FINAL DRAFT/PROPOSED CAAPP PERMIT
Cabot Corporation Cab-O-Sil Division
I.D. No.: 041808AAH
Application No.: 96030080
March 8, 2001

217/782-2113

TITLE V - CLEAN AIR ACT PERMIT PROGRAM (CAAPP) PERMIT
and
TITLE I PERMIT[1]

PERMITTEE

Cabot Corporation, Cab-O-Sil Division
Attn: Mark Keller
700 East U.S. Highway 36
Tuscola, Illinois 61953-9643

Application No.: 96030080 I.D. No.: 041808AAH
Applicant's Designation: Date Received: March 7, 1996
Operation of: Fumed metal Oxide Manufacturing Plant
Date Issued: TO BE DETERMINED Expiration Date[2]: DATE
Source Location: 700 East U.S. Highway 36, Tuscola, Douglas County
Responsible Official: Richard Taylor, General Manager

This permit is hereby granted to the above-designated Permittee to OPERATE a fumed metal oxide manufacturing plant, pursuant to the above referenced permit application. This permit is subject to the conditions contained herein.

If you have any questions concerning this permit, please contact Dan Punzak at 217/782-2113.

Donald E. Sutton, P.E.
Manager, Permit Section
Division of Air Pollution Control

DES:DGP:jar

cc: Illinois EPA, FOS, Region 3

[1] This permit may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the CAA and regulations promulgated thereunder, including 40 CFR 52.21 – federal PSD and 35 IAC Part 203 – Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within this permit.

[2] Except as provided in Condition 8.7 of this permit.

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1.0 SOURCE IDENTIFICATION

1.1 Source

Cabot Corporation, Cab-O-Sil Division
700 East U.S. Highway 36
Tuscola, Illinois 61953-9643
217/253-3370

I.D. No.: 041808AAH
Standard Industrial Classification: 2819

1.2 Owner/Parent Company

Cabot Corporation
2 Seaport Lane
Boston, Massachusetts 02210

1.3 Operator

Cabot Corporation, Cab-O-Sil Division
700 East U.S. Highway 36
Tuscola, Illinois 61953-9643

Michael Collins, Environmental Manager
217/253-3370

1.4 General Source Description

The Cabot Corporation, Cab-O-Sil Division is located at 700 East U.S. Highway 36 in Tuscola, Douglas County. The source produces fumed metal oxides by the flame hydrolysis of a blend of chlorosilanes, silicon tetrachloride, methyl trichlorosilane, tricholorsilane, and aluminum trichloride. HCl gas is a by-product of the reaction and it is absorbed into water and sold as hydrochloric acid or disposed of. The source also operates several other related operations where the fumed metal oxides are treated to produce specific products. Also included are several research facilities on-site for the development of both treated and untreated products.

2.0 LIST OF ABBREVIATIONS/ACRONYMS USED IN THIS PERMIT

Act	Illinois Environmental Protection Act [415 ILCS 5/1 et seq.]
AP-42	Compilation of Air Pollutant Emission Factors, Volume 1, Stationary Point and Other Sources (and Supplements A through F), USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711
BACT	Best Available Control Technology
Btu	British thermal unit
CAA	Clean Air Act [42 U.S.C. Section 7401 et seq.]
CAAPP	Clean Air Act Permit Program
CAM	Compliance Assurance Monitoring
CFR	Code of Federal Regulations
Cl_2	Chlorine
CO	Carbon Monoxide
°F	degrees Fahrenheit
ft^3	cubic feet
gal	gallon
HAP	Hazardous Air Pollutant
HCl	Hydrochloric Acid
hr	hour
IAC	Illinois Administrative Code
I.D. No.	Identification Number of Source, assigned by Illinois EPA
ILCS	Illinois Compiled Statutes
Illinois EPA	Illinois Environmental Protection Agency
kg	kilogram
kW	kilowatts
lb	pound
Mg	Megagram
min	minute
mmBtu	Million British thermal units
mo	month
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_x	Nitrogen Oxides
NSPS	New Source Performance Standards
PM	Particulate Matter
PM_{10}	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 microns as measured by applicable test or monitoring methods
ppm	parts per million
PSD	Prevention of Significant Deterioration
PWR	Process Weight Rate
RMP	Risk Management Plan

SO_2	Sulfur Dioxide
T	Ton
T1	Title I – identifies Title I conditions that have been carried over from an existing permit
T1N	Title I New – identifies Title I conditions that are being established in this permit
T1R	Title I Revised – identifies Title I conditions that have been carried over from an existing permit and subsequently revised in this permit
TDC	Treatment Development Center
TS	Treated Silica
USEPA	United States Environmental Protection Agency
VOM	Volatile Organic Material
yr	year

3.0 INSIGNIFICANT ACTIVITIES

3.1 Identification of Insignificant Activities

The following activities at the source constitute insignificant activities as specified in 35 IAC 201.210:

3.1.1 Activities determined by the Illinois EPA to be insignificant activities, pursuant to 35 IAC 201.210(a)(1) and 201.211, as follows:

Gasoline Storage Tank 1 (295 Gallons)
Gasoline Storage Tank 2 (320 Gallons)
Pressurized Feed Stock Storage Spheres (Nos. 31, 32, and 33
Pressurized Feed Stock Storage Bullets (Nos. 34 to 42)
RCRA Waste Handling System
Three Natural Gas-Fired Calcining Units (B2A, B2B, B2D). These are classified as fuel combustion units because the combustion gases do not directly contact the process materials. Firing rates are 3.0, 2.0, and 3.2 mmBtu/hr, respectively.

3.1.2 Activities that are insignificant activities based upon maximum emissions, pursuant to 35 IAC 201.210(a)(2) or (a)(3), as follows:

None

3.1.3 Activities that are insignificant activities based upon their type or character, pursuant to 35 IAC 201.210(a)(4) through (18), as follows:

Direct combustion units designed and used for comfort heating purposes and fuel combustion emission units as follows: (A) Units with a rated heat input capacity of less than 2.5 mmBtu/hr that fire only natural gas, propane, or liquefied petroleum gas; (B) Units with a rated heat input capacity of less than 1.0 mmBtu/hr that fire only oil or oil in combination with only natural gas, propane, or liquefied petroleum gas; and (C) Units with a rated heat input capacity of less than 200,000 Btu/hr which never burn refuse, or treated or chemically contaminated wood [35 IAC 201.210(a)(4)].

Storage tanks of organic liquids with a capacity of less than 10,000 gallons and an annual throughput of

less than 100,000 gallons per year, provided the storage tank is not used for the storage of gasoline or any material listed as a HAP pursuant to Section 112(b) of the CAA [35 IAC 201.210(a)(10)].

Storage tanks of any size containing virgin or re-refined distillate oil, hydrocarbon condensate from natural gas pipeline or storage systems, lubricating oil, or residual fuel oils [35 IAC 201.210(a)(11)].

Gas turbines and stationary reciprocating internal combustion engines of less than 112 kW (150 horsepower) power output [35 IAC 201.210(a)(15)].

Gas turbines and stationary reciprocating internal combustion engines of between 112 kW and 1,118 kW (150 and 1,500 horsepower) power output that are emergency or standby units [35 IAC 201.210(a)(16)].

Storage tanks of any size containing exclusively soaps, detergents, surfactants, glycerin, waxes, vegetable oils, greases, animal fats, sweeteners, corn syrup, aqueous salt solutions, or aqueous caustic solutions, provided an organic solvent has not been mixed with such materials [35 IAC 201.210(a)(17)].

3.1.4 Activities that are considered insignificant activities pursuant to 35 IAC 201.210(b).

3.2 Compliance with Applicable Requirements

Insignificant activities are subject to applicable requirements notwithstanding status as insignificant activities. In particular, in addition to regulations of general applicability, such as 35 IAC 212.301 and 212.123 (Condition 5.2.2), the Permittee shall comply with the following requirements, as applicable:

3.2.1 For each cold cleaning degreaser, the Permittee shall comply with the applicable equipment and operating requirements of 35 IAC 215.182, 218.182, or 219.182.

3.2.2 For each particulate matter process emission unit, the Permittee shall comply with the applicable particulate matter emission limit of 35 IAC 212.321 or 212.322. For example, the particulate matter emissions from a process emission unit shall not exceed 0.55 pounds per hour if the

emission unit's process weight rate is 100 pounds per hour or less, pursuant to 35 IAC 266.110.

3.2.3 For each organic material emission unit that uses organic material, e.g., a mixer or printing line, the Permittee shall comply with the applicable VOM emission limit of 35 IAC 215.301, 218.301, or 219.301, which requires that organic material emissions not exceed 8.0 pounds per hour or do not qualify as photochemically reactive material as defined in 35 IAC 211.4690.

3.3 Testing of Insignificant Units

The Pressurized Storage Spheres (Nos. 31-33) and Pressurized Storage Bullets (Nos. 34-42) shall undergo an annual certification of adequacy of tank thickness. The results of the tests shall be submitted to the Compliance Section and FOS Section within 30 days of receipt from the tester.

3.4 Addition of Insignificant Activities

3.4.1 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type that is identified in Condition 3.1, until the renewal application for this permit is submitted, pursuant to 35 IAC 201.212(a).

3.4.2 The Permittee must notify the Illinois EPA of any proposed addition of a new insignificant activity of a type addressed by 35 IAC 201.210(a) and 201.211 other than those identified in Condition 3.1, pursuant to Section 39.5(12)(b) of the Act.

3.4.3 The Permittee is not required to notify the Illinois EPA of additional insignificant activities present at the source of a type identified in 35 IAC 201.210(b).

