STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

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Tate & Lyle Ingredients Americas, Inc
Aroostook County
Houlton, Maine
A-64-71-K-R/A (SM)

Departmental
Findings of Fact and Order
Air Emission License

After review of the air emissions license application, staff investigation reports and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 M.R.S.A., Section 344 and Section 590, the Department finds the following facts:

I. REGISTRATION

A. Introduction

Tate & Lyle Ingredients Americas, Inc (Tate & Lyle) of Houlton, Maine has applied to renew and amend their Air Emission License, permitting the operation of emission sources associated with their starch manufacturing facility. The amendment will address changes to the propylene oxide transfer system.

B. Emission Equipment

Tate & Lyle is authorized to operate the following air emission units:

Fuel Burning Equipment

Equipment	Mfg. Date	Maximum Capacity (MMBtu/hr)	Fuel Type, %Sulfur	Max Firing Rate (gal/hr)	Control Equipment	Stack #
Boiler #2	1967	22.5	#6 oil, 2.0% Waste oil, 0.7% Propane	154	None	1
Boiler #3	1978	29	#6 oil, 2.0% Waste oil, 0.7% Propane	204	None	1

Tate & Lyle operates several fuel burning units that are utilized for space heating. Since these units have heat input capacities less than 1.0 MMBtu/hr, they are classified as insignificant activities and are mentioned for inventory purposes only.

Electrical Generation Equipment

Equipment	Power Output	Firing Rate	Poll. Control	Stack #
Generator #1	60 kW	4.3 gal/hr	none	G

Process Equipment

Unit #	Unit #, Equipment, Description	Production Rate	Pollution Control, Efficiency	Stack #
3	Pneumatic Conveying, (#1, #2, #3, #4 Starch Drum Dryer)	3200 lb/hr starch	Baghouse	2
4	Pneumatic Conveying, (2nd Drums and Drum Grinder)	2000 lb/hr starch	Baghouse	3
5	Pneumatic Conveying, (Drum Grinder)	1600 lb/hr starch	Baghouse	4
6	Pneumatic Conveying, (Drum Grinder)	1600 lb/hr starch	Baghouse	5
7	Pneumatic Conveying, (Flash Dryer to Packer)	3000 lb/hr starch	Baghouse	6
8	Flash Dryer Air Transport	3000 lb/hr starch	Cyclone	7
9	Flash Dryer Process Aspiration	3000 lb/hr starch	Baghouse	8
10	Starch bag dump/ Railcar Unloading Dust Removal	300 lb/hr starch	Cyclone/ wet scrubber	9
11	Starch bag Dump/ Railcar Unloading Dust Removal	300 lb/hr starch	Cyclone/ wet scrubber	10
12	Pneumatic Conveying, Dextrin Blender to Packer	4000 lb/hr starch-dextrin	Baghouse	11
13	Dextrin Fluidizing Air Separation	2000 lb/hr starch-dextrin	Baghouse	12
14	Dextrin Packout Bulk Rail Car	4000 lb/hr dextrin/ starch	Fabric Filter	13
15	Bag Blow off	Out of service	Out of service	14
16 17 18 19 20	Reactor A Reactor B Reactor C Reactor D Reactor E	800 propylated starch batches per 12 months	none	15 16 17 18 19
21	Starch Modification	800 propylated starch batches per 12 months	none	fugitive
22	Tapioca Storage Bin	60,000 lb/hr tapioca starch	Baghouse	20

Storage Tanks

Tank	Capacity (gallons)	Vapor Pressure (psia @ 68°F)	Date installed
Propylene Oxide	20,725	8.55	1992
#6 Fuel Oil (2 identical tanks)	12,000 gal (each)	<0.1	1989
Acetic Anhydride	900	0.08	unknown
Used Oil	275	<0.1	1992
Diesel Fuel	275	<0.01	unknown
#2 Fuel Oil	275 (each)	<0.01	1985 and 1994

C. Application Classification

The application for Tate & Lyle does not include the licensing of increased emissions, however, does include a request for changes to licensed units and/or to modify equipment. Therefore, the license is considered to be a renewal of current licensed emission units along with an amendment. The amendment will not increase emissions from the facility, neither actual nor licensed allowed. With the fuel limit on the boilers and process emission limits, the facility is licensed below the major source thresholds and is considered a synthetic minor.

