Florida Department of Environmental Protection

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Sent by Electronic Mail – Received Receipt Requested

PERMITTEE:

Buckeye Florida Limited Partnership
One Buckeye Drive
Perry, Florida 32056

Authorized Representative:
Mr. Howard A. Drew

Air Permit Number: 1230001-033-AC
Date of Issue:
Expiration Date:

Draft

Project: Clean Energy Pathways, Inc. BFO-1
Biofuel Test Burn in No. 4 Lime Kiln

PROJECT AND LOCATION

This final air construction permit authorizes a temporary short-term trial to fire BFO-1 biofuel supplied by Clean Energy Pathways, Inc. in the No. 4 Lime Kiln. This authorization is only for a temporary short-term trial to determine actual air emissions when firing BFO-1 as a fuel for further consideration as an alternative fuel. BFO-1 biofuel is formulated from 99.9 percent fatty free acid oil (processed soybean and/or fish oils) and 0.1percent by weight of petroleum diesel. The facility is located in Taylor County at US 19, south of SR 30, southeast of Perry, Florida 32348. The UTM coordinates are Zone 17; 256.7 km East; and, 3328.7 km North. As noted in the Final Determination provided with this final permit, only minor changes and clarifications were made to the draft permit.

This final permit is organized by the following sections.

Section 1. General Information
Section 2. Administrative Requirements
Section 3. Emissions Unit Specific Conditions
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.

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 permit supplements all other air construction and operation permits for the subject emissions unit and does not alter any requirements from such previously issued air permits.

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 Jacksonville, Florida

Draft

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Christopher L. Kirts, P.E.
Air Program Administrator

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this Final Air Permit package (including the Final Determination and Final Permit) 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 Draft to the persons listed below.

Mr. Howard A. Drew, Buckeye Florida, Limited Partnership [Email: howard_drew@bkitech.com]
Dave Weeden, Buckeye Florida, Limited Partnership [Email: dave_weeden@bkitech.com]

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.

Draft

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(Clerk) (Date)

FACILITY DESCRIPTION

Buckeye Florida, Limited Partnership operates an existing dissolving grade Kraft process pulp mill in Perry, Florida. In the Kraft process, the digesting liquor (white liquor) is a solution of sodium hydroxide and sodium sulfide that is mixed with wood chips and cooked under pressure. The spent liquor, known as weak black liquor, is concentrated and sodium sulfate is added to make up for chemical losses. The black liquor solids (BLS) are burned in the recovery furnaces to produce a smelt of sodium carbonate and sodium sulfide. The smelt is dissolved in water to form green liquor to which quicklime (calcium oxide) is added to convert the sodium carbonate back to sodium hydroxide, which reconstitutes the cooking liquor. The spent lime cake (calcium carbonate) is recalcined in a rotary lime kiln to produce quicklime, which is used to convert the green liquor to cooking liquor. Steam and energy needs at the plant are met by: combination boilers, which burn bark/wood, tall oil, supplemental residual oil; power boilers, which burn residual oil, tall oil, natural gas; and recovery boilers, which burn BLS, tall oil, and supplemental residual oil.

REGULATED EMISSIONS UNITS AFFECTED BY PROJECT:

Emission Unit	Description
024	No. 4 Lime Kiln

PROPOSED PROJECT

This project will involve the test burning of BFO-1 biofuel supplied by Clean Energy Pathways, Inc. in the No. 4 Lime Kiln at the Foley mill. The purpose of these tests is to assess potential air emissions when firing the BFO-1 biofuel in the lime kiln. BFO-1 biofuel is formulated from 99.9 percent fatty free acid oil (processed soybean and/or fish oils) and 0.1percent by weight of petroleum diesel.

During the test, the Foley Mill will bring onsite a temporary tank/tanker truck for the BFO-1 biofuel. The mill will not require any physical changes to the No. 4 Lime Kiln in order to fire this biofuel.

FACILITY REGULATORY CLASSIFICATION

- The facility is a major source of hazardous air pollutants (HAP).
- The facility has no units subject to the acid rain provisions of the Clean Air Act.
- The facility is a Title V major source of air pollution in accordance with Chapter 213, F.A.C.
- The facility is a major stationary source in accordance with Rule 62-212.400(PSD), F.A.C.
- This facility is a major source of air pollutants, other than HAPs.
- This facility has one or more emissions units subject to NSPS (40CFR 60).
- This facility has one or more emissions units subject to NESHAP (40 CFR 61 or Part 63)

SECTION 1. GENERAL INFORMATION

1. Permitting & Compliance Authority: The permitting and compliance authority for this project is the Northeast District Office, Florida Department of Environmental Protection (Department). The mailing address is 7825 Baymeadows Way, Suite B-200, Jacksonville, Florida 32256-7590. The telephone number is (904) 256-1556. All documents related to applications for permits to operate an emissions unit shall be submitted to this District office. All documents related to compliance activities such as reports, tests, and notifications shall be submitted to this District Office.

