The applicant has chosen to accept a VOC limitation for the Thoroclear 777 mixer of 24 tons per 12 month period, rolled on a monthly basis, to avoid the Best Available Control Technology (BACT) requirements of this rule.
- (b) The following packaging and mixing operations have total potential VOC emissions greater than 25 tons per year:
 - (i) water based acrylics, and
 - (ii) urethanes and epoxies.However, these operations are not subject to this rule because they consist of several mixers which are treated as individual facilities with each mixer having potential VOC emissions less than 25 tons per year.

Therefore, the applicant is not subject to the BACT requirements of 326 IAC 8-1-6.

326 IAC 8-9 (Volatile Organic Liquid Storage Vessels)

The storage tanks are not subject to this rule because although three (3) of the tanks are used to store volatile organic liquids (nonylphenol, jeffamine, and mineral spirits) and the tanks were constructed after the applicability date of this rule (October 1, 1995), they are not located in Clark, Floyd, Lake, or Porter County.

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Construction Permit Application Form Y.

- (a) This existing source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.
- (b) See the submitted calculations with the permit application.
- (c) This existing source is not subject to 326 IAC 2-1-3.4 (New Source Toxics Control) because potential emissions of a single HAP are less than 10 tons per year and potential emissions of total HAPs are less than 25 tons per year.

Conclusion

The operation of the commercial waterproofing materials plant will be subject to the conditions of the attached proposed **Construction Permit No. CP-177-9318-00062**.

Modification to Calculations
Submitted by Cornerstone Environmental
for Harris Specialty Chemicals
Application for a State Construction and Operation Permit
CP-177-9318-00062

1. **Modification to Dry Operations Calculations**
 Dry operations calculations were lacking the representation of emissions from the filling machines. The emission factor for this operation was incorporated into the submitted calculations using the same FIRE emission factor for Cement Unloading-pneumatic (0.138 lb PM-10/ton product) that was used for the unloading of the silos. Dry operations were submitted for all facilities in the dry operations, including the previously registered dry mixers and silos. Therefore, the emissions for this permitting determination were taken only from the unpermitted emission units.

Revised PM-10 emission factor for the unpermitted dry operations: 0.395 lb PM-10/ton product

PM-10 emissions for the unpermitted dry operations:

$0.395 \text{ lb PM-10/ton} * 7 \text{ ton/hour} * 8760 \text{ hr/yr} = 24,221 \text{ lb PM-10/yr} = 12.11 \text{ ton PM-10/yr}$

With 51% of TSP = PM-10, TSP emissions = 23.75 ton TSP/yr

2. Calculations for the MDI Repackaging, Diatomaceous Earth Cake, Thoroclear 777, and the Urethane-Epoxy Coatings operations that were submitted were verified to be correct.
3. The emissions from the storage tanks have been reviewed and determined to be negligible due to the size of the tanks, the lack of venting (closed system), and the nitrogen blanket control system.
4. Due to the fact that three (3) of the five (5) liquid mixers in the water based acrylics operation have been previously permitted, the submitted calculations have been modified using the mixer capacities. Using the capacities of the two (2) unpermitted mixers at 170 gallons and the three (3) registered mixers at 1000 gallons, 700 gallons, and 400 gallons, emissions can be estimated proportionately for each 170 gallon unpermitted mixer from the calculations submitted.

$(170 \text{ gal}) / (170 + 170 + 1000 + 700 + 400 \text{ gal}) = 6.97 \%, 13.94 \%$ for both mixers

$0.1394 * 33.5 \text{ ton VOC/yr} = 4.67 \text{ ton VOC/yr}$

$0.1394 * 13.4 \text{ ton HAPs/yr} = 1.87 \text{ ton HAPs/yr}$

$0.1394 * 39,420,000 \text{ lb/yr} * 40 \% \text{ dry} * \text{ton}/2000 \text{ lb} * 3.02 \text{ lb TSP/ton} = 1.66 \text{ ton TSP/yr}$

$0.1394 * 39,420,000 \text{ lb/yr} * 40 \% \text{ dry} * \text{ton}/2000 \text{ lb} * 2.57 \text{ lb PM-10/ton} = 1.41 \text{ ton PM-10/yr}$

**Existing Source Status Calculations
Harris Specialty Chemicals**

(a) Water based acrylic coatings

Emissions from the three (3) registered mixers are calculated using the proportion of the three (3) registered mixers capacity of 2100 gallons divided by the total of the five (5) mixers capacities of 2440 gallons.

$$39,420,000 \text{ lb/yr} * ((2100) / 2440) * (40 \% \text{ dry materials}) * (1 \text{ ton}/2000 \text{ lb})^2 * \\ (3.02 \text{ lb/ton}) = 10.25 \text{ tons TSP/yr} \\ \text{with 99 \% efficiency dust collector} = 0.10 \text{ tons TSP/yr}$$

$$39,420,000 \text{ lb/yr} * ((2100) / 2440) * (40 \% \text{ dry materials}) * (1 \text{ ton}/2000 \text{ lb})^2 * \\ (2.57 \text{ lb/ton}) = 8.72 \text{ tons PM-10/yr} \\ \text{with 99 \% efficiency dust collector} = 0.09 \text{ tons PM-10/yr}$$

$$39,420,000 \text{ lb/yr} * ((2100) / 2440) * 5 \% \text{ VOC by weight} * 3.4 \% \text{ emission factor} \\ = 57,676 \text{ lb VOC /yr} = 28.84 \text{ tons VOC/yr}$$

$$39,420,000 \text{ lb/yr} * ((2100) / 2440) * 1 \% \text{ ethylene glycol or dibutyl phthalate} * \\ 3.4 \% \text{ emission factor} = 11,535 \text{ lb/yr} = \quad 5.77 \text{ tons EG/yr} \\ \text{and} \quad 5.77 \text{ tons DP/yr}$$

(b) Dry operations

Emissions from the nine (9) registered silos and four (4) of the registered dry material mixers.

$$2.263 \text{ lb PM-10/ton product} * 7 \text{ ton/hr} * 8760 \text{ hr/yr} = 138,767 \text{ lb PM-10/yr} \\ = 69.38 \text{ ton PM-10/yr} \\ \text{With 99 \% efficient dust collector,} \quad = 0.69 \text{ ton PM-10/yr} \\ \text{With 51 \% of TSP = PM-10,} \quad = 136.05 \text{ ton TSP/yr} \\ \text{With 99 \% efficient dust collector,} \quad = 1.36 \text{ ton TSP/yr}$$