II. BEST PRACTICAL TREATMENT (BPT)

A. Introduction

In order to receive a license the applicant must control emissions from each unit to a level considered by the Department to represent best practical treatment (BPT), as defined in 06-096 CMR 100 of the Air Regulations. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications requires a demonstration that emissions are receiving Best Available Control Technology (BACT), as defined in Definitions Regulation, 06-096 CMR 100 (last amended December 24, 2005). BACT is a top-down approach to selecting air emission controls considering economic, environmental and energy impacts.

B. Amendment Description

Tate & Lyle has requested to remove the applicability of 40 CFR Part 60 Subpart Kb (New Source Performance Standards for Volatile Organic Liquid Storage Vessels) pertaining to its Propylene Oxide storage tank. Currently Condition (20) of Air Emissions License, A-64-71-G-R, states this storage vessel is subject to Subpart Kb. The 20,725 gallon propylene oxide storage tank was installed in 1992 and is therefore over the applicability threshold of 75 cubic meters (19,813 gallons) installed/constructed after 1984. However according to 40 CFR 60.110b(d)(2), Subpart Kb does not apply to storage vessels designed to operate in excess of 204.9 kPa and to storage vessels that do not vent emissions to the atmosphere. Tate & Lyle's propylene oxide storage tank is designed to operate in excess of 204.9 kPa, the pressure relief vents for the tank is set at 30 psi (206.8 kPa).

Also, after some procedural changes to the transfer operations that occurred in early 2009, there will be no emissions to the atmosphere from the tank. Previously, the facility had to increase the pressure in the tank to facilitate the unloading process, which subsequently required the facility to reduce excess pressure (primarily nitrogen) in the tank to make the transfer from the propylene storage tank to the starch modification process. Tate and Lyle recently modified their transfer system procedures to no longer need to release excess pressures from the storage tank.

Therefore, the propylene oxide storage tank is not subject to Subpart Kb, per Department and EPA concurrence, and this license renewal will reflect this.

C. Existing Emission Units

BPT for existing emissions equipment means that method which controls or reduces emissions to the lowest possible level considering:

- the existing state of technology;
- the effectiveness of available alternatives for reducing emissions from the source being considered; and
- the economic feasibility for the type of establishment involved.

Boilers #2 and #3

Boiler #2 is a 1967 Keeler Fire-tube boiler with a design capacity of 22.5 MMBtu/hr. Boiler #3 is a 1978 Johnson Water-tube boiler (installed at the facility in 1985) with a design capacity of 29 MMBtu/hr.

Boilers #2 and #3 are licensed to fire #6 fuel oil with a sulfur content not to exceed 2.0% and are also licensed to fire specification waste oil with a sulfur content not to exceed 0.7% by weight. During startup Boilers #2 and #3 may use small quantities of propane.

Boilers #2 and #3 are not subject to the New Source Performance Standards (NSPS) Subpart Dc, which is applicable to boilers with a heat input of 10 MMBtu/hr or greater and manufactured after June 9, 1989.

BPT for Boilers #2 and #3 is the following:

1. The use of #6 fuel with a sulfur content not to exceed 2.0% by weight, or waste oil with a sulfur content not to exceed 0.7% by weight, or propane.
2. SO_2 emissions limited to 99.9 tons/year.
3. NO_x emission limits are based on data for boilers of similar size and age and firing #6 fuel oil.
4. CO and VOC emission limits are based on AP-42 data dated 9/98 for commercial/industrial boilers.
5. MEDEP 06-096 CMR 103 regulates PM emission limits for fuel burning equipment greater than 3 MMBtu/hr. BPT particulate emission limits established for the boilers is as at least stringent, therefore, 06-096 CMR 103 is met by compliance with BPT. PM_{10} emission limits are based on PM limits.
6. Visible emissions from Boilers #1 and #2 (combined stack #1) shall not exceed 30% opacity recorded as 6-minute block averages, except for no more than two 6-minute block averages in a 3-hour period.

Diesel Generator

Tate & Lyle operates one generator for use in back-up situations. The generator is rated at 4.3 gallons/hour (0.6 MMBtu/hr). Back-up generators are only to be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. Back-up generators are not to be used for prime power when reliable offsite power is available.

