



Florida Department of Environmental Protection

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PERMITTEES

LignoTech Florida, LLC
and Rayonier Performance Fibers, LLC
P.O. Box 2002
Fernandina Beach, Florida 32035

Air Permit Nos. 0890004-056-AC and 0890444-002-AC
PSD-FL-438A

Expires: October 18, 2021

Lignosulfonate Plant and Fernandina Beach

Dissolving Sulfite Pulp Plant

Facility ID Nos. 0890444 & 0890004

Design Engineering Changes

Authorized Representatives:

Mr. Mark Homans, LignoTech Florida (LTF), LLC

Mr. C. A. McDonald, Rayonier Performance Fibers (RPF)

PROJECT

This is the final air construction permit, which modifies the original prevention of significant deterioration (PSD) air construction permit for a new 165,344 ton per year (TPY) lignosulfonate products plant to be co-located at the existing Rayonier Dissolving Sulfite Pulp Plant, which is a Pulp Mill categorized under Standard Industrial Classification No. 2611 (Pulp Mills) and NAICS No. 322121 (Pulp and Paper Manufacturing). The new lignosulfonate plant will be categorized under Standard Industrial Classification Code (SIC) No. 2861 (Gum and Wood Chemicals) and North American Industrial Classification System (NAICS) No. 325194 (Cyclic Crude, Intermediate, and Gum and Wood Chemical Manufacturing). The plant will be located in Nassau County at 10 Gum Street in Fernandina Beach, Florida. The UTM coordinates of the new LignoTech plant will be Zone 17, 454.5 km East, and 3,392.1 km North. The UTM coordinates of the existing RPF plant are Zone 17, 454.7 kilometers (km) East, and 3,392.2 km North.

This draft permit is organized into the following sections: Section 1 (General Information); Section 2 (Administrative Requirements); Section 3 (Emissions Unit Specific Conditions); and Section 4 (Appendices). Because of the technical nature of the project, the permit contains numerous acronyms and abbreviations, which are defined in Appendix A of Section 4 of this permit.

STATEMENT OF BASIS

This air pollution construction permit is issued under the provisions of: Chapter 403 of the Florida Statutes (F.S.) and Chapters 62-4, 62-204, 62-210, 62-212, 62-296 and 62-297 of the Florida Administrative Code (F.A.C.). The permittee is authorized to conduct the proposed work in accordance with the conditions of this permit. This project is subject to the general preconstruction review requirements in Rule 62-212.300, F.A.C. and the preconstruction review requirements for major stationary sources in Rule 62-212.400, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Upon issuance of this final permit, any party to this order has the right to seek judicial review of it under Section 120.68 of the Florida Statutes by filing a notice of appeal under Rule 9.110 of the Florida Rules of Appellate Procedure with the clerk of the Department of Environmental Protection in the Office of General Counsel (Mail Station #35, 3900 Commonwealth Boulevard, Tallahassee, Florida, 32399-3000) and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The notice must be filed within 30 days after this order is filed with the clerk of the Department.

Executed in Tallahassee, Florida

For:

Syed Arif, P.E., Program Administrator
Office of Permitting and Compliance
Division of Air Resource Management

FINAL PERMIT

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Construction Permit package was sent by electronic mail, or a link to these documents made available electronically on a publicly accessible server, with received receipt requested before the close of business on the date indicated below to the following persons.

Mr. Paul J. Hendricks, LignoTech Florida, LLC (paul.hendricks@borregaard.com)
Mr. C. A. McDonald, Rayonier Performance Fibers, LLC (ca.mcdonald@rayonieram.com)
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Mr. Rick Rachal, Program Administrator, Northeast District Office (richard.rachal@dep.state.fl.us)
Mr. Stuart Bartlett, Northeast District Office (stuart.bartlett@dep.state.fl.us)
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Ms. Lynn Searce, DEP OPC: (lynn.searce@dep.state.fl.us)

Clerk Stamp

FILING AND ACKNOWLEDGMENT FILED, on this date, pursuant to Section 120.52(7), Florida Statutes, with the designated agency clerk, receipt of which is hereby acknowledged.

Changes to the permit document are shown in ~~strike through~~ format for deletions and in double underline format for additions. For ease of identification, all changes have also been **highlighted in yellow** within the permit document.