2. Appendices: The following Appendices are attached as part of this permit:

   a. Appendix A. Citation Formats and Glossary of Common Terms;
   b. Appendix B. General Conditions;
   c. Appendix C. Common Conditions; and
   d. Appendix D. Common Testing Requirements.

3. 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.

4. Permit Expiration: For good cause, the permittee may request that this air construction permit be extended. Such a request shall be submitted to the Department's Northeast District Office at least sixty (60) days prior to the expiration of this permit.

   [Rules 62-4.070(4), 62-4.080 and 62-210.300(1), F.A.C.

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: The permittee shall notify the Compliance Authority upon commencement of construction. No new emissions unit shall be constructed and no existing emissions unit shall be 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 Permit Required. Unless exempt from permitting pursuant to Rule 62-210.300(3)(a) or (b), F.A.C., or Rule 62-4.040, F.A.C., an air construction permit shall be obtained by the owner or operator of any proposed new, reconstructed, or modified facility or emissions unit, or any new pollution control equipment prior to the beginning of construction, reconstruction pursuant to CFR 60.15 or 63.2, or modification of the facility or emissions unit or addition of the air pollution control equipment; or to establish a PAL; in accordance with all applicable provisions of Chapter 62-210, F.A.C., Chapter 62-212, F.A.C., and Chapter 62-4, F.A.C.

   [Rule 62-210.300(1)(a), F.A.C.]

8. Source Obligation: 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.

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

9. The ID Number and Project Name for this source shall be used on all correspondences.

10. Application for Title V Permit: This project authorizes a temporary trial burn to collect operational and emissions data to evaluate the feasibility of firing BFO-1 Biofuel as an alternate fuel in the No. 4 Lime Kiln at the Foley Mill. Based on the data collected, the permittee may seek permanent authorization to fire BFO-1 biofuel and/or co-fire BFO-1 biofuel with previously authorized fuels at the No. 4 Lime Kiln. Permanent authorization will require submittal of an application for an air construction permit as well a revision to the Title V air operation permit.

    [Rules 62-4.030, 62-4.050, 62-4.220 and Chapter 62-213, F.A.C.]

This section of the permit addresses the following emissions units:

ID	Emission Unit Description
024	**No. 4 Lime Kiln:** This unit recalcines the spent lime cake (calcium carbonate) to produce the quicklime (calcium oxide), which is used to convert the green liquor to cooking liquor. This emissions unit has a maximum heat input rate of 210 MMBtu/hr and has a maximum processing rate of 31.25 tons of material per hour. The kiln fires natural gas, No. 6 fuel oil with a maximum sulfur content of 2.5% by weight, Tall Oil which may include up to a maximum of 1.0 gpm of virgin ULSD (maximum sulfur content of 0.0015 percent by weight), and facility-generated on-specification used oil (to be blended with the No. 6 fuel oil). Particulate matter emissions are controlled by a weighted wire electrode, electrostatic precipitator manufactured by F.L. Smidth and originally installed in 1986. Collected particulate is recycled back to the feed-end of the lime kiln and re-processed in the kiln. TRS and opacity are continuously monitored and recorded. At permitted capacity, the exhaust gas flow rate is 86,500 dscfm at 10% oxygen with an exit temperature of 460° F. Exhaust gases exit a stack that is 7.3 feet in diameter and 125 feet tall. This emissions unit also includes two Water Treatment Lime Storage Bins.

APPLICABILITY OF PREVIOUS PERMITS

1. Existing Permits and Regulations: The conditions of this permit temporarily supplements all other previously issued air construction and operation permits for this emissions unit. These conditions are in addition to all other applicable permit conditions and regulatory requirements. The Permittee shall continue to comply with the conditions of those permits, which include restrictions and standards regarding capacities, production, operation, fuels, emissions, monitoring, recordkeeping, reporting, operation of air pollution control devices, and the like. The Permittee shall also comply with the applicable Rules of 62-4, 62-210, 62-212, 62-213, 62-296, and 62-297, F.A.C.

   [Rule 62-4.070, F.A.C.]