A summary of the BPT analysis for the back-up generator #1 is the following:

1. The back-up generator shall fire only diesel fuel with a maximum sulfur content not to exceed 0.05% by weight.

2. The back-up generator shall be limited to 500 hr/yr of operation based on a 12 month rolling total. Compliance shall be demonstrated by a written log of all generator operating hours.
3. 06-096 CMR 106 regulates fuel sulfur content, however in this case a BPT analysis for SO_2 determined a more stringent limit of 0.05% was appropriate and shall be used.
4. Fuel Burning Equipment Particulate Emission Standard, BPT will require this unit to meet a PM limit of 0.20 lb/MMBtu. The PM_{10} limits are derived from the PM limits.
5. NO_x, CO, and VOC emission limits are based upon AP-42 data dated 10/96.
6. Visible emissions from the back-up generator shall not exceed 30% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period.

Process Emissions - VOC and HAP

1. Reactors A, B, C, D, & E and Starch Modifications

Propylene Oxide (CAS # 75-56-9)
Tate & Lyle modifies starches for food and industrial applications. Modified starches manufactured at the facility include those that are propylated through the use of propylene oxide (PO). PO is a listed Hazardous Air Pollutant (HAP) and a VOC. Starch and propylene oxide are mixed and allowed to react for several hours prior to stopping the reaction and scavenging unreacted PO through pH adjustment and actively venting reactor headspace vapors prior to pumping the product out of the reactors for drying.

PO emissions are limited to 9.9 tons per year. Compliance with the PO ton per year limit will be demonstrated through record keeping. PO usage is obtained through monthly reconciliation of bulk storage tank inventory and monthly purchases. Monthly production records of all starch products are maintained including products from the propylated batches. Propylated batches are neutralized prior to venting to minimize the amount of unreacted PO remaining in the propylated starch slurry. Tate & Lyle performed in-house emission testing to develop an emission factor of 24.5 lb PO lost per batch of propylated starch processed. These emission factors were approved by the Department for reactor (9 lb/batch) and fugitive emissions (15.5 lbs/batch) on a batch basis (total 24.5 lbs of propylene oxide per propylated starch batch).

2007 Annual Emissions = (199 batches)(9 lbs/batch) = 1791 lbs from Reactors
2007 Annual Emissions = (199 batches)(15.5 lbs/batch) = 3085 lbs Fugitive Emissions
2007 Total Annual Propylene Oxide Emissions = 4876 pounds

Acetic Anhydride (CAS # 108-24-7)
Acetic anhydride is used as a starch slurry reactant to produce acetylated starch. Reaction efficiency is 50%; however, the remaining acetic anhydride reacts with water to form acetic acid. Less than 1 percent of acetic acid used would be lost to atmosphere as VOC. Neither acetic anhydride or acetic acid are HAPs. Estimated annual 2007 emissions were calculated at 46 pounds.

Hydrogen Chloride (CAS # 7647-01-0)
Anhydrous hydrogen chloride is stored in a pressurized cylinder and is used in a dry starch reaction system to produce dextrins. Starch reaction efficiency is estimated at 90 percent; therefore, 10 percent of hydrogen chloride used could be lost to atmosphere. However, no hydrogen chloride has been detected from the exhaust of the dextrin fluidizer in tests performed at the facility. Estimated annual 2007 emission were calculated at 866 pounds.

Hydrochloric Acid (CAS #7647-01-0)
Muriatic Acid (32 weight percent hydrochloric acid) is stored in a 275 gallon tank and is used in starch slurry modification reactions for pH adjustment. Based on EPA's look-up table in "Estimating Toxic Release Inventory Air Emissions from Chemical Distribution Facilities", the estimated hydrochloric acid emission rate for a storage tank less then 5000 gallons is 17 pounds.

2. Parts Washer and Printing Operations

Tate & Lyle operates two parts washers from which small quantities of VOCs are emitted. The total quantity of VOCs emitted from the parts washer is estimated to be less than 1 ton/year, therefore the parts washer is considered an insignificant activity as defined in MEDEP 06-096 CMR 115, Appendix B (B)(1). Although the parts washers are considered insignificant based on the amount of VOCs emitted, the degreasers are subject to the operational and recordkeeping standards found in MEDEP 06-096 CMR 130.

Small amounts of VOC containing ink are used to print the finished starch product bags. The printing process emits less than 1 ton/year of VOC, therefore the printing operation is considered an insignificant activity as defined in MEDEP 06-096 CMR 115, Appendix B (B)(1). Also, the printing operation emits less than 3 tons per year and therefore 06-096 CMR 161 is not applicable.