SECTION 1. GENERAL INFORMATION

FACILITY DESCRIPTION

The existing Rayonier plant consists of the following emissions units:

Facility ID No. 0890004	
EU No.	Emission Unit Description
-005	Vent Gas Scrubber and Direct Contact Condenser
-006	Sulfite Recovery Boiler, Red liquor Solids, Natural Gas, and Oil Fired Boiler
-010	Biological Effluent Treatment System
-011	Dissolving-Grade Bleaching System
-021	Evaporator Vents Methanol Condenser
-022	No. 6 Power Boiler
-024	Temporary Emergency Generators
-025	Existing RICE: Emergency Generators subject to 40 CFR 63, Subpart ZZZZ
-026	Data Center Emergency Engine
-027	Turbine Generator No. 5 Emergency Engine

Rayonier Performance Fibers is an acid sulfite-based pulp mill using ammonia as the base chemical for the manufacture of dissolving pulp. This plant produces approximately 10 different grades of pulp. The pulp produced at this plant is used in products such as plastics, photographic film, LCD screens, paints, cigarette filters, pharmaceuticals, food production, cosmetics and textiles. The mill is permitted to produce a maximum of 175,000 ADMT of pulp per year, on a 12-month rolling total basis. Additional modifications such as the pulp dryer and pulp machine improvements are necessary to achieve the permitted maximum production rate, which are outlined in Appendix CP of the current Title V Permit No. 0890004-054-AV. Based on the current plan, all necessary improvements to reach permitted capacity are scheduled to be completed by 2021.

The sulfite process utilizes a sulfurous acid and ammonium bisulfite cooking solution to chemically separate the lignin from the cellulose. Pine wood chips and cooking solution are cooked in the six (6) batch digesters. The cooking process requires approximately 6 hours to complete. The unbleached sulfite pulp and spent cooking solution (SSL - spent sulfite liquor) are separated over vacuum washers (red stock washers). The unbleached pulp is then sent into the screening area to remove any knots and tailings (uncooked, woody materials), while the SSL is pumped to the evaporators to concentrate the solids before being burned in the recovery boiler. The collected knots and tailings are pressed for use as fuel in the No. 6 Power Boiler.

The sulfurous acid and ammonium bisulfite cooking solution is prepared in the "Cooking Acid Plant". Two molten sulfur burners are currently used to produce SO₂ which is converted to sulfurous acid (H₂SO₃) in the acid fortification tower. Emissions from the cooking acid plant are sent to a caustic scrubber referred to as the Vent Gas Scrubber (VGS). The digesters, washers, evaporators, SSL tanks, and stock tanks are also vented to the VGS.

The unbleached pulp exiting the screening operation enters the bleach plant. The first stage in the bleaching plant is the Hot Caustic Extraction (HCE) stage. Caustic soda is used to remove hemi-cellulose (small chain cellulose molecules) from the pulp in small pressure vessels called an HCE cells. The mill currently operates eight (8) of these cells. The pulp is then washed after the HCE stage. The spent solution, Hot Caustic Extract, is concentrated in a set of evaporators before being sold to Kraft pulp mills for its sodium content and energy value.

Pulp leaving the HCE stage is further purified in continuous and batch stages using various bleaching chemicals such as peroxide, chlorine dioxide, chlorine, sodium hydroxide, and sodium hypochlorite depending upon the pulp grade specifications. Following these bleaching stages, the pulp passes through centrifugal dirt cleaners before being sent to the pulp machine. The pulp machine forms the sheet by draining water from the pulp slurry (containing 99% water) over a moving wire to a consistency of 50% water. The remainder of the water is removed by passing the pulp sheet over pressing and drying cylinders heated internally with steam. The pulp sheet, which contains approximately 7% moisture, is then wound onto a "jumbo" roll before being transported to

SECTION 1. GENERAL INFORMATION

the finishing room where the pulp sheet is cut into smaller rolls or sheets based on customer specifications. No coatings are used on any of the pulp grades produced by the mill.

The digestion process, the HCE stage, and the pulp machine processes are significant users of steam for heating. Steam used at the plant is produced in the No. 6 Power Boiler and the Sulfite Recovery Boiler. The No. 6 Power Boiler is authorized to burn biomass, No. 6 fuel oil, No. 2 fuel oil, on-specification used oil, tires, and mill effluent treatment system solids. The Sulfite Recovery Boiler is currently authorized to burn Red Liquor Solids (RLS) generated from the digestion and evaporation processes, natural gas, No. 6 and No. 2 fuel oils, and on-specification used oil. The steam produced is also used to generate nearly 100 percent of the mill's electricity needs. In addition, the recovery boiler provides steam for the evaporators and its emissions are scrubbed for sulfur dioxide recovery using an ammonia solution. The ammonium bisulfite produced in the scrubber is used for cooking acid make-up.