TEMPORARY PROJECT ACTIVITIES

2. BFO-1 Biofuel Handling and Burning: In accordance with the conditions of this permit, the Permittee is authorized to receive and to burn BFO-1 biofuel supplied by Clean Energy Pathways, Inc. in the No. 4 Lime Kiln for the purposes of a test burn.

   a. This permit does not authorize any physical modifications of the No. 4 Lime Kiln in order to accommodate the BFO-1 biofuel nor does it authorize the addition of any equipment to burn the BFO-1 biofuel other than a temporary storage vessel/ tanker truck for the BFO-1 Biofuel.

   b. For each shipment of BFO-1 biofuel, the Permittee shall obtain from the supplier the analytical results for a representative sample taken from the shipment for: the heating value, density, moisture content, total halogen content, ash content, sulfur content, chlorine content, total nitrogen content, and the specifications stated in Condition 8. The analysis shall be conducted using either approved EPA, DEP, or ASTM test methods. Prior to the initial delivery of BFO-1 biofuel, the Permittee shall obtain a copy of the analytical results. For subsequent deliveries, the Permittee shall obtain the analytical results as soon as they are available from the supplier.

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c. At least one day prior to the initial delivery, the permittee shall provide written notification to the Northeast District of: the expected date of delivery, the approximate amount of BFO-1 biofuel to be delivered, the corresponding analytical results and a preliminary schedule for conducting the trial burn including the anticipated date of initial firing of the BFO-1 biofuel. For subsequent deliveries and within two days of each delivery, the Permittee shall provide written notification to the Compliance Authority of the date of delivery and the amount of BFO-1 biofuel delivered. As soon as the analytical results of the subsequent deliveries are available from the supplier, the Permittee shall provide copies to the Northeast District. Notifications may be made by letter, facsimile or e-mail. The Permittee shall also maintain a written log of this information.

d. Upon first firing BFO-1 biofuel in the No. 4 Lime Kiln, the Permittee shall complete the trial burn within 6 calendar months. If unforeseen problems delay the trial burn and the permit has not expired, the mill may submit a written request to the Northeast District for additional time in which to complete the trial burn.

e. The firing of the BFO-1 biofuel shall not result in any increase in the heat input rate of the No. 4 Lime Kiln. The maximum heat input rate while firing this fuel shall not exceed 204 MMBtu per hour based on a fuel heating value of 129 MMBtu per 1,000 gallons of BFO-1. This is equivalent to a total maximum of 1,580 gallons of BFO-1 per hour.

f. The Permittee is authorized to fire up to 100-percent BFO-1 biofuel in the No. 4 Lime Kiln during the temporary trial burn period.

g. The No. 4 Lime Kiln's fuel oil surge tank will be used to isolate the biofuel from the No. 6 fuel oil and control the burning of the fuels.

[Rule 62-4.070, F.A.C.; Application No. 1230001-033-AC]

BFO-1 BIOFUEL MONITORING

4. BFO-1 Biofuel Monitoring: The permittee shall install, operate, and maintain equipment to continuously monitor and record the flow/firing rate of the BFO-1 Biofuel in the No. 4 Lime Kiln. If the Permittee installs and uses flow totalizers, the totalized flow shall be recorded at least once per operating day (24 hour period). All monitoring and recording equipment shall be installed and properly functioning prior to the firing of the BFO-1 biofuel. Existing equipment may satisfy this requirement.

   [Rules 62-4.070(3) and 62-4.160(15), F.A.C.]

5. Accuracy of Equipment: Equipment or instruments used to directly or indirectly determine process variables, including devices such as belt scales, weight hoppers, flow meters, and tank scales, shall be calibrated and adjusted to indicate the true value of the parameter being measured with sufficient accuracy to allow the applicable process variable to be determined within 10% of its true value.

   [Rule 62-297.310(5)(b), F.A.C.]

BFO-1 BIOFUEL LIMITATIONS

7. Maximum Sulfur Content of BFO-1: The maximum sulfur content of the BFO-1 Biofuel shall not exceed 0.05 percent by weight.

   [Rule 62-4.070, F.A.C.; Application No. 1230001-033-AC]

8. For each shipment of BFO-1 biofuel, the BFO-1 biofuel shall be incompliance with the following specifications:

BFO-1 Biofuel Maximum Specifications	
Constituent/Property	**Allowable Level**
Arsenic	5 ppm maximum
Cadmium	2 ppm maximum
Chromium	10 ppm maximum
Lead	100 ppm maximum
Total Halogens	1,000 ppm maximum
Flash Point	100°F minimum
PCBs	<2 ppm maximum

   If any analysis result indicates any constituent concentration above those stated in the table above, the BFO-1 biofuel shall be deemed not suitable for combustion. The Permittee shall not fire the BFO-1biofuel as a fuel and immediately cease deliveries of it from the given supplier. In addition, the permittee shall provide the Department immediate written notification, including a copy of the analysis results, the quantity of BFO-1 biofuel fired if any, and the proposed means of its disposal.