4.0 SIGNIFICANT EMISSION UNITS AT THIS SOURCE

Emission Unit	Description	Emission Control Equipment	Date
"A" Unit	Includes Burners, Methane Injection, Heat Exchanger, Product Separation Filter and Product Material Handling.	Bag Filter on Material Handling	A
"B" Unit	Includes Burners, Methane Injection, Heat Exchanger, Product Separation Filter and Product Material Handling.	Bag Filter on Material Handling	A
Pilot Process Plant	Includes Burners, Methane Injection, Heat Exchanger, and Product Separator	None	A
Process Development Laboratory (PDL)	Includes Burners, Heat Exchanger, and Product Separator	None	A
"AB" HCl Recovery Unit (from "A", "B", Pilot Plant and PDL)	Scrubber/Absorbers Temporary and Long Term Storage	None	A
"C" Unit	Includes Burners, Methane Injection, Heat Exchanger, and Product Separator	Bag Filter on Material Handling	A
"D" Unit	Includes Burners, Methane Injection, Heat Exchanger, Product Separation Filter, and Product Material Handling	Bag Filter on Material Handling	A
"E" Unit	Includes Burners, Methane Injection, Heat Exchanger, Fluid Bed Reactor, Product Separator, And Filter and Product Material Handling	Wet Scrubber on Fluid Bed Reactor and Bag Filter on Material Handling	A
"DE" HCl Recovery Unit (from "C", "D" and "E" Units)	Scrubber/Absorbers Temporary Storage	None	A

A Units were originally constructed prior to 1970, but a 1992 construction permit and sequenced installation classifies the units as new or modified rather than existing.

Emission Unit	Description	Emission Control Equipment	Date
TS-XXX*	Holding Tanks Reactors and Mills and Other Miscellaneous Equipment Depending Upon Process	Bagfilters	1987 1992 1996
AMDC-2	Mixing Tank, Reactor and Dryer, and Miscellaneous Unvented Equipment	Two Condensers (A and B)	1998
TDC	Several Lines Including FDP Process, FRS Process, and Jet Mill Process	Thermal Oxidizer, Condenser, Scrubber, and Baghouses as Needed	1999
Tanks 0044 and 0045	250,000 Gallon Fixed Roof Storage Tanks	K-14 Scrubber	1974
Loadout	Railcar and Tank Truck HCl Loading	K-15 Scrubber	1974
Jet Mill	Classifier/Mill and Cyclone	Baghouse BF-1	2000
Jet Mill	Three Storage Tanks (1, 2, 3)	Baghouses BF-2, 3 and 4	2000
Bag Slitter	Bag Slitter, Hopper Cyclones, Tanks	Baghouse	1993
D Unit Bulk Loading	Railcar and Truck Loading of Fumed Metal Oxides	Baghouse	A

* Includes “F”, “G” and “H” Units.

5.0 OVERALL SOURCE CONDITIONS

5.1 Source Description

5.1.1 This permit is issued based on the source requiring a CAAPP permit as a major source of CO and HAP emissions.

5.1.2 For information purposes and because CO emissions are not listed in Condition 5.5.1 (emissions for fee purposes), allowable CO emissions are approximately 1,160 tons/year.

5.2 Applicable Regulations

5.2.1 Specific emission units at this source are subject to particular regulations as set forth in Section 7 (Unit-Specific Conditions) of this permit.

5.2.2 In addition, emission units at this source are subject to the following regulations of general applicability:

a. No person shall cause or allow the emission of fugitive particulate matter from any process, including any material handling or storage activity, that is visible by an observer looking generally overhead at a point beyond the property line of the source unless the wind speed is greater than 40.2 kilometers per hour (25 miles per hour), pursuant to 35 IAC 212.301 and 212.314.

Compliance with this requirement is considered to be assured by the inherent nature of operations at this source, as demonstrated by historical operation.

b. No person shall cause or allow the emission of smoke or other particulate matter, with an opacity greater than 30 percent, into the atmosphere from any emission unit other than those emission units subject to the requirements of 35 IAC 212.122, pursuant to 35 IAC 212.123(a), except as allowed by 35 IAC 212.123(b) and 212.124.

5.2.3 Ozone Depleting Substances

The Permittee shall comply with the standards for recycling and emissions reduction of ozone depleting substances pursuant to 40 CFR Part 82, Subpart F, except as provided for motor vehicle air conditioners in Subpart B of 40 CFR Part 82:

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.

5.2.4 Risk Management Plan

a. This stationary source, as defined in 40 CFR Section 68.3, is subject to 40 CFR Part 68, the Accidental Release Prevention regulations [40 CFR 68.215(a)(1)].

b. The owner or operator of a stationary source shall revise and update the RMP submitted, as specified in 40 CFR 68.190.

5.2.5 Future Regulations

a. Should this stationary source become subject to a regulation under 40 CFR Parts 60, 61, or 63, or 35 IAC after the date issued of this permit, then the owner or operator shall, in accordance with the applicable regulation(s), comply with the applicable requirements by the date(s) specified and shall certify compliance with the applicable requirements of such regulation(s) as part of the annual compliance certification, as required by 40 CFR Part 70 or 71.

b. No later than upon the submittal for renewal of this permit, the owner or operator shall submit, as part of an application, the necessary information to address either the non-applicability of, or demonstrate compliance with all applicable requirements of any potentially applicable regulation which was promulgated after the date issued of this permit.

5.2.6 Episode Action Plan

a. If the source is required to have an episode action plan pursuant to 35 IAC 244.142, the Permittee shall maintain at the source and have on file with the Illinois EPA a written episode action plan (plan) for reducing the levels of emissions during yellow alerts, red alerts, and emergencies, consistent with safe operating procedures. The plan shall contain the information specified in 35 IAC 244.144.

b. The Permittee shall immediately implement the appropriate steps described in this plan should an air pollution alert or emergency be declared.

c. If a change occurs at the source which requires a revision of the plan (e.g., operational change, change in the source contact person), a copy of the revised plan shall be submitted to the Illinois EPA for review within 30 days of the change. Such plans shall be further revised if disapproved by the Illinois EPA.

d. For sources required to have a plan pursuant to 35 IAC 244.142, a copy of the original plan and any subsequent revisions shall be sent to:

i. Illinois EPA, Compliance Section; and

ii. For sources located in Cook County and outside of the city of Chicago: Cook County Department of Environmental Control; or

iii. For sources located within the city of Chicago: Chicago Department of Environmental Control.

5.2.7 CAM Plan

This stationary source has a pollutant-specific emissions unit that is subject to 40 CFR Part 64, Compliance Assurance Monitoring (CAM) for Major Stationary Sources. The source must submit a CAM plan for each affected pollutant-specific emissions unit upon application for renewal of the initial CAAPP permit, or upon a significant modification to the CAAPP permit for the construction or modification of a large pollutant-specific emissions unit which has the potential post-control device emissions of the applicable regulated air pollutant that equals or exceeds major source threshold levels. The CAM plan may

be required for the D2E scrubber in the "G" Unit (controls HCl emissions from the fluid bed reactor). The methane injection process is not considered to be control equipment.

5.3 Non-Applicability of Regulations of Concern

None

5.4 Source-Wide Operational and Production Limits and Work Practices

In addition to the source-wide requirements in the Standard Permit Conditions in Section 9, the Permittee shall fulfill the following source-wide operational and production limitations and/or work practice requirements:

None

5.5 Source-Wide Emission Limitations

5.5.1 Permitted Emissions for Fees

The annual emissions from the source, not considering insignificant activities as addressed by Section 3.0 of this permit, shall not exceed the following limitations. The overall source emissions shall be determined by adding emissions from all emission units. Compliance with these limits shall be determined on a calendar year basis. These limitations (Condition 5.5.1) are set for the purpose of establishing fees and are not federally enforceable.

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	42.01
Sulfur Dioxide (SO_2)	0.07
Particulate Matter (PM)	64.94
Nitrogen Oxides (NO_x)	0.0
HAP, not included in VOM or PM	232.62[a]
TOTAL	339.64

[a] A small fraction of the total HCl (a HAP) is emitted as an aerosol which is subject to PM emitting rules (See Condition 7.4.3), but greater than 99% of HCl is emitted as a vapor and the entire amount is listed here instead of PM.

5.5.2 Emissions of Hazardous Air Pollutants

Source-wide emission limitations for HAPs as listed in Section 112(b) of the CAA have been set by the Permittee's early reduction demonstration. This source is considered to be a major source of HAPs.

5.5.3 Other Source-Wide Emission Limitations

Other source-wide emission limitations are not set for this source pursuant to either the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21, Illinois EPA rules for Major Stationary Sources Construction and Modification, 35 IAC Part 203, or Section 502(b)(10) of the CAA. However, there may be unit specific emission limitations set forth in Section 7 of this permit pursuant to these rules.

5.6 General Recordkeeping Requirements

5.6.1 Emission Records

The Permittee shall maintain records of the following items for the source to demonstrate compliance with Condition 5.5.1, pursuant to Section 39.5(7)(b) of the Act:

Total annual emissions on a calendar year basis for the emission units covered by Section 7 (Unit Specific Conditions) of this permit.

5.6.2 Records for Operating Scenarios

N/A

5.6.3 Retention and Availability of Records

a. All records and logs required by this permit shall be retained for at least five years from the date of entry (unless a longer retention period is specified by the particular recordkeeping provision herein), shall be kept at a location at the source that is readily accessible to the Illinois EPA or USEPA, and shall be made available for inspection and copying by the Illinois EPA or USEPA upon request.

b. The Permittee shall retrieve and print, on paper during normal source office hours, any records retained in an electronic format (e.g., computer) in

response to an Illinois EPA or USEPA request for records during the course of a source inspection.

5.7 General Reporting Requirements

5.7.1 General Source-Wide Reporting Requirements

The Permittee shall promptly notify the Illinois EPA, Compliance Section, of deviations of the source with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken.

5.7.2 Annual Emissions Report

The annual emissions report required pursuant to Condition 9.7 shall contain emissions information for the previous calendar year.

5.7.3 Annual Reporting of HAP Emissions

The Permittee shall submit an annual report to the Illinois EPA, Compliance Section, on HAP emissions from the source. This may be submitted as part of the Annual Emission Report.