PROPOSED PROJECT

RPF and LTF submitted a joint PSD air construction permit modification application on July 20, 2017 and subsequent additional information on August 31, 2017 for several detailed engineering changes to the original PSD permit issued on October 18, 2016, to include the following:

- Addition of a new sulfur dioxide (SO₂) gas cooling train with a direct-contact spray quench vessel to be implemented in Phase 1 and a new cross-flow cooling tower to cool the gases from the new sulfur burner at the RPF plant. It is also clarified that RPF is authorized to install a new air compressor, air heater, combustion air fan, and an auxiliary propane burner for startup, to support the third sulfur burner;
- Addition of a larger diameter ammonia tower with new ancillary pumps and an SO₂ gas fan to the RPF acid fortification process during Phase 2 of the project to increase recovery of sulfur dioxide from the new sulfur burner due to decreased ammonium bisulfite returned from the recovery boiler scrubber. The new ammonia tower will be approximately 69 feet tall and 10 feet in diameter with two packed beds and a chevron mist eliminator;
- Addition of seven new material handling baghouses to the lignosulfonate products plant. Three small bin vent filters will be added to the surge hoppers located beneath the product storage silos, two bin vent filters will be added to the bag dump stations, and two dust collectors will be added to the product packaging lines. These will be in addition to the six-existing permitted baghouse dust collectors/bin vent filters, for a total of thirteen baghouses. All baghouses will be designed to meet the BACT outlet grain loading standard of 0.002 grains per dry standard cubic foot;
- Addition of an alternative to the daily baghouse monitoring requirements using bag leak detectors in lieu of daily instantaneous visible emissions checks;
- Modification of the cooling tower design at the lignosulfonate products plant from an induced-draft design to a cross-flow design;
- Addition of a 20 scfm process vent after the pressure reactor condenser at the lignosulfonate products plant, which results in a slight increase in potential volatile organic compounds (VOC) emissions; and,
- Updates to the air dispersion modeling demonstration for near-field particulate matter (PM) with a mean diameter of 10 micrometers or less (PM₁₀) and PM with a mean diameter of 2.5 micrometers or less (PM_{2.5}) ambient concentrations, to demonstrate that the new and modified emissions units will not cause or contribute to a violation of the National Ambient Air Quality Standards (NAAQS) or PSD increments.

This permit authorizes slight increases in permitted PM₁₀/PM_{2.5} emissions (0.35 tpy) due to the addition of the new material handling baghouses and slight adjustments to the air flow rates for the originally permitted baghouses, and the addition of the SO₂ train cooling tower. In addition, a slight increase in VOC emissions (0.11 tpy) results from the pressure reactor condenser vent. This permit does not authorize any increase in sulfur dioxide (SO₂) emissions from the combined facility. The updated modeling demonstration is available in the Technical Evaluation and Preliminary Determination document. The revised modeling demonstration shows compliance with the NAAQS and the annual and 24-hour PSD increments for PM₁₀/PM_{2.5}.

SECTION 1. GENERAL INFORMATION

The new lignosulfonate products manufacturing plant will process up to 165,344 tons per year (TPY) red liquor on an oven dry basis [red liquor solids (RLS)] from the RPF plant to manufacture wet and dry lignosulfonate products. The products manufactured at the new plant will include ammonium lignosulfonate, ion exchanged sodium lignosulfonate, and further processed ion exchanged sodium lignosulfonate. Lignosulfonate products have a wide variety of uses in other industries such as an additive to concrete to reduce water requirements, an additive to bricks and roof tiles for improved strength, as a soil conditioner, and as an animal feed binder. The wet products will be shipped to customers by truck or railcar, while the dry products will be packaged and then shipped to customers. The Lignin Plant will be constructed in two phases. The first phase will have an anticipated production capacity of 110,230 tons per year of product on a dry solids per year basis (TDS/yr), equivalent to 100,000 metric tons dry solids per year (MTDS/yr). The second phase will increase production capacity to 165,344 TDS/yr (150,000 MTDS/yr). The proposed plant will operate continuously (8,760 hours per year).