Process Emissions - Particulate Matter (PM)

Tate & Lyle operates general process equipment, which emits particulate matter. BPT for particulate matter emissions is met by controlling the process sources with baghouses, cyclones, and wet scrubbers.

BPT for PM emissions from the process sources is the following:

1. PM emissions from #3 - #7 and #12 Pneumatic Conveying, #9 Flash Dryer Process Aspiration, and #13 Dextrin Fluidizing Air Separation shall be controlled by venting emissions through baghouses.
2. PM emissions from #14, Dextrin Packout Bulk Rail Car shall be controlled by venting emissions through a fabric filter.
3. PM emissions from #8 Flash Dryer Air Transport shall be controlled by venting emissions to a cyclone.
4. PM emissions from #10 and #11 Starch bag dump/ Railcar Unloading Dust Removal shall be controlled by venting emissions to a cyclone and wet scrubber.
5. Visible emissions from each baghouse shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one 6-minute block average in a 1-hour period. Tate & Lyle shall take corrective action if visible emissions from the baghouses exceed 5% opacity.
6. Visible emissions from each fabric filter, cyclone, and wet scrubber shall not exceed 20% opacity on a 6-minute block average basis, except for no more than one 6-minute block average in a 1-hour period.

Tapioca Storage Bin and Truck Unloading System

The Tapioca Storage Bin and Truck Unloading System was addressed through Air Emission License Amendment, A-64-71-I-M, issued June 5, 2006. This system allowed the pneumatic transfer of tapioca from a bulk truck to the storage bin. The system is designed so that 60,000 lb/hr of tapioca (on a dry weight basis) can be transferred from truck to storage bin. The tapioca is then transferred to the existing reslurry tanks. The Tapioca Storage Bin is equipped with a baghouse which was determined as BACT from Amendment A-64-71-I-M and now represents BPT for the control of particulate matter emissions in this air license renewal. The baghouse exhausts to a 60-foot tall stack.

Using a grain loading rate of 0.01 gr/scf and assuming continuous operation, the Tapioca Storage Bin and Truck Unloading System has the potential to emit 0.18 lb/hr of PM and 0.81 tons/year. The baghouse shall meet the opacity requirements of 06-096 CMR 101.

Storage Tanks

Tate & Lyle has storage tanks for Propylene Oxide, #6 Fuel Oil (2 tanks), Acetic Anhydride, Used Oil, Diesel Fuel and #2 Fuel Oil. The Propylene Oxide tank is exempt from Subpart Kb as mentioned previously in Section II B of this license. Due to the changes to New Source Performance Standards (NSPS) 40 CFR 60, Subpart Kb applicability promulgated October 15, 2003, the two #6 fuel oil storage tanks (12,000 gallons each) are less than 75 cubic meters (19,813) and therefore exempt from Subpart Kb.

D. Annual Emission Restrictions

Annual Emissions are calculated based on the firing #6 fuel oil in Boilers #2 and #3, 500 hours of operation of the Emergency Generator, and 9.9 tons/year of Propylene Oxide emissions. Tate & Lyle accepts a facility wide sulfur dioxide limit of 99.9 tons/year, on a 12-month rolling total. Compliance with this limit shall be documented through fuel use and sulfur percentage records and calculation of sulfur dioxide emissions on a monthly and twelve-month rolling total per Condition (19) of this license.

Tate & Lyle shall be restricted to the following annual emissions, based on a 12-month rolling total:

Total Licensed Annual Emission for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM_{10}	SO_2	NO_x	CO	VOC	HAP (Propylene Oxide)
Boilers #2 & #3	18.0	18.0	--[1]	44.4	4.0	0.3	--
Generator #1	0.1	0.1	--[1]	0.7	0.2	0.1	--
A, B, C, D & E Reactors and Starch Modification	--	--	--	--	--	9.9	9.9
Tapioca Storage Bin	0.8	0.8	--	--	--	--	--
Total TPY	**18.9**	**18.9**	**99.9[1]**	**45.1**	**4.2**	**10.3**	**9.9**

[1]Unit SO_2 ton/year emissions vary due to variable sulfur contents of fuels being fired. Total emissions are limited to 99.9 tons/year.