5.8 General Operational Flexibility/Anticipated Operating Scenarios

N/A

5.9 General Compliance Procedures

5.9.1 General Procedures for Calculating HAP and Emissions

Compliance with the source-wide emission limits specified in Condition 5.5 shall be based on the recordkeeping and reporting requirements of Conditions 5.6 and 5.7, and compliance procedures in Section 7 (Unit Specific Conditions) of this permit.

6.0 NOT APPLICABLE TO THIS PERMIT

7.0 UNIT SPECIFIC CONDITIONS

7.1 Unit: Fumed Metal Oxide Manufacturing
Control: Filters

7.1.1 Description

Several process lines operate in a similar manner but there are minor variations. Each of the lines combust with air and hydrogen one or more of the following materials: silicon tetrachloride, methyl trichlorosilane, trichlorosilane, and aluminum trichloride.

Immediately following the main reaction methane is injected into the process stream for a further reaction to convert byproduct chlorine into HCl which can be removed as a saleable product. Chlorine and HCl are both HAPs. There are two sets of absorption towers which remove HCl but these are not classified as control equipment since the HCl solution is sold as a product. The D unit does have a small scrubber (D2E) for HCl removal that is considered control equipment since the HCl solution is not a saleable material.

Each process line has a filter for separating the product (solid form) from process gases. These filters are not control equipment since they are necessary for product recovery. However, there are filters on the product lines after further processing and/or storage/bagging/shipping.

Some units have calciners but the heating unit for the calcining is small enough to be included in insignificant emission units. The heat is indirect.

The methane injection process increases emissions of CO, but greatly reduces emissions of HAPs.

The process stream that includes CO, Cl_2, Chloromethanes and HCl is vented through a tall stack (100 meters) for emission dispersion. Material handling processes are vented near ground level.

7.1.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
"A" Unit	Includes Burners, Methane Injection, Heat Exchanger, Product Separation Filter and Product Material Handling.	Bag Filter on Material Handling
"B" Unit	Includes Burners, Methane Injection, Heat Exchanger, Product Separation Filter and Product Material Handling.	Bag Filter on Material Handling
Pilot Process Plant	Includes Burners, Methane Injection, Heat Exchanger, and Product Separator	None
Process Development Laboratory (PDL)	Includes Burners, Heat Exchanger, and Product Separator	None
"AB" HCl Recovery Unit (from "A", "B", Pilot Plant and PDL)	Scrubber/Absorbers Temporary Storage	None
"C" Unit	Includes Burners, Methane Injection, Heat Exchanger, and Product Separator	Bag Filter on Material Handling
"D" Unit	Includes Burners, Methane Injection, Heat Exchanger, Product Separation Filter, and Product Material Handling	Bag Filter on Material Handling
"E" Unit	Includes Burners, Methane Injection, Heat Exchanger, Fluid Bed Reactor, Product Separator, and Filter and Product Material Handling	Wet Scrubber on Fluid Bed Reactor and Bag Filter on Material Handling

Emission Unit	Description	Emission Control Equipment
"DE" HCl Recovery Unit (from "C", "D" and "E" Units)	Scrubber/Absorbers, Temporary Storage	None

7.1.3 Applicability Provisions and Applicable Regulations

a. The "affected fumed metal oxides manufacturing lines" for the purpose of these unit-specific conditions, is an operation described in Condition 7.1.2.

b. Each affected unit is subject to the emission limits identified in Condition 5.2.2.

c. Each unit is subject to 35 IAC 212.321. This rule is written out in Attachment 1 of this permit, p. 10-1.

d. Malfunction and Breakdown Provisions

This permit does not allow operation of the sources covered under this application during malfunction and breakdown.

Immediately upon the occurrence of an upset condition or a malfunction of any pollution control device, or process equipment, the Permittee shall take such action as is necessary to restore emission control to normal operational levels, which may include shutdown of all or part of the process, reduction of production rates, or other appropriate measures. For the purpose of this permit, an upset condition shall be defined as: (1) a failure of environmental control equipment to maintain conditions as prescribed in the permit application; or (2) a release to the environment from equipment from which there is no release during normal operation.

7.1.4 Non-Applicability of Regulations of Concern

a. This permit is issued based on the affected fumed metal oxides manufacturing lines not being subject to the New Source Performance Standards (NSPS) for Air Oxidation Processes, 40 CFR Part 60, Subpart III, because the affected process does not manufacture any of the chemicals listed in the table in 40 CFR 60.617.

b. This permit is issued based on the affected fumed metal oxides manufacturing lines not being subject to 35 IAC 216.362, because although some of the processes begin with hydrocarbons, the final product is not a poly-basic organic acid as defined in 35 IAC 211.4810.

7.1.5 Operational Requirements and Work Practices

a. Emissions of carbon monoxide (CO) from the methane injection process shall be controlled by operating practice, consistent with effective operation to minimize chlorine and chloromethane emissions.

b. The reaction gases in the methane injection process shall have an excess of oxygen.

c. Carbon monoxide concentration in the exhaust gas shall not exceed 5,000 ppm, hourly overage.

d. Chlorine concentration in the exhaust gas at the stack shall not exceed 500 ppm, hourly average. This limit does not apply during periods of startup, grade change, or production rate changes.

e. Emissions of CO from the calciners shall be controlled by firing commercial fuel, e.g., natural gas or propane, and good operating practice.

Conditions 7.1.5(a) - (e) represent the application of Best Available Control Technology (BACT).

f. The Permittee shall maintain all the baghouses and the scrubbing systems in good working condition.

g. The scrubbant shall be checked daily for suspended solids (at least once every 24 hours). The solid content in the scrubbant shall be checked prior to disposal.

7.1.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected fumed metal oxides manufacturing lines are subject to the following:

Emissions from the affected fumed metal oxides manufacturing lines shall not exceed the following limits:

Contaminant	Emissions (All Lines Combined) (Tons/Month)	(Tons/Year)
Carbon Monoxide	100	1,160
Chlorine and Hydrogen Chloride	30	223
Chloromethanes	1.0	9.0

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total) [T1].

The above limitation for CO was established in Permit 92060026, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). The limits for chlorine, hydrogen chloride and chloromethanes were established in order to demonstrate a 90% reduction in HAP emissions for purposes of an early reduction program. [T1].

7.1.7 Testing Requirements

Upon request by the Illinois EPA, the stack through which all of the above units vent shall be tested for CO, chlorine (Cl_2), hydrogen chloride (HCl) and chloromethanes.

7.1.8 Monitoring Requirements

a. The methane injection systems on each line shall be equipped with a continuous temperature indicator and strip chart recorder or disk storage for reaction temperature(s).

b. The Permittee shall install, operate and maintain a continuous monitoring system on the metal oxide plant stack such as a mass spectrometer or other equivalent device acceptable to the Illinois EPA, which in conjunction with a computerized program, shall determine and record total chlorine, hydrogen chloride, chloromethanes, and carbon monoxide concentration and emissions. The monitoring system for HAPs shall include a backup device for operation during malfunction of the primary unit so as to

achieve a minimum on-stream time of 75% over the reporting quarter.

c. Each baghouse shall be equipped with a gauge to measure pressure differential across the filters in the baghouse.

7.1.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected fumed metal oxides manufacturing lines to demonstrate compliance with Conditions 5.5.1, 7.1.5, and 7.1.6, pursuant to Section 39.5(7)(b) of the Act:

a. Raw Material Usage and Operating Conditions

i. Production rates combined lines (lb/day);

ii. Natural gas and hydrogen usage, combined lines (lb or ft^3 days); and

iii. Reaction temperature for methane injection system, each line (°F).

b. Emissions Information

i. Chlorine emissions (ppm and lb/day);

ii. Chloromethane emissions (lb/day);

iii. Carbon monoxide emissions (ppm and lb/day); and

iv. Hydrogen chloride emissions (lb/day).

c. Upset Conditions

i. Date and duration of upset condition, malfunction, or breakdown;

ii. A full and detailed explanation of the cause for such emissions;

iii. The contaminants emitted and an estimate of the quantity of emissions;

iv. The measures used to restore emission control to normal operational levels; and

v. The steps taken to prevent similar upset conditions, malfunctions, or breakdowns.

d. Records of the operation, maintenance, and calibration of the monitoring systems.

7.1.10 Reporting Requirements

a. The Permittee shall notify the Illinois EPA, Compliance Section and FOS Section, in a quarterly report, of deviations of the affected fumed metal oxides manufacturing lines with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken. The quarterly report shall be submitted within 15 days of the end of the quarter.

Exceedance of the limits in Conditions 7.1.5 or 7.1.6.

b. The Permittee shall submit to the Compliance Section and FOS Regional Office a quarterly CEM Excess Emission Report similar to the report outlined in 35 IAC 201.405 that includes hours of operation, downtime of CEM, fumed metal oxides production records and an emission summary to show compliance with permit conditions.

7.1.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.1.12 Compliance Procedures

Operation with the methane injection system and the monitoring device indicating acceptable operation is assumed to provide compliance with the conditions of this permit.

7.2 Unit: Treated Silica Process
Control: Bagfilter

7.2.1 Description

There are several treated metal oxides (TS) process lines. These processes begin with previously prepared fumed metal oxides so the reactions involve surface changes that do not result in CO, Cl_2 or HCl emissions, but there can be minor amounts of VOM and other pollutants. The emissions are PM that are controlled by bagfilters. All process vents that emit to the atmosphere are routed through the bagfilters.

7.2.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
TS-XXX*	Holding Tanks Reactors and Mills and Other Miscellaneous Equipment Depending Upon Process	Bagfilters

* XXX is a specific number depending upon raw materials and product. This includes the “F”, “G” and “H” Units.

7.2.3 Applicability Provisions and Applicable Regulations

a. The “affected treated metal oxides process” for the purpose of these unit-specific conditions, is a process identified in Condition 7.2.2.

b. Each affected treated metal oxides process is subject to the emission limits identified in Condition 5.2.2.

c. Each affected treated metal oxides process is subject to 35 IAC 212.321. This rule is written out in Attachment 1.