Existing emissions units at the Rayonier plant are being modified to accommodate the operation of this new plant. Rayonier will be adding a 3rd sulfur burner rated at 38.6 tons per day (TPD) to its cooking acid plant and is in the process of adding 450.6 million British thermal units per hour (MMBtu/hr) of natural gas capability to the recovery boiler. Both of these changes were permitted under air construction Permit No. 0890444-001-AC (PSD-FL-438) and 0890004-050-AC issued on October 18, 2016. The permitted maximum heat input rate to the recovery boiler of 653.1 MMBtu/hr did not change as a result of the original permit project.

This project will add and/or modify the following emissions units.

Facility ID No. 0890004 – Rayonier Performance Fibers	
EU No.	Emission Unit Description
-005	Vent Gas Scrubber and Direct Contact Condenser (modify)
-028	Cross-flow Splash-Type Cooling Tower Set (new)

Facility ID No. 0890444 – LignoTech Florida, LLC (modify)	
EU No.	Description
-003	Three (3) Product Storage Silos with Surge Hoppers
-004	Packaging Operation with Three (3) Packaging Bins, Two (2) Packaging Lines, and Two (2) Bag Dump Stations
-005	Induced Draft Cross-flow Film-Type Cooling Tower Set with High-Efficiency Mist Eliminators

FACILITY REGULATORY CLASSIFICATION

- The RPF plant is a major source of hazardous air pollutants (HAP). The LTF plant will be located at a major source of HAP.
- The facility does not operate units subject to the acid rain provisions of the Clean Air Act (CAA).
- The combined facility is a Title V major source of air pollution in accordance with Chapter 62-213, F.A.C., however, each plant will apply for its own Title V permit.
- The combined facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.

SECTION 2. ADMINISTRATIVE REQUIREMENTS

1. Permitting Authority: The Permitting Authority for this project is the Office of Permitting and Compliance in the Division of Air Resource Management of the Department of Environmental Protection (Department). The mailing address for the Office of Permitting and Compliance is 2600 Blair Stone Road, MS #5505, Tallahassee, Florida 32399-2400. All documents related to applications for permits to operate an emissions unit shall be submitted to the Northeast District Office at: 8800 Baymeadows Way West, Suite 100, Jacksonville, Florida 32256.
2. Compliance Authority: All documents related to compliance activities such as reports, tests, and notifications shall be submitted to the Northeast District Office at: 8800 Baymeadows Way West, Suite 100, Jacksonville, Florida 32256.
3. Appendices: The following Appendices are attached as a part of this permit: Appendix A (Citation Formats and Glossary of Common Terms); Appendix B (General Conditions); Appendix C (Common Conditions); Appendix D (Common Testing Requirements); and Appendix E (Final BACT Determinations).
4. Applicable Regulations, Forms and Application Procedures: Unless otherwise specified in this permit, the construction and operation of the subject emissions units shall be in accordance with the capacities and specifications stated in the application. The facility is subject to all applicable provisions of: Chapter 403, F.S.; and Chapters 62-4, 62-204, 62-210, 62-212, 62-213, 62-296 and 62-297, F.A.C. Issuance of this permit does not relieve the permittee from compliance with any applicable federal, state, or local permitting or regulations.
5. New or Additional Conditions: For good cause shown and after notice and an administrative hearing, if requested, the Department may require the permittee to conform to new or additional conditions. The Department shall allow the permittee a reasonable time to conform to the new or additional conditions, and on application of the permittee, the Department may grant additional time. [Rule 62-4.080, F.A.C.]
6. Modifications: No emissions unit shall be constructed or modified without obtaining an air construction permit from the Department. Such permit shall be obtained prior to beginning construction or modification. [Rules 62-210.300(1) and 62-212.300(1)(a), F.A.C.]
7. Construction and Expiration. The expiration date shown on the first page of this permit provides time to complete the physical construction activities authorized by this permit, complete any necessary compliance testing, and obtain an operation permit. Notwithstanding this expiration date, all specific emissions limitations and operating requirements established by this permit shall remain in effect until the facility or emissions unit is permanently shut down. For good cause, the permittee may request that that a permit be extended. Pursuant to Rule 62-4.080(3), F.A.C., such a request shall be submitted to the Permitting Authority in writing before the permit expires. [Rules 62-4.070(3) & (4), 62-4.080 & 62-210.300(1), F.A.C.]
8. Source Obligation:
 - a. Authorization to construct shall expire if construction is not commenced within 18 months after receipt of the permit, if construction is discontinued for a period of 18 months or more, or if construction is not completed within a reasonable time. This provision does not apply to the time period between construction of the approved phases of a phased construction project except that each phase must commence construction within 18 months of the commencement date established by the Department in the permit.
 - b. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation) solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.
 - c. At such time that a particular source or modification becomes a major stationary source or major modification (as these terms were defined at the time the source obtained the enforceable limitation)