III. AMBIENT AIR QUALITY ANALYSIS

There have been no modifications to the existing licensed facility equipment. Therefore, the existing ambient air quality analysis performed by Tate & Lyle for Air Emission License A-64-72-K-R/A, which demonstrated compliance with Maine Ambient Air Quality Standards and Class II increments, is sufficient for this renewal License.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that the emissions from this source:

- will receive Best Practical Treatment,
- will not violate applicable emission standards,
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants Air Emission License A-64-71-K-R/A subject to the following conditions.

Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

STANDARD CONDITIONS

(1) Employees and authorized representatives of the Department shall be allowed access to the licensee's premises during business hours, or any time during which any emissions units are in operation, and at such other times as the Department deems necessary for the purpose of performing tests, collecting samples, conducting inspections, or examining and copying records relating to emissions (38 M.R.S.A. §347-C).

(2) The licensee shall acquire a new or amended air emission license prior to commencing construction of a modification, unless specifically provided for in Chapter 115. [06-096 CMR 115]

(3) Approval to construct shall become invalid if the source has not commenced construction within eighteen (18) months after receipt of such approval or if construction is discontinued for a period of eighteen (18) months or more. The Department may extend this time period upon a satisfactory showing that an

extension is justified, but may condition such extension upon a review of either the control technology analysis or the ambient air quality standards analysis, or both. [06-096 CMR 115]

(4) The licensee shall establish and maintain a continuing program of best management practices for suppression of fugitive particulate matter during any period of construction, reconstruction, or operation which may result in fugitive dust, and shall submit a description of the program to the Department upon request. [06-096 CMR 115]

(5) The licensee shall pay the annual air emission license fee to the Department, calculated pursuant to Title 38 M.R.S.A. §353. [06-096 CMR 115]

(6) The license does not convey any property rights of any sort, or any exclusive privilege. [06-096 CMR 115]

(7) The licensee shall maintain and operate all emission units and air pollution systems required by the air emission license in a manner consistent with good air pollution control practice for minimizing emissions. [06-096 CMR 115]

(8) The licensee shall maintain sufficient records to accurately document compliance with emission standards and license conditions and shall maintain such records for a minimum of six (6) years. The records shall be submitted to the Department upon written request. [06-096 CMR 115]

(9) The licensee shall comply with all terms and conditions of the air emission license. The filing of an appeal by the licensee, the notification of planned changes or anticipated noncompliance by the licensee, or the filing of an application by the licensee for a renewal of a license or amendment shall not stay any condition of the license. [06-096 CMR 115]

(10) The licensee may not use as a defense in an enforcement action that the disruption, cessation, or reduction of licensed operations would have been necessary in order to maintain compliance with the conditions of the air emission license. [06-096 CMR 115]

(11) In accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department, the licensee shall:

(i) perform stack testing to demonstrate compliance with the applicable emission standards under circumstances representative of the facility's normal process and operating conditions:

(a) within sixty (60) calendar days of receipt of a notification to test from the Department or EPA, if visible emissions, equipment operating parameters, staff inspection, air monitoring or other cause indicate to the Department that equipment may be operating out of compliance with emission standards or license conditions; or

(b) pursuant to any other requirement of this license to perform stack testing.

(ii) install or make provisions to install test ports that meet the criteria of 40 CFR Part 60, Appendix A, and test platforms, if necessary, and other accommodations necessary to allow emission testing; and

(iii) submit a written report to the Department within thirty (30) days from date of test completion.

[06-096 CMR 115]

(12) If the results of a stack test performed under circumstances representative of the facility's normal process and operating conditions indicate emissions in excess of the applicable standards, then:

(i) within thirty (30) days following receipt of such test results, the licensee shall re-test the non-complying emission source under circumstances representative of the facility's normal process and operating conditions and in accordance with the Department's air emission compliance test protocol and 40 CFR Part 60 or other method approved or required by the Department; and

(ii) the days of violation shall be presumed to include the date of stack test and each and every day of operation thereafter until compliance is demonstrated under normal and representative process and operating conditions, except to the extent that the facility can prove to the satisfaction of the Department that there were intervening days during which no violation occurred or that the violation was not continuing in nature; and

(iii) the licensee may, upon the approval of the Department following the successful demonstration of compliance at alternative load conditions, operate under such alternative load conditions on an interim basis prior to a demonstration of compliance under normal and representative process and operating conditions.