7.2.4 Non-Applicability of Regulations of Concern

N/A

7.2.5 Control Requirements

The bagfilter shall be kept in good condition and operated in accordance with the manufacturer’s recommendations.

7.2.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected treated silica process is subject to the following:

Emissions from the affected treated metal oxide process units shall not exceed the following limits:

Process: TS 500/530	PWR (Lb/Hour)	Emissions (Lb/Hr)[a]	(Ton/Year)
	280		
VOM		0.15	0.66
PM		0.9	3.9
NH_3		2.1	9.2
Process: TS5XX/VRS)			
	251		
VOM		0.08	0.35
PM		0.84	3.7
Process: TS-720			
VOM (Formaldehyde)		0.34	1.5
PM		0.91	4.0

[a] Records are not required to verify each hour, only monthly.

These limits are based on the maximum rate.

Compliance with annual limits shall be determined on a monthly basis from the sum of the data for the current month plus the preceding 11 months (running 12 month total).

The above limitations were established in Construction and/or Operating Permits 72110408, 91120069, and 96010073, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

7.2.7 Operating Requirements

None

7.2.8 Inspection Requirements

Each baghouse shall be equipped with a gauge to measure pressure differential across the filters in the baghouse.

7.2.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected treated metal oxide process to demonstrate compliance with Conditions 5.5.1 and 7.2.6, pursuant to Section 39.5(7)(b) of the Act:

a. Pressure drop across filter in baghouse (weekly, each unit);

b. Material processed (lb/mo);

c. Usage of other raw materials such as VOM and NH_3 (lb/mo); and

d. PM, VOM, and NH_3 emissions (lb/mo).

7.2.10 Reporting Requirements

The Permittee shall notify the Illinois EPA, Compliance Section and FOS Section, in a quarterly report, of deviations of an affected treated metal oxide process unit with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Emissions exceeding the limits in Condition 7.2.6.

7.2.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected treatment metal oxides process unit without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee's obligation to properly obtain a construction permit in a timely manner for any activity constituting construction

or modification of the source, as defined in 35 IAC 201.102:

The raw materials may be varied provided compliance with Conditions 7.2.3 and 7.2.6 are met.

7.2.12 Compliance Procedures

Compliance with Condition 7.2.3 is assured and achieved by the inherent operation of the affected emission units at specified design rates and the baghouse in normal operating conditions.

7.3 Unit: Treatment Development Center (TDC) and Advanced Material Development Center (AMDC)
Control: Thermal Oxidizer, Condenser, Scrubber, and Baghouse

7.3.1 Description

The AMDC is an experimental process for an alternative production method. Some organic chemicals are used that are controlled by a condenser. The TDC is a research facility intended to bridge the gap from laboratory work to commercial production.

7.3.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
AMDC-2	Mixing Tank, Reactor and Dryer, and Miscellaneous Unvented Equipment	Two Condensers (A and B)
TDC	Several Lines Including FDP Process, FRS Process, and Jet Mill Process	Thermal Oxidizer, Condenser, Scrubber, and Baghouses as Needed

7.3.3 Applicability Provisions and Applicable Regulations

a. The “affected development center” for the purpose of these unit-specific conditions, is an operation described in Condition 7.3.2.

b. Each development center is subject to the emission limits identified in Condition 5.2.2.

c. Each unit is subject to 35 IAC 212.321. This rule is written out in Attachment a of this permit, P. 10-1.

7.3.4 Non-Applicability of Regulations of Concern

N/A

7.3.5 Production Limits

a. Production of fumed metal oxides from the TDC shall not exceed 145 lb/hr as limited by Construction Permit 96080109.

b. Each piece of control equipment shall be operated as designed and recommended by the manufacturer to meet the limit in Condition 7.3.6.

7.3.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected development center units are subject to the following:

a. Emissions from the affected AMDC-2 unit shall not exceed the following limits:

VOM Emissions (Ton/Month)	VOM Emissions (Ton/Year)
3.0	36.0

These limits are based on the maximum process rate and a minimum of 90% VOM reduction efficiency by the condensers.

The above limitations were established in Permit 97120002, pursuant to 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits ensure that the construction and/or modification addressed in the aforementioned permit does not constitute a new major source or major modification pursuant to Title I of the CAA, specifically the federal rules for Prevention of Significant Deterioration (PSD), 40 CFR 52.21 [T1].

b. Emissions from the affected TDC unit shall not exceed the following limits:

Pollutant	Emissions (lb/mo)	Emissions (Ton/yr)
PM	500	2.8
VOM	50	0.3
HCl	25	0.13

The above limitations contain revisions to previously issued Permit 96080109. The source has requested that the Illinois EPA establish conditions in this permit that allow various refinements from the conditions of this aforementioned permit, consistent with the information provided in the CAAPP application. The source has requested these

revisions and has addressed the applicability and compliance of Title I of the CAA, specifically 35 IAC Part 203, Major Stationary Sources Construction and Modification and/or 40 CFR 52.21, Prevention of Significant Deterioration (PSD). These limits continue to ensure that the construction and/or modification addressed in this permit does not constitute a new major source or major modification pursuant to these rules. These limits are the primary enforcement mechanism for the equipment and activities permitted in this permit and the information in the CAAPP application contains the most current and accurate information for the source. Specifically, the construction permit included only hourly limits. The same values were converted to monthly and yearly values based on continuous operation. The justification is that such low emission rates do not support such frequent (hourly) recordkeeping. Compliance with the PM emission rate in Condition 7.3.3(c) must be met hourly. [T1R].

7.3.7 Testing Requirements

Upon written request by the Illinois EPA, the Permittee shall determine the VOM emissions from the AMDC-2 process employing standard USEPA test methods.

7.3.8 Monitoring Requirements

The condensers on the AMDC-2 process shall be equipped with an exit temperature monitoring device which is connected to a continuous recorder.

7.3.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for each affected development center to demonstrate compliance with Conditions 5.5.1 and 7.3.6, pursuant to Section 39.5(7)(b) of the Act:

a. Condenser product side exit temperature (°F, continuously when system operational);

b. Raw material usage (lb/mo* and ton/yr); and

* For the TDC unit only the monthly figure needs to be recorded but with operating information sufficient to calculate compliance with Condition 7.3.5.

c. Emissions (lb/mo and ton/yr).

7.3.10 Reporting Requirements

The Permittee shall notify the Illinois EPA, Compliance Section and FOS Section, in a quarterly report, of deviations of an affected development center with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Exceedance of Condition 7.3.5(a) or 7.3.6(a) or (b).

7.3.11 Operational Flexibility/Anticipated Operating Scenarios

The Permittee is authorized to make the following physical or operational change with respect to an affected development center without prior notification to the Illinois EPA or revision of this permit. This condition does not affect the Permittee’s obligation to properly obtain a construction permit in a timely manner for any activity constituting construction or modification of the source, as defined in 35 IAC 201.102:

Since these are experimental units the raw materials may be varied provided that the operating rate or emission limits of Condition 7.3.5 or 7.3.6 are not exceeded.

7.3.12 Compliance Procedures

Compliance is demonstrated by the operation of control equipment, by operation not exceeding the maximum, rate specified by conditions, and the recordkeeping and reporting of Conditions 7.3.9 and 7.3.10.

7.4 Unit: HCl Storage and Loading Area
Control: Scrubber

7.4.1 Description

The hydrogen chloride gas (HCl) produced by the methane injection process is absorbed into water to make 32% hydrochloric acid, stored and then shipped out. HCl is a HAP.

7.4.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Tanks 0044 and 0045	250,000 Gallon Fixed Roof Storage Tanks	K-14 Scrubber
Loadout	Railcar and Tank Truck Loading	K-15 Scrubber

7.4.3 Applicability Provisions and Applicable Regulations

a. The “affected HCl storage tank” for the purpose of these unit-specific conditions, is a storage tank used to store hydrochloric acid and identified in Condition 7.4.2.

b. Each affected tank is subject to the emission limits identified in Condition 5.2.2.

c. The transfer of hydrochloric acid into the storage tanks or loadout into railcars or tank truck is subject to 35 IAC 212.321. This rule is written out in Attachment 1. HCl in aerosol form is considered to be PM. Operation with the scrubber assumed to achieve compliance.

7.4.4 Non-Applicability of Regulations of Concern

This permit is issued based on the affected HCl storage tanks and loading area not being subject to 40 CFR Part 63, Subpart CCC, because there is no pickling performed at this site although the HCl acid produced may be used for pickling at other sites by the purchasers of the acid.

7.4.5 Control Requirements

Hydrochloric acid may not be loaded into tank trucks or railcars if the scrubber is not operational. Acid may be

transferred to the storage tanks from day tanks in the production area if the scrubber is not operational.

7.4.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected storage tanks and loadout area are subject to the following:

N/A

There are no specific emission limitations for this unit, however, there are source wide emission limitations in Condition 5.5 that include this unit.

7.4.7 Testing Requirements

The two HCl storage tanks (Nos. 44 and 45) shall undergo an annual certification of adequacy of tank thickness. (See also Section 3.3 which requires a similar test on other tanks.)

7.4.8 Monitoring Requirements

The scrubber shall be equipped with a monitor to measure scrubbant (water) flow rate.

7.4.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected control device to demonstrate compliance with Conditions 5.5.1 and 7.4.8, pursuant to Section 39.5(7)(b) of the Act:

a. Scrubbant flow rate (gal/min), once daily; and

b. HCl emissions (lb/mo).

7.4.10 Reporting Requirements

The Permittee shall notify the Illinois EPA, Compliance Section and FOS Section, in a quarterly report, of deviations of an affected storage tank or loadout area with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Loadout of acid when the scrubber is not operating.

7.4.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.4.12 Compliance Procedures

Operation with the scrubber is assumed to demonstrate compliance.

7.5 Unit: Jet Mill Process
Control: Baghouses

7.5.1 Description

The product manufactured by the Permittee can have differing properties depending on particle size. The jet mill uses air pulses and classifiers to transform the raw product into desirable particle sizes. Baghouses control the PM emissions resulting from the processing and transfer of the material.