SECTION 2. ADMINISTRATIVE REQUIREMENTS

solely by exceeding its projected actual emissions, then the requirements of subsections 62-212.400(4) through (12), F.A.C., shall apply to the source or modification as though construction had not yet commenced on the source or modification.

[Rule 62-212.400(12), F.A.C.]

9. Title V Permit: This permit authorizes specific modifications and new construction on the affected emissions units as well as initial operation to determine compliance with conditions of this permit. Title V operation permits are required for regular operation of the permitted emissions units. The permittees shall apply for Title V operation permits at least 90 days prior to expiration of this permit, but no later than 180 days after completing the required work and commencing operation. To apply for a Title V operation permit, the applicants shall submit the appropriate application forms, compliance test results, and such additional information as the Department may by law require. The application shall be submitted to the appropriate Permitting Authority with copies to each Compliance Authority. [Rules 62-4.030, 62-4.050 and Chapter 62-213, F.A.C.]
10. Existing Air Permits: This permit adds to or modifies certain specific conditions contained in previously issued air construction Permit No. 0890444-001-AC (PSD-FL-438) and 0890004-050-AC. Unless otherwise specified, the terms and conditions specified herein shall be in addition to existing permit conditions contained within previously issued air construction permits. [Rules 62-4.070(1) & (3), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

A. Vent Gas Scrubber and Direct Contact Condenser (RPF EU-005)

This section of the permit addresses the following emissions unit.

EU No.	Emission Unit Description
-005	<p>Vent Gas Scrubber and Direct Contact Condenser</p> <p>The vent gas scrubber (wet scrubber) controls emissions from numerous vents from the cooking acid plant, the red stock washers, the unwashed stock tank, the spent sulfite liquor storage tanks, the spent sulfite liquor washer area, the digesters (6), and the blow pits. The scrubber is a packed bed containing 10 feet of packing consisting of two packed sections. The lower section is designed for sulfur dioxide emissions control via gas absorption using alkaline scrubbing media (soda ash, sodium hydroxide, etc.). The spent scrubber media is bled first to other closed sources to make maximum use of the alkali to remove sulfur dioxide, and then to sewer via closed piping to number 1 Pump Station. The sulfur dioxide concentration in the stack is continuously measured with a CEMS.</p> <p>The upper packed section of the vent gas scrubber is designed to condense methanol from the gas stream by direct contact with fresh well water, i.e. the Direct Contact Condenser. This is a once through process. The condensed methanol held in the water is sent to the biological effluent treatment system for treatment in order to comply with the requirements of 40 CFR 63 Subpart S.</p> <p>As part of this project, a new molten sulfur burner is being added to the cooking acid plant in addition to the two existing sulfur burners. The design capacity of the new burner is 38.6 tons per day and emissions will be vented to the existing vent gas scrubber.</p> <p>The scrubber stack is 180 feet high and 5.0 feet in diameter, with an exit temperature of approximately 80°F and a new maximum design flow rate of 32,504 actual cubic feet per minute.</p>