[06-096 CMR 115]

(13) Notwithstanding any other provisions in the State Implementation Plan approved by the EPA or Section 114(a) of the CAA, any credible evidence may be used for the purpose of establishing whether a person has violated or is in violation of any statute, regulation, or Part 70 license requirement. [06-096 CMR 115]

(14) The licensee shall maintain records of malfunctions, failures, downtime, and any other similar change in operation of air pollution control systems or the emissions unit itself that would affect emission and that is not consistent with the terms and

conditions of the air emission license. The licensee shall notify the Department within two (2) days or the next state working day, whichever is later, of such occasions where such changes result in an increase of emissions. The licensee shall report all excess emissions in the units of the applicable emission limitation. [06-096 CMR 115]

(15) Upon written request from the Department, the licensee shall establish and maintain such records, make such reports, install, use and maintain such monitoring equipment, sample such emissions (in accordance with such methods, at such locations, at such intervals, and in such a manner as the Department shall prescribe), and provide other information as the Department may reasonably require to determine the licensee's compliance status. [06-096 CMR 115]

SPECIFIC CONDITIONS

(16) **Boilers #2 and #3**

(i) Boilers #2 and #3 shall fire #6 fuel oil with a maximum sulfur content not to exceed 2.0% by weight, specification waste oil, with a maximum sulfur content not to exceed 0.7% by weight, ASTM D396 compliant #2 oil, or propane. Fuel oil (#6 and specification waste oil) use in the boilers is limited to a quantity on a 12-month rolling total that meets compliance with the SO2 limit per Condition (19). Compliance shall be demonstrated through fuel use records, purchase receipts showing the sulfur content of the fuel, and annual testing of facility generated waste oil. [MEDEP 06-096 CMR 115, BPT]

(ii) Tate & Lyle shall meet the characteristics of "specification waste oil" as found in the Department's Bureau of Air Quality Waste Oil Guidance effective March 11, 1994. The annual test for the sulfur content of the waste oil generated on-site shall consist of a grab sample analysis from the waste oil tank. [MEDEP 06-096 CMR 115, BPT]

(iii) Boilers #2 and #3 shall not exceed the following emission limits:

Boiler #2 and #3 Emission Limits

Equipment		PM	PM_{10}	SO_2	NO_x	CO	VOC
Boiler #2	lb/MMBtu	0.15	--	--	--	--	--
	lb/hour	3.38	3.38	47.3	11.3	0.75	0.05
Boiler #3	lb/MMBtu	0.12	--	--	--	--	--
	lb/hour	3.48	3.48	60.9	14.5	1.0	0.06

Compliance shall be demonstrated on request of the Department through stack testing in accordance with the appropriate method found in 40 CFR Part 60, Appendix A [MEDEP 06-096 CMR 115, BPT]

(iv) Visible emissions from Boilers #1 and #2 (combined stack #1) shall not exceed 30% opacity recorded as 6-minute block averages, except for no more than two 6-minute block averages in a 3-hour period. [MEDEP 06-096 CMR 101]

(17) **Back-up Generator**

A. Tate & Lyle shall limit the back-up diesel generator to 500 hr/yr of operation (based on a 12 month rolling total). An hour meter shall be maintained and operated. [06-096 CMR 115, BPT]
B. The back-up generator shall only be operated for maintenance purposes and for situations arising from sudden and reasonably unforeseeable events beyond the control of the source. The back-up generator shall not be used for prime power when reliable offsite power is available. A log shall be maintained documenting the date, time, and reason for operation.
[06-096 CMR 115, BPT]
C. The back-up generator shall fire diesel fuel with a sulfur limit not to exceed 0.05% by weight. Compliance shall be based on fuel records from the supplier showing the quantity of fuel delivered and the percent sulfur of the fuel.
[06-096 CMR 115, BPT]
D. Emissions shall not exceed the following:

Emission Unit	Pollutant	lb/MMBtu	Origin and Authority
Generator #1	PM	0.20	06-096 CMR 103(2)(B)(1)(a)

E. Emissions shall not exceed the following [06-096 CMR 115, BPT]:

Emission Unit	PM (lb/hr)	PM_{10} (lb/hr)	SO_2 (lb/hr)	NO_x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
Generator #1	0.2	0.2	0.1	2.7	0.6	0.2