7.5.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Jet Mill	Classifier/Mill and Cyclone	Baghouse BF-1
Jet Mill	Three Storage Tanks (1, 2, 3)	Baghouses BF-2, 3 and 4

7.5.3 Applicability Provisions and Applicable Regulations

a. The “affected jet mill process” for the purpose of these unit-specific conditions, is a process for separating previously produced material into various sizes and then transferring into tanks for packaging. These units are identified in Condition 7.5.2.

b. The affected jet mill process is subject to the emission limits identified in Condition 5.2.2.

c. This process is subject to 35 IAC 212.321. This rule is written out in Attachment 1. If a material transfer into the tanks involves more than one tank at a time, the emissions from the baghouses controlling the tanks must be aggregated and the total process weight rate used to determine allowable.

The annual limit in Condition 7.5.6 is a much lower rate than allowed by the rule and compliance with that limit assures compliance with 35 IAC 212.321.

7.5.4 Non-Applicability of Regulations of Concern

N/A

7.5.5 Control Requirements

Product may not be transferred to the cyclone or any tank which has a baghouse that is not functioning properly. Operation is not allowed during malfunction or breakdown of the control equipment.

7.5.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected jet mill process is subject to the following:

Emissions from the affected jet mill process shall not exceed the following limits:

PM Emissions	
(Ton/Month)	(Ton/Year)
0.05	0.44

The above limitations were established in Permit 99080064 but the negligible emission condition of 0.1 lb/hr was converted to an equivalent lb/month rate [T1R].

7.5.7 Testing Requirements

None

7.5.8 Monitoring Requirements

Each baghouse shall be equipped with a gauge to measure pressure differential across the filters in the baghouse.

7.5.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items for the affected jet mill process to demonstrate compliance with Conditions 5.5.1 and 7.5.6, pursuant to Section 39.5(7)(b) of the Act:

a. Pressure drop across filters in baghouse (weekly, each unit); and

b. Annual PM emissions.

7.5.10 Reporting Requirements

The Permittee shall notify the Illinois EPA, Compliance Section and FOS Section, in a quarterly report, of deviations of an affected jet mill process with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Exceedance of the limit in Condition 7.5.6, shall be reported within 10 working days of the end of the calendar quarter in which it occurs.

7.5.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.5.12 Compliance Procedures

Operating with a baghouse in normal operating conditions is assumed to achieve compliance with hourly and annual limits.

7.6 Unit: Bag Slitter Process
Control: Baghouse

7.6.1 Description

Fumed metal oxides can be received in bags at the Cabot Corporation, and are opened using an automatic bag emptier. The bag slitter (opener) is enclosed. The empty bags flow to a compactor where they are compacted prior to disposal. The material from the opened bag drops into a vibrating hopper and then flows either through a cyclone to the DM 5 tank or through another cyclone to the pourback Tank F 71 for future processing. The cyclones are not used as control equipment, rather as part of the material handling system. A baghouse controls the PM emissions resulting from the processing and transfer of material.

7.6.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
Bag Slitter Process	Bag Slitter (Emptier), Cyclones, Tanks	Baghouse F7K

7.6.3 Applicability Pro9visions and Applicable Regulations

a. The “affected bag slitter process” for the purpose of these unit-specific conditions, is a process for receiving fumed metal oxides in bags and transferring the material into tanks for further processing. These units are identified in Condition 7.6.2.

b. The affected bag slitter process is subject to the emission limits identified in Condition 5.2.2.

c. The process is subject to 35 IAC 212.321. This rule is written out in Attachment 1.

The annual limit in Condition 7.6.6 is a much lower rate than allowed by the rule and compliance with that limit assures compliance with 35 IAC 212.321.

7.6.4 Non-Applicability of Regulations of Concern

N/A

7.6.5 Control Requirements

Product may not be transferred to the cyclones or any tank unless the baghouse control is functioning properly. Operation is not allowed during malfunction or breakdown of the control equipment.

7.6.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected bag slitter process is subject to the following:

Emissions from the affected bag slitter process shall not exceed the following limits:

PM Emissions (Tons/Month)	PM Emissions (Tons/Year)
0.18	2.19

The hourly emission limitation was converted to an equivalent tons/month rate.

7.6.7 Testing Requirements

None

7.6.8 Monitoring Requirements

The baghouse shall be equipped with a gauge to measure pressure differential across the filters in the baghouse.

7.6.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items by the affected bag slitter process to demonstrate compliance with Condition 5.5.1 and 7.6.6, pursuant to Section 39.5(7)(b) of the Act:

a. Pressure drop across filter in baghouse (weekly, each unit).

b. PM emission (tons/month).

7.6.10 Reporting Requirements

The Permittee shall notify the Illinois EPA, Compliance Section and FOS Section, of deviations of the affected bag slitter process with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Exceedance of the limit in Condition 7.6.6 will be reported within 15 days of the end of the calendar quarter in which the exceedance occurred.

7.6.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.6.12 Compliance Procedures

Operation with the baghouse is assumed to demonstrate compliance.

7.7 Unit: D Unit Bulk Loading
Control: Baghouse

7.7.1 Description

Fumed metal oxides can be loaded into railcar or truck trailers. The loadout is a closed system in that the fumed metal oxide product is loaded into one hatch of the rail car or truck trailer while another hatch is used to remove dust laden air to a baghouse. A baghouse controls the PM emissions resulting from the transfer of material.

7.7.2 List of Emission Units and Air Pollution Control Equipment

Emission Unit	Description	Emission Control Equipment
D Unit Bulk Loading	Loading Rack	Baghouse

7.7.3 Applicability Provisions and Applicable Regulations

a. The “affected D Unit bulk loading process”, for the purpose of these unit-specific conditions, is a process for loading fumed metal oxides into rail car or truck trailers. These units are identified in Condition 7.6.2.

b. The affected D Unit bulk loading process is subject to the emission limits identified in Condition 5.2.2.

c. The process is subject to 35 IAC 212.321. This rule is written out in Attachment 1.

7.7.4 Non-Applicability of Regulations of Concern

N/A

7.7.5 Control Requirements

Product may not be loaded into any rail car or truck trailer unless the baghouse control is functioning properly. Operation is not allowed during malfunction or breakdown of the control equipment.

7.7.6 Emission Limitations

In addition to Condition 5.2.2 and the source wide emission limitations in Condition 5.5, the affected D Unit bulk loading process is subject to the following:

Emissions from the affected D Unit bulk loading process shall not exceed the following limits:

PM Emissions (Tons/Month)	PM Emissions (Tons/Year)
0.9	10.6

7.7.7 Testing Requirements

None

7.7.8 Monitoring Requirements

The baghouse shall be equipped with a gauge to measure pressure differential across the filters in the baghouse.

7.7.9 Recordkeeping Requirements

In addition to the records required by Condition 5.6, the Permittee shall maintain records of the following items by the affected D Unit bulk loading process to demonstrate compliance with Condition 5.5.1 and 7.6.6, pursuant to Section 39.5(7)(b) of the Act:

a. Pressure drop across filter in baghouse (weekly, each unit).

b. PM emissions (tons/month).

7.7.10 Reporting Requirements

The Permittee shall notify the Illinois EPA, Compliance Section and FOS Section, of deviations of the affected bag slitter process with the permit requirements as follows, pursuant to Section 39.5(7)(f)(ii) of the Act. Reports shall describe the probable cause of such deviations, and any corrective actions or preventive measures taken:

Exceedance of the limit in Condition 7.6.6 will be reported within 15 days of the end of the calendar quarter in which the exceedance occurred.

7.7.11 Operational Flexibility/Anticipated Operating Scenarios

N/A

7.7.12 Compliance Procedures

Operation with the baghouse is assumed to demonstrate compliance.

8.0 GENERAL PERMIT CONDITIONS

8.1 Permit Shield

Pursuant to Section 39.5(7)(j) of the Act, the Permittee has requested and has been granted a permit shield. This permit shield provides that compliance with the conditions of this permit shall be deemed compliance with applicable requirements which were applicable as of the date the proposed permit for this source was issued, provided that either the applicable requirements are specifically identified within this permit, or the Illinois EPA, in acting on this permit application, has determined that other requirements specifically identified are not applicable to this source and this determination (or a concise summary thereof) is included in this permit.

This permit shield does not extend to applicable requirements which are promulgated after _____**{insert public notice start date}** (the date of issuance of the draft permit) unless this permit has been modified to reflect such new requirements.

8.2 Applicability of Title IV Requirements (Acid Deposition Control)

This source is not an affected source under Title IV of the CAA and is not subject to requirements pursuant to Title IV of the CAA.

8.3 Emissions Trading Programs

No permit revision shall be required for increases in emissions allowed under any USEPA approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided for elsewhere in this permit and that are authorized by the applicable requirement [Section 39.5(7)(o)(vii) of the Act].

As of the date of issuance of this permit, there are no such economic incentive, marketable permit or emission trading programs that have been approved by USEPA.

8.4 Operational Flexibility/Anticipated Operating Scenarios

8.4.1 Changes Specifically Addressed by Permit

Physical or operational changes specifically addressed by the Conditions of this permit that have been identified as not requiring Illinois EPA notification may be implemented without prior notice to the Illinois EPA.

8.4.2 Changes Requiring Prior Notification

The Permittee is authorized to make physical or operational changes that contravene express permit terms without applying for or obtaining an amendment to this permit, provided that [Section 39.5(12)(a)(i) of the Act]:

a. The changes do not violate applicable requirements;

b. The changes do not contravene federally enforceable permit terms or conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements;

c. The changes do not constitute a modification under Title I of the CAA;

d. Emissions will not exceed the emissions allowed under this permit following implementation of the physical or operational change; and

e. The Permittee provides written notice to the Illinois EPA, Division of Air Pollution Control, Permit Section, at least 7 days before commencement of the change. This notice shall:

i. Describe the physical or operational change;

ii. Identify the schedule for implementing the physical or operational change;

iii. Provide a statement of whether or not any New Source Performance Standard (NSPS) is applicable to the physical or operational change and the reason why the NSPS does or does not apply;

iv. Provide emission calculations which demonstrate that the physical or operational change will not result in a modification; and

v. Provide a certification that the physical or operational change will not result in emissions greater than authorized under the Conditions of this permit.