EQUIPMENT

1. New SO₂ Gas Cooling Train and Cooling Tower: The permittee shall install, operate, and maintain a new SO₂ gas cooling train to cool the gases generated by the new sulfur burner prior to the existing Vent Gas Scrubber. The cooling train will consist of a direct contact spray quench tower, a new cross-flow splash-type cooling tower, ductwork, and ancillary equipment. It is also clarified that the permittee is authorized to install a new air compressor, air heater, combustion air fan, and an auxiliary propane burner for startup, to support the new sulfur burner. [Design; Application No. 0890444-002-AC (PSD-FL-438) & 0890004-056-AC; and, Rule 62-4.070(3), F.A.C.]
2. New Ammonia Absorption Tower (Phase 2): Prior to startup of Phase 2 of the project, the permittee shall install a new ammonia absorption tower to the acid fortification process, consisting of a larger diameter tower and new packing with sufficient surface area to ensure no net increase in SO₂ emissions from the combined facility. The permittee is authorized to install ancillary equipment, such as new pumps and a new SO₂ gas fan to accommodate the operation of the new ammonia tower. The new ammonia absorption tower will be approximately 69 feet tall and 10 feet in diameter with two packed beds and shall be equipped with a chevron mist eliminator. [Design; Application No. 0890444-002-AC (PSD-FL-438) & 0890004-056-AC; and, Rule 62-4.070(3), F.A.C.]

MONITORING REQUIREMENTS

15. Existing SO₂ CEMS: The permittee shall calibrate, operate, and maintain the existing SO₂ CEMS on the Vent Gas Scrubber stack in accordance with 40 CFR 60, Appendix B, Performance Specification 2 and Appendix F. Annual RATA tests shall be conducted and submitted to the Compliance Authority within 45 days of testing. [Rules 62-204.800, 62-297.310(8)(a)5.b., and 62-4.070(3), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

B. New SO₂ Cooling Tower (RPF EU 028)

This section of the permit addresses the following emissions unit.

ID No.	Emission Unit Description
-028	Cross-flow Splash-Type Cooling Tower with Drift Eliminators

PERFORMANCE RESTRICTIONS

1. New SO₂ Cooling Tower. The permittee is authorized to install a new cross-flow splash-type cooling tower set to support the operation of the SO₂ gas cooling train for the Vent Gas Scrubber emissions unit (see Subsection A). The cooling tower shall be equipped with drift/mist eliminators to achieve a design drift rate of 0.001%. PM/PM₁₀/PM_{2.5} emissions shall be minimized by regular operation and maintenance practices in accordance with the manufacturer’s recommendations and good air pollution control practices for minimizing emissions. [Rule 62-212.400(BACT), F.A.C.; and, Application No. 0890444-002-AC (PSD-FL-438) & 0890004-056-AC]
2. Records. The permittee shall keep records of the design drift rate, as well as regular and preventative maintenance activities. The permittee shall make the records available for inspection by the Department upon request. [Rules 62-4.160(7)(a) and 62-4.070(3), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

CD. Lignosulfonate Products Plant – Common Conditions (LTF)

This section of the permit addresses the following emissions units.

Facility ID No. 0890444	
EU No.	Description
-001	Two (2) 30 MMBtu/hr Spray Dryers controlled by High-Efficiency Cyclones and Venturi Scrubbers
-002	Two (2) Ion Exchange Columns controlled by Wet Scrubbers
-003	Three (3) Product Storage Silos <u>with Surge Hoppers</u>
-004	Packaging Operation with Three (3) Packaging Bins, <u>Two (2) Packaging Lines, and Two (2) Bag Dump Stations</u>
-005	<u>Induced Draft Cross-flow Film-Type</u> Cooling Tower Set with High-Efficiency Mist Eliminators
-006	Plant-wide Fugitive Emissions

EQUIPMENT

3. Additional Equipment. In each phase, permittee is authorized to install the following equipment:
- a. Buffer tank, reactors, condensers with condenser vents, flash vessels, and other ancillary equipment. The buffer tank will vent to a condenser. Reactors #1, #2 and #3 will vent to a separator and condenser, and will also have pressure relief control valves. The flash tank and reactor following the flash tank will be atmospheric devices;
 - b. Dry material handling equipment including sizing, packaging, conventional conveyors, pneumatic conveyors, and screw conveyors. All conveyors shall be located inside a building or completely enclosed to prevent fugitive particulate matter emissions;
 - c. The finished powder products will be transferred pneumatically from the spray dryer separators to the product storage silos and then to the packaging bins. Bin vent filters shall be installed on each packaging bin, surge hopper, bag dump station, and baghouses on each product storage silo and packaging line to control particulate matter during pneumatic transfer and loading;
 - d. Miscellaneous tanks, storage vessels, buffering tanks, mixers, and product tanks; and,
 - e. An induced draft cross-flow film-type cooling tower set designed with high-efficiency mist eliminators.
- [Permit No. 0890444-001-AC (PSD-FL-438) & 0890004-050-AC; and, Application No. 0890444-002-AC (PSD-FL-438A) & 0890004-056-AC]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

EE. Product Storage Silos and Packaging Bins (LTF EU 003 and 004)

This section of the permit addresses the following emissions units.