F. Visible emissions from Generator #1 shall not exceed 30% opacity on a six (6) minute block average, except for no more than two (2) six (6) minute block averages in a continuous 3-hour period. [06-096 CMR 101]

(18) **Process Sources**

(i) HAP Process Emissions

(a) Tate & Lyle shall not exceed 9.9 tons/year of HAP (as Propylene Oxide), on a 12-month rolling total basis. Compliance with the HAP tons/year limit shall be demonstrated through record keeping on a monthly and 12-month rolling total basis, including the number of propylated starch batches produced in reactors A, B, C, D and E and the use of 24.5 lb Propylene Oxide lost per batch of propylated starch processed. [MEDEP 06-096 CMR 115, BPT]

(b) Monthly Propylene Oxide usage shall be recorded through reconciliation of bulk storage tank inventory and monthly purchases. [MEDEP 06-096 CMR 115]

(c) Tate & Lyle shall keep monthly records of all starch products that are produced, including products that are the product of propylated batches. [MEDEP 06-096 CMR 115, BPT]

(ii) PM Process Emissions

(a) Tate & Lyle shall operate and maintain baghouses for particulate matter control on the following:

- Unit #3, Pneumatic Conveying for #1, #2, #3, #4 Starch Drum Dryer;
- Unit #4, Pneumatic Conveying for 2nd Drums and Drum Grinder;
- Unit #5, Pneumatic Conveying for the Drum Grinder;
- Unit #6, Pneumatic Conveying, for the Drum Grinder;
- Unit #7, Pneumatic Conveying for the Flash Dryer to Packer;
- Unit #9, Flash Dryer Process Aspiration;
- Unit #12, Pneumatic Conveying for the Dextrin Blender to Packer; and,
- Unit #13, Dextrin Fluidizing Air Separation. [MEDEP 06-096 CMR 115, BPT]

(b) Tate & Lyle shall operate and maintain fabric filters for particulate matter control on Unit #14, Dextrin Packout Bulk Rail Car. [MEDEP 06-096 CMR 115, BPT]

(c) Tate & Lyle shall operate and maintain a cyclone for particulate matter control on Unit #8, Flash Dryer Air Transport. [MEDEP 06-096 CMR 115, BPT]

(d) Tate & Lyle shall operate and maintain wet scrubbers and cyclones on the following:

- Unit #10, Starch Bag Dump Railcar Unloading Dust Removal; and,

– Unit #11, Starch Bag Dump Railcar Unloading Dust Removal. [MEDEP 06-096 CMR 115, BPT]

(e) Visible emissions from each baghouse shall not exceed 10% opacity on a 6-minute block average basis, except for no more than one 6-minute block average in a 1-hour period. Tate & Lyle shall take corrective action if visible emissions from the baghouses exceed 5% opacity. [MEDEP 06-096 CMR 101]

(f) Visible emissions from each fabric filter, cyclone, and wet scrubber shall not exceed 20% opacity on a 6-minute block average basis, except for no more than one 6-minute block average in a 1-hour period. [MEDEP 06-096 CMR 101]

(g) Tate & Lyle shall maintain a log detailing all routine and non-routine maintenance on each wet scrubber, cyclone, fabric filter and baghouse. The log shall contain the location, date, nature of failure, and action taken to correct the failure. [MEDEP 06-096 CMR 115, BPT]

(19) **Fuel Use Records**

(i) Tate & Lyle shall maintain records of monthly fuel use for fuel oil (including #6 fuel oil, #2 fuel oil, specification waste oil, and diesel fuel). Monthly records shall include the quantity and type of fuel consumed per month, the percent sulfur content of the fuel by weight, and the heat content of the fuel demonstrated by purchase records from the supplier. [MEDEP 06-096 CMR 115, BPT]

(ii) To document compliance with the facility wide emission limit of 99.9 tons of SO_2 per year on a 12-month rolling total, Tate & Lyle shall calculate and record the 12-month rolling total tons of SO_2 on a monthly basis. Facility SO_2 emissions shall be calculated using the following equation:

$$SO_2 \; tons / year = \frac{[(0.141)(x)(s_D)] + [(0.141)(y)(s_2)] + [(0.158)(z)(s_6)]}{2000}$$

where:

x	=	annual quantity of diesel fuel combusted facility wide (gallons)
s_D	=	average sulfur content by weight of the diesel fuel (percent)
y	=	annual quantity of #2 fuel oil, including specification waste oil, combusted facility wide (gallons)
s_2	=	average sulfur content by weight of #2 fuel oil, including specification waste oil (percent)
z	=	annual quantity of #6 fuel oil combusted facility wide (gallons)
s_6	=	Average sulfur content by weight of #6 oil (percent)

(20) **Parts Washer**

Parts washers at Tate & Lyle are subject to Solvent Cleaners, 06-096 CMR 130 (last amended June 28, 2004).