8.5 Testing Procedures

Tests conducted to measure composition of materials, efficiency of pollution control devices, emissions from process or control equipment, or other parameters shall be conducted using standard test methods. Documentation of the test date, conditions, methodologies, calculations, and test results shall be retained pursuant to the recordkeeping procedures of this permit. Reports of any tests conducted as required by this permit or as the result of a request by the Illinois EPA shall be submitted as specified in Condition 8.6.

8.6 Reporting Requirements

8.6.1 Monitoring Reports

If monitoring is required by any applicable requirements or conditions of this permit, a report summarizing the required monitoring results, as specified in the conditions of this permit, shall be submitted to the Air Compliance Section of the Illinois EPA every six months as follows [Section 39.5(7)(f) of the Act]:

Monitoring Period	Report Due Date
January - June	September 1
July - December	March 1

All instances of deviations from permit requirements must be clearly identified in such reports. All such reports shall be certified in accordance with Condition 9.9.

8.6.2 Test Notifications

Unless otherwise specified elsewhere in this permit, a written test plan for any test required by this permit shall be submitted to the Illinois EPA for review at least 60 days prior to the testing pursuant to Section 39.5(7)(a) of the Act. The notification shall include at a minimum:

a. The name and identification of the affected unit(s);

b. The person(s) who will be performing sampling and analysis and their experience with similar tests;

c. The specific conditions under which testing will be performed, including a discussion of why these

conditions will be representative of maximum emissions and the means by which the operating parameters for the source and any control equipment will be determined;

d. The specific determination of emissions and operation which are intended to be made, including sampling and monitoring locations;

e. The test method(s) which will be used, with the specific analysis method, if the method can be used with different analysis methods;

f. Any minor changes in standard methodology proposed to accommodate the specific circumstances of testing, with justification; and

g. Any proposed use of an alternative test method, with detailed justification.

8.6.3 Test Reports

Unless otherwise specified elsewhere in this permit, the results of any test required by this permit shall be submitted to the Illinois EPA within 60 days of completion of the testing. The test report shall include at a minimum [Section 39.5(7)(e)(i) of the Act]:

a. The name and identification of the affected unit(s);

b. The date and time of the sampling or measurements;

c. The date any analyses were performed;

d. The name of the company that performed the tests and/or analyses;

e. The test and analytical methodologies used;

f. The results of the tests including raw data, and/or analyses including sample calculations;

g. The operating conditions at the time of the sampling or measurements; and

h. The name of any relevant observers present including the testing company’s representatives, any Illinois EPA or USEPA representatives, and the representatives of the source.

8.6.4 Reporting Addresses

a. The following addresses should be utilized for the submittal of reports, notifications, and renewals:

i. Illinois EPA - Air Compliance Section

Illinois Environmental Protection Agency
Bureau of Air
Compliance Section (MC 40)
P.O. Box 19276
Springfield, Illinois 62794-9276

ii. Illinois EPA - Air Regional Field Office

Illinois Environmental Protection Agency
Division of Air Pollution Control
2009 Mall Street
Collinsville, Illinois 62234

iii. Illinois EPA - Air Permit Section

Illinois Environmental Protection Agency
Division of Air Pollution Control
Permit Section (MC 11)
P.O. Box 19506
Springfield, Illinois 62794-9506

iv. USEPA Region 5 - Air Branch

USEPA (AR - 17J)
Air & Radiation Division
77 West Jackson Boulevard
Chicago, Illinois 60604

b. Unless otherwise specified in the particular provision of this permit, reports shall be sent to the Illinois EPA - Air Compliance Section with a copy sent to the Illinois EPA - Air Regional Field Office.

8.7 Obligation to Comply with Title I Requirements

Any term, condition, or requirement identified in this permit by T1, T1R, or T1N is established or revised pursuant to 35 IAC Part 203 or 40 CFR 52.21 (“Title I provisions”) and incorporated into this permit pursuant to both Section 39.5 and Title I provisions. Notwithstanding the expiration date on the first page of this permit, the Title I conditions remain in effect pursuant to Title

I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

9.0 STANDARD PERMIT CONDITIONS

9.1 Effect of Permit

9.1.1 The issuance of this permit does not release the Permittee from compliance with State and Federal regulations which are part of the Illinois State Implementation Plan, as well as with other applicable statutes and regulations of the United States or the State of Illinois or applicable ordinances, except as specifically stated in this permit and as allowed by law and rule [Section 39.5(7)(j)(iv) of the Act].

9.1.2 In particular, this permit does not alter or affect the following:

a. The provisions of Section 303 (emergency powers) of the CAA, including USEPA's authority under that Section;

b. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;

c. The applicable requirements of the acid rain program consistent with Section 408(a) of the CAA; and

d. The ability of USEPA to obtain information from a source pursuant to Section 114 (inspections, monitoring, and entry) of the CAA.

9.1.3 Notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

9.2 General Obligations of Permittee

9.2.1 Duty to Comply

The Permittee must comply with all terms and conditions of this permit. Any permit noncompliance constitutes a violation of the CAA and the Act, and is grounds for any or all of the following: enforcement action, permit termination, revocation and reissuance, modification, or denial of a permit renewal application [Section 39.5(7)(o)(i) of the Act].

The Permittee shall meet applicable requirements that become effective during the permit term in a timely manner unless an alternate schedule for compliance with the applicable requirement is established.

9.2.2 Duty to Maintain Equipment

The Permittee shall maintain all equipment covered under this permit in such a manner that the performance or operation of such equipment shall not cause a violation of applicable requirements.

9.2.3 Duty to Cease Operation

No person shall cause, threaten or allow the continued operation of any emission unit during malfunction or breakdown of the emission unit or related air pollution control equipment if such operation would cause a violation of an applicable emission standard, regulatory requirement, ambient air quality standard or permit limitation unless such malfunction or breakdown is allowed by a permit condition [Section 39.5(6)(c) of the Act].

9.2.4 Disposal Operations

The source shall be operated in such a manner that the disposal of air contaminants collected by the equipment operations, or activities shall not cause a violation of the Act or regulations promulgated thereunder.

9.2.5 Duty to Pay Fees

The Permittee must pay fees to the Illinois EPA consistent with the fee schedule approved pursuant to Section 39.5(18) of the Act, and submit any information relevant thereto [Section 39.5(7)(o)(vi) of the Act]. The check should be payable to "Treasurer, State of Illinois" and sent to: Fiscal Services Section, Illinois Environmental Protection Agency, P.O. Box 19276, Springfield, Illinois 62794-9276.

9.3 Obligation to Allow Illinois EPA Surveillance

Upon presentation of proper credentials and other documents, the Permittee shall allow the Illinois EPA, or an authorized representative to perform the following [Section 39.5(7)(a) and (p)(ii) of the Act and 415 ILCS 5/4]:

a. Enter upon the Permittee's premises where an actual or potential emission unit is located; where any regulated equipment, operation, or activity is located or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect during hours of operation any sources, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this permit;

d. Sample or monitor any substances or parameters at any location:

i. At reasonable times, for the purposes of assuring permit compliance; or

ii. As otherwise authorized by the CAA, or the Act.

e. Obtain and remove samples of any discharge or emission of pollutants authorized by this permit; and

f. Enter and utilize any photographic, recording, testing, monitoring, or other equipment for the purposes of preserving, testing, monitoring, or recording any activity, discharge or emission at the source authorized by this permit.

9.4 Obligation to Comply with Other Requirements

The issuance of this permit does not release the Permittee from applicable State and Federal laws and regulations, and applicable local ordinances addressing subjects other than air pollution control.

9.5 Liability

9.5.1 Title

This permit shall not be considered as in any manner affecting the title of the premises upon which the permitted source is located.

9.5.2 Liability of Permittee

This permit does not release the Permittee from any liability for damage to person or property caused by or

resulting from the construction, maintenance, or operation of the sources.

9.5.3 Structural Stability

This permit does not take into consideration or attest to the structural stability of any unit or part of the source.

9.5.4 Illinois EPA Liability

This permit in no manner implies or suggests that the Illinois EPA (or its officers, agents or employees) assumes any liability, directly or indirectly, for any loss due to damage, installation, maintenance, or operation of the source.

9.5.5 Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege [Section 39.5(7)(o)(iv) of the Act].

9.6 Recordkeeping

9.6.1 Control Equipment Maintenance Records

A maintenance record shall be kept on the premises for each item of air pollution control equipment. As a minimum, this record shall show the dates of performance and nature of preventative maintenance activities.

9.6.2 Records of Changes in Operation

A record shall be kept describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under this permit, and the emissions resulting from those changes [Section 39.5(12)(b)(iv) of the Act].

9.6.3 Retention of Records

a. Records of all monitoring data and support information shall be retained for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, original strip-chart recordings for

continuous monitoring instrumentation, and copies of all reports required by this permit [Section 39.5(7)(e)(ii) of the Act].

b. Other records required by this permit shall be retained for a period of at least 5 years from the date of entry unless a longer period is specified by a particular permit provision.

9.7 Annual Emissions Report

The Permittee shall submit an annual emissions report to the Illinois EPA, Compliance Section no later than May 1 of the following year, as required by 35 IAC Part 254.