ID No.	Emission Unit Description
-003	Three (3) Product Storage Silos <u>with Surge Hoppers</u>
-004	Packaging Operation with Three (3) Packaging Bins, <u>Two (2) Packaging Lines, and Two (2) Bag Dump Stations</u>

POLLUTION CONTROL EQUIPMENT

- Pollution Control Devices.** The permittee shall install and operate high-efficiency baghouses or bin vent filters on the product storage silos, surge hoppers, packaging bins, and packaging operations to include the bag dump stations and packaging lines, for the control of particulate matter emissions from the material handling and packaging operations. The PM control devices shall be designed and operated to achieve an outlet grain loading of 0.002 grains per dry standard cubic foot (PTFE-laminated filter bags or equivalent). Filter bags shall only be replaced with bags that meet the design dust outlet specification. Records of the equipment manufacturer’s emissions performance guarantee(s) shall be maintained on-site at all times and made available for inspection upon request. [Design; Rule 62-212.400(BACT), F.A.C.; Permit No. 0890444-001-AC (PSD-FL-438) & 0890004-050-AC; and, Application No. 0890444-002-AC (PSD-FL-438A) & 0890004-056-AC]

EMISSIONS STANDARDS

- Emissions Standards:**
 - PM/PM₁₀/PM_{2.5} Emissions.* When required in accordance with Rule 62-297.310(8)(c), *Special Compliance Tests*, F.A.C., as determined by reference method stack test, PM/PM₁₀/PM_{2.5} emissions from the product storage silos and packaging operations shall be operated not to exceed the applicable emissions rates in pounds per hour:

EU No.	Emission Point	Design Flow Rate (acfm)	Design Grain Loading (gr/dscf)	Emissions Rate (lb/hr)	Basis
003	Product Storage Silo No. 1	5,000 <u>5,121</u>	0.002	0.076 <u>0.073</u>	BACT
	Product Storage Silo No. 2	5,000 <u>5,121</u>	0.002	0.076 <u>0.073</u>	
	Product Storage Silo No. 3	5,000 <u>5,121</u>	0.002	0.076 <u>0.073</u>	
	<u>Surge Hopper No. 1</u>	<u>135</u>	<u>0.002</u>	<u>0.0021</u>	
	<u>Surge Hopper No. 2</u>	<u>135</u>	<u>0.002</u>	<u>0.0021</u>	
	<u>Surge Hopper No. 3</u>	<u>135</u>	<u>0.002</u>	<u>0.0021</u>	
004	Packaging Bin No. 1	782 <u>930</u>	0.002	0.013 <u>0.015</u>	BACT
	Packaging Bin No. 2	782 <u>930</u>	0.002	0.013 <u>0.015</u>	
	Packaging Bin No. 3	782 <u>930</u>	0.002	0.013 <u>0.015</u>	
	<u>Bag Dump Station No. 1</u>	<u>825</u>	<u>0.002</u>	<u>0.0131</u>	
	<u>Bag Dump Station No. 2</u>	<u>825</u>	<u>0.002</u>	<u>0.0131</u>	
	<u>Packaging Line No. 1</u>	<u>1,621</u>	<u>0.002</u>	<u>0.026</u>	
	<u>Packaging Line No. 2</u>	<u>2,942</u>	<u>0.002</u>	<u>0.047</u>	

[Rules 62-212.400(BACT) & 62-297.310(8)(c), F.A.C.; Permit No. 0890444-001-AC (PSD-FL-438) & 0890004-050-AC; and, Application No. 0890444-002-AC (PSD-FL-438A) & 0890004-056-AC]

- Visible Emissions.* As determined by EPA Method 9, visible emissions from the product storage silos and packaging operations shall not exceed 5% opacity. [Rules 62-212.400(BACT) and 62-297.620(4),

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

EE. Product Storage Silos and Packaging Bins (LTF EU 003 and 004)

F.A.C.; Permit No. 0890444-001-AC (PSD-FL-438) & 0890004-050-AC; and, Application No. 0890444-002-AC (PSD-FL-438A) & 0890004-056-AC]