A. Tate & Lyle shall keep records of the amount of solvent added to each parts washer. [06-096 CMR 115, BPT]

B. The following are exempt from the requirements of 06-096 CMR 130 [06-096 CMR 130]:
   1. Solvent cleaners using less than two liters (68 oz) of cleaning solvent with a vapor pressure of 1.00 mmHg, or less, at 20° C (68° F);
   2. Wipe cleaning; and,
   3. Cold cleaning machines using solvents containing less than or equal to 5% VOC by weight.

C. The following standards apply to cold cleaning machines that are applicable sources under Chapter 130.
   1. Tate & Lyle shall attach a permanent conspicuous label to each unit summarizing the following operational standards [06-096 CMR 130]:
      (i) Waste solvent shall be collected and stored in closed containers.
      (ii) Cleaned parts shall be drained of solvent directly back to the cold cleaning machine by tipping or rotating the part for at least 15 seconds or until dripping ceases, whichever is longer.
      (iii) Flushing of parts shall be performed with a solid solvent spray that is a solid fluid stream (not a fine, atomized or shower type spray) at a pressure that does not exceed 10 psig. Flushing shall be performed only within the freeboard area of the cold cleaning machine.
      (iv) The cold cleaning machine shall not be exposed to drafts greater than 40 meters per minute when the cover is open.
      (v) Sponges, fabric, wood, leather, paper products and other absorbent materials shall not be cleaned in the degreaser.
      (vi) When a pump-agitated solvent bath is used, the agitator shall be operated to produce no observable splashing of the solvent against the tank walls or the parts being cleaned. Air agitated solvent baths may not be used.
      (vii) Spills during solvent transfer shall be cleaned immediately. Sorbent material shall be immediately stored in covered containers.
      (viii) Work area fans shall not blow across the opening of the degreaser unit.
      (ix) The solvent level shall not exceed the fill line.
   2. The remote reservoir cold cleaning machine shall be equipped with a perforated drain with a diameter of not more than six inches. [06-096 CMR 130]

(21) **Fugitive Emissions**
Visible emissions from a fugitive emission source (including stockpiles and roadways) shall not exceed an opacity of 20%, except for no more than five (5) minutes in any 1-hour period. Compliance shall be determined by an aggregate of the individual fifteen (15)-second opacity observations which exceed 20% in any one (1) hour. [06-096 CMR 101]

(22) **General Process Sources**
Visible emissions from any general process source shall not exceed an opacity of 20% on a six (6) minute block average basis, except for no more than one (1) six (6) minute block average in a 1-hour period. [06-096 CMR 101]

(23) **Annual Emission Statement**
In accordance with Emission Statements, 06-096 CMR 137 (last amended November 8, 2008), the licensee shall annually report to the Department the information necessary to accurately update the State's emission inventory by means of:

1) A computer program and accompanying instructions supplied by the Department; or
2) A written emission statement containing the information required in 06-096 CMR 137.

The emission statement must be submitted as specified by the date in 06-096 CMR 137.

(24) Tate & Lyle shall notify the Department within 48 hours and submit a report to the Department on a quarterly basis if a malfunction or breakdown in any component causes a violation of any emission standard (38 M.R.S.A. §605).

DONE AND DATED IN AUGUSTA, MAINE THIS 18th DAY OF August , 2010.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: James P. Brooks for
DAVID P. LITTELL, COMMISSIONER

The term of this license shall be five (5) years from the signature date above.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES
Date of initial receipt of application: December 23, 2008
Date of application acceptance: January 15, 2009
Date filed with the Board of Environmental Protection:

This Order prepared by Ed Cousins, Bureau of Air Quality

FILED
AUG 24 2010
BOARD OF ENVIRONMENTAL PROT.
STATE OF MAINE