9.8 Requirements for Compliance Certification

Pursuant to Section 39.5(7)(p)(v) of the Act, the Permittee shall submit annual compliance certifications. The compliance certifications shall be submitted no later than May 1 or more frequently as specified in the applicable requirements or by permit condition. The compliance certifications shall be submitted to the Air Compliance Section, Air Regional Field Office, and USEPA Region 5 – Air Branch. The addresses for the submittal of the compliance certifications are provided in Condition 8.6.4 of this permit.

a. The certification shall include the identification of each term or condition of this permit that is the basis of the certification; the compliance status; whether compliance was continuous or intermittent; the method(s) used for determining the compliance status of the source, both currently and over the reporting period consistent with the conditions of this permit.

b. All compliance certifications shall be submitted to USEPA Region 5 in Chicago as well as to the Illinois EPA.

c. All compliance reports required to be submitted shall include a certification in accordance with Condition 9.9.

9.9 Certification

Any document (including reports) required to be submitted by this permit shall contain a certification by a responsible official of the Permittee that meets the requirements of Section 39.5(5) of the Act [Section 39.5(7)(p)(i) of the Act]. An example Certification by a Responsible Official is included as an attachment to this permit.

9.10 Defense to Enforcement Actions

9.10.1 Need to Halt or Reduce Activity Not a Defense

It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit [Section 39.5(7)(o)(ii) of the Act].

9.10.2 Emergency Provision

a. An emergency shall be an affirmative defense to an action brought for noncompliance with the technology-based emission limitations under this permit if the following conditions are met through properly signed, contemporaneous operating logs, or other relevant evidence:

   i. An emergency occurred as provided in Section 39.5(7)(k) of the Act and the Permittee can identify the cause(s) of the emergency. Normally, an act of God such as lightning or flood is considered an emergency;

   ii. The permitted source was at the time being properly operated;

   iii. The Permittee submitted notice of the emergency to the Illinois EPA within two working days of the time when emission limitations were exceeded due to the emergency. This notice must contain a detailed description of the emergency, any steps taken to mitigate emissions, and corrective actions taken; and

   iv. During the period of the emergency the Permittee took all reasonable steps to minimize levels of emissions that exceeded the emission limitations, standards, or regulations in this permit.

b. This provision is in addition to any emergency or upset provision contained in any applicable requirement. This provision does not relieve a Permittee of any reporting obligations under existing federal or state laws or regulations.

9.11 Permanent Shutdown

This permit only covers emission units and control equipment while physically present at the indicated source location(s). Unless this permit specifically provides for equipment relocation, this permit is void for the operation or activity of any item of equipment on the date it is removed from the permitted location(s) or permanently shut down. This permit expires if all equipment is removed from the permitted location(s), notwithstanding the expiration date specified on this permit.

9.12 Reopening and Reissuing Permit for Cause

9.12.1 Permit Actions

This permit may be modified, reopened, and reissued, for cause pursuant to Section 39.5(15) of the Act. The filing of a request by the Permittee for a permit modification, revocation, and reissuance, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition [Section 39.5(7)(o)(iii) of the Act].

9.12.2 Reopening and Revision

This permit must be reopened and revised if any of the following occur [Section 39.5(15)(a) of the Act]:

a. Additional requirements become applicable to the equipment covered by this permit and three or more years remain before expiration of this permit;

b. Additional requirements become applicable to an affected source for acid deposition under the acid rain program;

c. The Illinois EPA or USEPA determines that this permit contains a material mistake or inaccurate statement when establishing the emission standards or limitations, or other terms or conditions of this permit; and

d. The Illinois EPA or USEPA determines that this permit must be revised to ensure compliance with the applicable requirements of the Act.

9.12.3 Inaccurate Application

The Illinois EPA has issued this permit based upon the information submitted by the Permittee in the permit application. Any misinformation, false statement or misrepresentation in the application shall be grounds for revocation under Section 39.5(15)(b) of the Act.

9.12.4 Duty to Provide Information

The Permittee shall furnish to the Illinois EPA, within a reasonable time specified by the Illinois EPA any information that the Illinois EPA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. Upon request, the Permittee shall also furnish to the Illinois EPA copies of records required to be kept by this permit, or for information claimed to be confidential, the Permittee may furnish such records directly to USEPA along with a claim of confidentiality [Section 39.5(7)(o)(v) of the Act].

9.13 Severability Clause

The provisions of this permit are severable, and should any one or more be determined to be illegal or unenforceable, the validity of the other provisions shall not be affected. The rights and obligations of the Permittee shall be construed and enforced as if this permit did not contain the particular provisions held to be invalid and the applicable requirements underlying these provisions shall remain in force [Section 39.5(7)(i) of the Act].

9.14 Permit Expiration and Renewal

The right to operate terminates on the expiration date unless the Permittee has submitted a timely and complete renewal application. For a renewal to be timely it must be submitted no later than 9 and no sooner than 12 months prior to expiration. The equipment may continue to operate during the renewal period until final action is taken by the Illinois EPA, in accordance with the original permit conditions [Section 39.5(5)(l), (n), and (o) of the Act].

10.0 ATTACHMENTS

10.1 Attachment 1 - Allowable Emissions of Particulate Matter

Process Emission Units for Which Construction or Modification Commenced On or After April 14, 1972

No person shall cause or allow the emission of particulate matter into the atmosphere in any one hour period from any new process emission unit, either alone or in combination with the emission of particulate matter from all other similar process emission units for which construction or modification commenced on or after April 14, 1972, at a source or premises, exceeds the allowable emission rates specified in the following equation:

$$E = A(P)^B$$

Where:

P = Process weight rate;
E = Allowable emission rate; and,

For process weight rate up to 450 ton/hour:

	Metric	English
P	Mg/hr	T/hr
E	kg/hr	lbs/hr
A	1.214	2.54
B	0.534	0.534

10.2 Attachment 2 - Example Certification by a Responsible Official

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____

Name: _____

Official Title: _____

Telephone No.: _____

Date Signed: _____

DGP:jar

10.3 Attachment 3 Guidance on Revising This Permit

The Permittee must submit an application to the Illinois EPA using the appropriate revision classification in accordance with Sections 39.5(13) and (14) of the Act and 35 IAC 270.302. Specifically, there are currently three classifications for revisions to a CAAPP permit. These are:

1. Administrative Permit Amendment;
2. Minor Permit Modification; and
3. Significant Permit Modification.

The Permittee must determine, request, and submit the necessary information to allow the Illinois EPA to use the appropriate procedure to revise the CAAPP permit. A brief explanation of each of these classifications follows.

1. Administrative Permit Amendment

- Corrects typographical errors;
- Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source;
- Requires more frequent monitoring or reporting by the Permittee;
- Allows for a change in ownership or operational control of the source where no other change in the permit is necessary, provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new Permittees has been submitted to the Illinois EPA;
- Incorporates into the CAAPP permit a construction permit, provided the conditions of the construction permit meet the requirements for the issuance of CAAPP permits; or
- Incorporates into the CAAPP permit revised limitations or other requirements resulting from the application of an approved economic incentives rule, marketable permits rule, or generic emissions trading rule.

2. Minor Permit Modification

- Do not violate any applicable requirement;
- Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
- Do not require a case-by-case determination of an emission limitation or other standard, or a source-specific determination of ambient impacts, or a visibility or increment analysis;
- Do not seek to establish or change a permit term or condition for which there is no corresponding underlying requirement and which avoids an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
    - A federally enforceable emissions cap assumed to avoid classification as a modification under any provision of Title I of the CAA; and
    - An alternative emissions limit approved pursuant to regulations promulgated under Section 112(i)(5) of the CAA.
- Are not modifications under any provision of Title I of the CAA; and
- Are not required to be processed as a significant permit modification.

An application for a minor permit modification shall include the following:

- A description of the change, the emissions resulting from the change, and any new applicable requirements that will apply if the change occurs;
- The source's suggested draft permit/conditions;
- Certification by a responsible official that the proposed modification meets the criteria for use of minor permit modification procedures and a request that such procedures be used; and

- Information as contained on form 271-CAAPP for the Illinois EPA to use to notify USEPA and affected States.

3. Significant Permit Modification

- Applications that do not qualify as either minor permit modifications or as administrative permit amendments;

- Applications requesting a significant change in existing monitoring permit terms or conditions;

- Applications requesting a relaxation of reporting or recordkeeping requirements; and

- Cases in which, in the judgment of the Illinois EPA, action on an application for modification would require decisions to be made on technically complex issues.

An application for a significant permit modification shall include the following:

- A detailed description of the proposed change(s), including all physical changes to equipment, changes in the method of operation, changes in emissions of each pollutant, and any new applicable requirements which will apply as a result of the proposed change. Note that the Permittee need only submit revised forms for equipment and operations that will be modified.

The Illinois EPA requires the information on the following appropriate forms to be submitted in accordance with the proper classification:

- Form 273-CAAPP, REQUEST FOR ADMINISTRATIVE PERMIT AMENDMENT FOR CAAPP PERMIT; or

- Form 271-CAAPP, MINOR PERMIT MODIFICATION FOR CAAPP PERMIT; or

- Form 200-CAAPP, APPLICATION FOR CAAPP PERMIT (for significant modification).

Application forms can be obtained from the Illinois EPA website at http://www.epa.state.il.us/air/forms.

Note that the request to revise the permit must be certified for truth, accuracy, and completeness by a responsible official.

Note that failure to submit the required information may require the Illinois EPA to deny the application. The Illinois EPA reserves the right to require that additional information be submitted as needed to evaluate or take final action on applications pursuant to Section 39.5(5)(g) of the Act and 35 IAC 270.305.

Illinois Environmental Protection Agency
Division Of Air Pollution Control -- Permit Section
P.O. Box 19506
Springfield, Illinois 62794-9506

Application For Construction Permit (For CAAPP Sources Only)	For Illinois EPA use only
	ID number:
	Permit number:
	Date received:

This form is to be used by CAAPP sources to supply information necessary to obtain a construction permit. Please attach other necessary information and completed CAAPP forms regarding this construction/modification project.