TESTING REQUIREMENTS

5. **Initial Compliance Tests:** The product storage silos and packaging operations, to include all emission points listed in Specific Condition D.4.a., shall be tested to demonstrate initial compliance with the emissions standards for visible emissions. The initial tests shall be conducted within 60 days after achieving permitted capacity, but not later than 180 days after initial operation of the units. [Rules 62-4.070(3), 62-297.620(4) and 62-297.310(8)(b)1., F.A.C.]
6. **Annual Compliance Tests:** During each calendar year (January 1st to December 31st), the product storage silos and packaging operations, to include all emission points listed in Specific Condition D.4.a., shall be tested to demonstrate compliance with the emissions standards for visible emissions. [Rule 62-297.310(8)(a)3., 62-297.620(4), and 62-297.310(8)(a)5.d., F.A.C.]

MONITORING REQUIREMENTS

10. **Baghouse Pressure Monitoring:** The permittee shall monitor and record the following performance indicators:
 - a. **Differential Pressure:** The permittee shall install, calibrate, maintain, and operate a differential pressure gauge on each baghouse that can be used to determine the pressure drop across the baghouse. The pressure drop shall be observed and recorded daily during normal operations. The observer shall also note the presence or absence of visible emissions from the baghouse vents, and indicate any corrective actions taken. The gauges shall be certified by the manufacturer to be accurate to within a gauge pressure of ± 10 percent of the true value. [Rules 62-297.310(6) and 62-4.070(3), F.A.C.]
 - b. **Visible Emissions:** The permittee shall note the presence or absence of visible emissions (instantaneous checks during operations) from the baghouse vents daily, or install, operate, and maintain continuous bag leak detector systems on each baghouse. The bag leak detection systems must be certified by the manufacturer to be capable of detecting PM emissions at concentrations of 0.00044 grains per actual cubic foot or less. The bag leak detector shall be adjusted at least quarterly for seasonal effects, if necessary, based on the manufacturer's recommendations. If a particular bag leak detector is not operational during a given day, an instantaneous visible emissions check shall be conducted for that day, and the results recorded in the operations log.
{Permitting note: the visible emissions checks do not require a certified VE reader and need not be performed according to reference methods, but only requires an instantaneous observation.}
 - c. The permittee shall record all excursions and any corrective actions taken. An excursion is defined as a differential pressure out of range, the presence of visible emissions, or an alarm triggered by a bag leak detection system. The permittee shall initiate investigation of any bag leak detection system alarm within one hour. Corrective actions shall be taken as expeditiously as practicable. Each excursion shall be followed by inspection, corrective action, recordkeeping, and reporting in a semiannual report.
[Rules 62-212.400(BACT), 62-297.310(6), and 62-4.070(3), F.A.C.]

RECORDS AND REPORTS

15. **Operational Data:** The permittee shall maintain the following records:
 - a. Monthly and 12-month rolling records of the amount of material processed in the product storage silos and packaging operations (tons per year);
 - b. Monthly and 12-month rolling records of the hours of operation of each emissions unit;
 - c. Records of the daily baghouse pressure drops and instantaneous visible emissions checks or baghouse leak detection system records required under **Specific Condition D.10.**; and,
 - d. Records of replacement of filter bags as well as regular and preventative maintenance activities.
[Rule 62-4.070(3), F.A.C.]

SECTION 3. EMISSIONS UNIT SPECIFIC CONDITIONS

FG. ~~Induced Draft~~ ~~Cross-flow~~ Cooling Tower with High Efficiency Mist Eliminators (LTF EU 005)

This section of the permit addresses the following emissions units.

ID No.	Emission Unit Description
-005	Induced Draft Cross-flow <u>Film-Type</u> Cooling Tower Set with High-Efficiency Mist Eliminators

PERFORMANCE RESTRICTIONS

1. Cooling Tower. The permittee is authorized to install an ~~an induced draft~~ cross-flow film-type cooling tower set to support the operation of the lignosulfonate products plant. The cooling tower shall be an induced draft design with high-efficiency drift/mist eliminators with a design drift rate of 0.0006%. PM/PM₁₀/PM_{2.5} emissions shall be minimized by regular operation and maintenance practices in accordance with the manufacturer’s recommendations and good air pollution control practices for minimizing emissions. [Rule 62-212.400(BACT), F.A.C. and Application No. 0890444-002-AC (PSD-FL-438A) and 0890004-056-AC]