   [Rule 62-4.070, F.A.C.]

CONTINUOUS MONITORING REQUIREMENTS

9. Parametric Data: During the trial burn, the Permittee shall continuously monitor and record at least the following: hourly fuel firing rates of each fuel, heat input rates from firing each fuel (MMBtu/hour), production rate (tons/hour), total flue gas flow rate, flue gas oxygen content and the control device applicable parameter values, i.e. ESP total power.

   [Rule 62-4.070, F.A.C.]

10. Continuous Opacity Monitoring System (COMS): The permittee shall continue to use the existing COMS at the No. 4 Lime Kiln to determine the opacity while firing BFO-1 biofuel.

    [Rule 62-4.070, F.A.C.]

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EMISSIONS TESTING REQUIREMENTS

11. Carbon Monoxide (CO): Within 30 days of first firing the BFO-1 biofuel in the No. 4 Lime Kiln, the Permittee shall conduct a CO emissions test in accordance with EPA Method 10 at the No. 4 Lime Kiln while firing 100-percent BFO-1 biofuel. The CO test shall consist of 3 separate test runs that are for the time period specified in the applicable test method, while operating the No. 4 Lime Kiln at permitted capacity.

    [Rule 62-4.070, F.A.C.]

12. Particulate Matter (PM): Within 30 days of first firing the BFO-1 biofuel in the No. 4 Lime Kiln, the Permittee shall conduct a PM emissions test in accordance with EPA Method 5 (or other test method if authorized by previous air permit), at the No. 4 Lime Kiln while firing 100-percent BFO-1 biofuel. The PM test shall consist of 3 separate test runs that are for the time period specified in the applicable test method, while operating the No. 4 Lime Kiln at permitted capacity.

    [Rule 62-4.070, F.A.C.]

13. Nitrogen Oxides (NOx): Within 30 days of first firing the BFO-1 biofuel in the No. 4 Lime Kiln, the Permittee shall conduct a NOx emissions test in accordance with EPA Method 7 (or other test method if authorized by previous air permit), at the No. 4 Lime Kiln while firing 100-percent BFO-1 biofuel. The NOx test shall consist of 3 separate test runs that are for the time period specified in the applicable test method, while operating the No. 4 Lime Kiln at permitted capacity.

    [Rule 62-4.070, F.A.C.]

14. Other Test Methods: EPA Methods 1 – 4 shall be used as necessary to support the other test methods.

    [Rule 62-4.070(3), F.A.C.]

15. Emissions Testing Schedule: All emission tests shall be completed within the 30-day trial burn period, unless additional time is requested and approved as specified in Condition 2.d.

    [Rule 62-4.070, F.A.C.]

NOTIFICATIONS, RECORDS, AND REPORTS

16. a. BFO-1 Biofuel: For each delivery of BFO-1 Biofuel, the Permittee shall retain at least the following records:

    1. Analyses as required by the conditions of this permit;
    2. Quantity of BFO-1 biofuel supplied.
    3. Quantity of BFO-1 biofuel fired in the No. 4 Lime Kiln.

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Specific Condition No. 16.b. Continued:

b. Test Burn: During the test burn, the Permittee shall record at least the following:

1. The number of times a trail test burn was stopped, if applicable, and the reason for stopping the test burn.
2. The identification of any problems associated with handling or the firing of the BFO-1 biofuel, the expected causes, and solutions.

[Rule 62-4.070, F.A.C.]

17. Test Notification: The Permittee shall notify the Compliance Authority in writing at least 15 days prior to conducting tests required by this permit. Tests shall be conducted in accordance with the applicable requirements specified in Appendix D (Common Testing Requirements) of this permit.

    [Rule 62-297.310(7)(a)9., F.A.C.]

18. Test Reports: The permittee shall prepare and submit reports for all required tests in accordance with the requirements specified in Appendix D (Common Testing Requirements) of this permit. For each test run, the report shall also include the minimum Parametric Data required in Condition No. 9.

    [Rules 62-4.070, 62-297.310(8), F.A.C.]

19. Test Burn Summary Report: Within 90 days of completing the temporary trial burn and conducting the last emissions test, the Permittee shall submit a report to the Northeast District summarizing the following: the analytical results; any problems encountered with handling and/or firing the BFO-1 biofuel; the emissions monitoring data; emissions test results; emissions unit operating data; control device parametric monitoring results; fuel firing rates; heat input rates from the firing of each fuel; production rates; total flue gas flow rate; flue gas oxygen content; any problems that occurred during the trial and the expected cause of such problems; and a conclusion as to the feasibility and practicality of firing BFO-1 biofuel as an alternative fuel.

    [Rule 62-4.070(3), F.A.C.]

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