Source Information

1. Source name:		
2. Source street address:		
3. City:		4. Zip code:
5. Is the source located within city limits?		☐ Yes ☐ No
6. Township name:	7. County:	8. ID number:

Owner Information

9. Name:		
10. Address:		
11. City:	12. State:	13. Zip code:

Operator Information (if different from owner)

14. Name		
15. Address:		
16. City:	17. State:	18. Zip code:

Applicant Information

19. Who is the applicant? ☐ Owner ☐ Operator	20. All correspondence to: (check one) ☐ Owner ☐ Operator ☐ Source
21. Attention name and/or title for written correspondence:	
22. Technical contact person for application:	23. Contact person's telephone number:

This Agency is authorized to require and you must disclose this information under 415 ILCS 5/39. Failure to do so could result in the application being denied and penalties under 415 ILCS 5 et seq. It is not necessary to use this form in providing this information. This form has been approved by the forms management center.

Summary Of Application Contents

24.	Does the application address whether the proposed project would constitute a new major source or major modification under each of the following programs: a) Non-attainment New Source Review – 35 IAC Part 203; b) Prevention of Significant Deterioration (PSD) – 40 CFR 52.21; c) Hazardous Air Pollutants: Regulations Governing Constructed or Reconstructed Major Sources – 40 CFR Part 63?	☐ Yes ☐ No
25.	Does the application identify and address all applicable emissions standards, including those found in the following: a) Board Emission Standards – 35 IAC Chapter I, Subtitle B; b) Federal New Source Performance Standards – 40 CFR Part 60; c) Federal Standards for Hazardous Air Pollutants – 40 CFR Parts 61 and 63?	☐ Yes ☐ No
26.	Does the application include a process flow diagram(s) showing all emission units and control equipment, and their relationship, for which a permit is being sought?	☐ Yes ☐ No
27.	Does the application include a complete process description for the emission units and control equipment for which a permit is being sought?	☐ Yes ☐ No
28.	Does the application include the information as contained in completed CAAPP forms for all appropriate emission units and air pollution control equipment, listing all applicable requirements and proposed exemptions from otherwise applicable requirements, and identifying and describing any outstanding legal actions by either the USEPA or the Illinois EPA? Note: The use of "APC" application forms is not appropriate for applications for CAAPP sources. CAAPP forms should be used to supply information.	☐ Yes ☐ No
29.	If the application contains TRADE SECRET information, has such information been properly marked and claimed, and have two separate copies of the application suitable for public inspection and notice been submitted, in accordance with applicable rules and regulations?	☐ Yes ☐ No ☐ Not Applicable, No TRADE SECRET information in this application

Note 1: Answering "No" to any of the above may result in the application being deemed incomplete.

Signature Block

This certification must be signed by a responsible official. Applications without a signed certification will be returned as incomplete.

30. I certify under penalty of law that, based on information and belief formed after reasonable inquiry, the statements and information contained in this application are true, accurate and complete.

Authorized Signature:

BY:

_____ _____

AUTHORIZED SIGNATURE TITLE OF SIGNATORY

_____ _____ / _____ / _____

TYPED OR PRINTED NAME OF SIGNATORY DATE

Note 2: An operating permit for the construction/modification permitted in a construction permit must be obtained by applying for the appropriate revision to the source's CAAPP permit, if necessary.

I. INTRODUCTION

This source has applied for a Clean Air Act Permit Program (CAAPP) operating permit for its existing operation. The CAAPP is the program established in Illinois for the operating permits for significant stationary sources required by the federal Clean Air Act, as amended in 1990. The conditions in a CAAPP permit are enforceable by both the Illinois Environmental Protection Agency (Illinois EPA) and the USEPA.

The Cabot Corporation, Cab-O-Sil Division is located at 700 East U.S. Highway 36 in Tuscola, Douglas County. The source produces fumed metal oxides by the flame hydrolysis of a blend of chlorosilanes, silicon tetrachloride, methyl trichlorosilane, tricholorsilane, and aluminum trichloride. HCl gas is a by-product of the reaction and it is absorbed into water and sold as hydrochloric acid or disposed of. The source also operates several other related operations where the fumed metal oxides are treated to produce specific products. Also included are several research facilities on-site for the development of both treated and untreated products.

II. EMISSION UNITS

Significant emission units at this source are as follows:

Emission Unit	Description	Emission Control Equipment	Date
“A” Unit	Includes Burners, Methane Injection, Heat Exchanger, Product Separation Filter and Product Material Handling.	Bag Filter on Material Handling	A
“B” Unit	Includes Burners, Methane Injection, Heat Exchanger, Product Separation Filter and Product Material Handling.	Bag Filter on Material Handling	A
Pilot Process Plant	Includes Burners, Methane Injection, Heat Exchanger, and Product Separator	None	A
Process Development Laboratory (PDL)	Includes Burners, Heat Exchanger, and Product Separator	None	A
“AB” HCl Recovery Unit (from “A”, “B”, Pilot Plant and PDL)	Scrubber/Absorbers Temporary and Long Term Storage	None	A
“C” Unit	Includes Burners, Methane Injection, Heat Exchanger, and Product Separator	Bag Filter on Material Handling	A
“D” Unit	Includes Burners, Methane Injection, Heat Exchanger, Product Separation Filter, and Product Material Handling	Bag Filter on Material Handling	A

Emission Unit	Description	Emission Control Equipment	Date
“E” Unit	Includes Burners, Methane Injection, Heat Exchanger, Fluid Bed Reactor, Product Separator, And Filter and Product Material Handling	Wet Scrubber on Fluid Bed Reactor and Bag Filter on Material Handling	A
“DE” HCl Recovery Unit (from “C”, “D” and “E” Units)	Scrubber/Absorbers Temporary Storage	None	A
TS-XXX*	Holding Tanks Reactors and Mills and Other Miscellaneous Equipment Depending Upon Process	Bagfilters	1987 1992 1996
AMDC-2	Mixing Tank, Reactor and Dryer, and Miscellaneous Unvented Equipment	Two Condensers (A and B)	1998
TDC	Several Lines Including FDP Process, FRS Process, and Jet Mill Process	Thermal Oxidizer, Condenser, Scrubber, and Baghouses as Needed	1999
Tanks 0044 and 0045	250,000 Gallon Fixed Roof Storage Tanks	K-14 Scrubber	1974
Loadout	Railcar and Tank Truck HCl Loading	K-15 Scrubber	1974
Jet Mill	Classifier/Mill and Cyclone	Baghouse BF-1	2000
Jet Mill	Three Storage Tanks (1, 2, 3)	Baghouses BF-2, 3 and 4	2000
Bag Slitter	Bag Slitter, Hopper Cyclones, Tanks	Baghouse	1993
D Unit Bulk Loading	Railcar and Truck Loading of Fumed Metal Oxides	Baghouse	A

A Units were originally constructed prior to 1970, but a 1992 construction permit and sequenced installation classifies the units as new or modified rather than existing.

* Includes “F”, “G” and “H” Units.

III. EMISSIONS

This source is required to have a CAAPP permit since it is a major source of emissions.

For purposes of fees, the source is allowed the following emissions:

Permitted Emissions of Regulated Pollutants

Pollutant	Tons/Year
Volatile Organic Material (VOM)	42.01
Sulfur Dioxide (SO_2)	0.07
Particulate Matter (PM)	64.94
Nitrogen Oxides (NO_x)	0.0
HAP, not included in VOM or PM	232.62[a]
TOTAL	339.64

[a] A small fraction of the total HCl (a HAP) is emitted as an aerosol which is subject to PM emitting rules (See Condition 7.4.3), but greater than 99% of HCl is emitted as a vapor and the entire amount is listed here instead of PM.

This permit is a combined Title I/CAAPP permit that may contain terms and conditions which address the applicability, and compliance if determined applicable, of Title I of the Clean Air Act and regulations promulgated thereunder, including 40 CFR 52.21 - federal Prevention of Significant Deterioration (PSD) and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Any such terms and conditions are identified within the permit by T1, T1R, or T1N. The source has requested that the Illinois EPA establish or revise such conditions in a Title I permit, consistent with the information provided in the CAAPP application. Any conditions established in a construction permit pursuant to Title I and not revised or deleted in this permit, remain in effect pursuant to Title I provisions until such time that the Illinois EPA revises or deletes them.

IV. APPLICABLE EMISSION STANDARDS

All emission sources in Illinois must comply with the Illinois Pollution Control Board's emission standards. The Board's emission standards represent the basic requirements for sources in Illinois.

All emission sources in Illinois must comply with the federal New Source Performance Standards (NSPS). The Illinois EPA is administering NSPS in Illinois on behalf of the United States EPA under a delegation agreement.

All emission sources in Illinois must comply with the federal National Emission Standards for Hazardous Air Pollutants (NESHAP). The Illinois EPA is administering NESHAP in Illinois on behalf of the United States EPA under a delegation agreement.

V. PROPOSED PERMIT

CAAPP

A CAAPP permit contains all conditions that apply to a source and a listing of the applicable state and federal air pollution control

regulations that are the origin of the conditions. The permit also contains emission limits and appropriate compliance procedures. The appropriate compliance procedures may include inspections, work practices, monitoring, record keeping, and reporting to show compliance with these requirements. The Permittee must carry out these procedures on an on-going basis.

Title I

A combined Title I/CAAPP permit contains terms and conditions established by the Illinois EPA pursuant to authority found in Title I provisions, e.g., 40 CFR 52.21 - federal Prevention of Significant Deterioration (PSD) and 35 IAC Part 203 - Major Stationary Sources Construction and Modification. Notwithstanding the expiration date on the first page of the permit, the Title I conditions remain in effect pursuant to Title I provisions until the Illinois EPA deletes or revises them in accordance with Title I procedures.

VI. REQUEST FOR COMMENTS

It is the Illinois EPA's preliminary determination that this source's permit application meets the standards for issuance of a CAAPP permit. The Illinois EPA is therefore proposing to issue a CAAPP permit, subject to the conditions proposed in the draft permit.

Comments are requested on this proposed action by the Illinois EPA and the proposed conditions on the draft permit. If substantial public interest is shown in this matter, the Illinois EPA will consider holding a public hearing in accordance with 35 Ill. Adm. Code Part 164.

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