TECHNICAL EVALUATION
&
PRELIMINARY DETERMINATION

APPLICANT

RockTenn CP, LLC
North 8th Street
Fernandina Beach, FL 32034

Fernandina Beach Kraft Pulp Mill
ARMS Facility ID No. 0890003
North 8th Street
Fernandina Beach, Florida

PROJECT

Project No. 0890003-034-AC
Application for Air Construction Permit
No. 4 Lime Kiln/No. 7 Power Boiler Natural Gas Project

COUNTY

Nassau, Florida

PERMITTING AUTHORITY

Florida Department of Environmental Protection
Northeast District Office
Air Resources Section
7625 Baymeadows Way, Suite 200B
Jacksonville, Florida 32256-7590

March 21, 2012

1. GENERAL PROJECT INFORMATION

Air Pollution Regulations

Projects with the potential to emit air pollution are subject to the applicable environmental laws specified in Section 403 of the Florida Statutes (F.S.). The statutes authorize the Department of Environmental Protection (Department) to establish regulations regarding air quality as part of the Florida Administrative Code (F.A.C.), which includes the following chapters: 62-4 (Permits); 62-204 (Air Pollution Control – General Provisions); 62-210 (Stationary Sources – General Requirements); 62-212 (Stationary Sources – Preconstruction Review); 62-213 (Operation Permits for Major Sources of Air Pollution); 62-296 (Stationary Sources - Emission Standards); and 62-297 (Stationary Sources – Emissions Monitoring). Specifically, air construction permits are required pursuant to Rules 62-4, 62-210 and 62-212, F.A.C.

In addition, the U. S. Environmental Protection Agency (EPA) establishes air quality regulations in Title 40 of the Code of Federal Regulations (CFR). Part 60 specifies New Source Performance Standards (NSPS) for numerous industrial activities. Part 61 specifies National Emission Standards for Hazardous Air Pollutants (NESHAP) based on specific pollutants. Part 63 specifies NESHAP based on the Maximum Achievable Control Technology (MACT) for numerous industrial categories. The Department adopts these federal regulations on a quarterly basis in Rule 62-204.800, F.A.C.

Facility Description and Location

The applicant operates an existing Kraft Pulp Mill (SIC No. 2611) in Fernandina Beach at 8th Street North in Nassau County, Florida 32304. The UTM coordinates are zone 17, 456.2 km East, and 3394.2 km North. This site is an area that is in attainment (or designated as unclassifiable) for all pollutants subject to a National Ambient Air Quality Standard (NAAQA).

This facility is a fully integrated Kraft linerboard mill that consists of major activities areas such as: wood yard, pulp mill, recycle plant, chemical recovery, power house and paper mill. A corrugated containers plant is also located at the site.

Existing Process Description

The No. 4 lime kiln is rated at maximum rate of 630 TPD, maximum lime production rate – corresponding to a process input rate of 46.87 tons (lime mud-$CaCO_3$)/hr. Up to 100% used oil, any mixture of used oil and No. 6 fuel oil, and 100% No. 6 fuel oil may be as the fuel for the No. 4 Lime Kiln. The No. 7 Power boiler is rated at a maximum heat input of 1021 MMBtu per hour firing coal and/or fuel oil (No. 6 or No. 2 fuel oil). Up to 10 tons per hour of bark ash from the No. 5 Power Boiler may also be fired in the No. 7 Power Boiler.

Facility Regulatory Categories

- The facility is a major source of hazardous air pollutants (HAP).
- The facility does not operate 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, F.A.C. for the Prevention of Significant Deterioration (PSD) of Air Quality.

Project Description

The project provides fuel flexibility to the facility by providing natural gas as an available fuel for the No. 4 Lime Kiln and the No. 7 Power Boiler. The No. 4 Lime Kiln will be capable of firing up to 100% used oil, any mixture of used oil and No. 6 fuel oil, 100% No. 6 fuel oil, 100% natural gas, or a mixture of natural gas and fuel oil (including used oil). In order to accomplish this operating scenario the applicant will require the replacement of the existing oil fired burner with a dual fuel burner (natural gas and/or fuel oil). The No. 7 Power Boiler will have the flexibility to fire natural gas in lieu of fuel oil or in addition to fuel oil. In order to accomplish this operating scenario the applicant will require installation of twelve natural gas igniters near each of the current coal igniters in the boiler. The project is not expected to have a significant impact on the emission rates of any pollutant.

The project is not intended to increase the production capacity of the No. 4 Lime Kiln or the No. 7 Power Boiler. At the No. 4 Lime Kiln it is expected that a slightly higher heat input per ton of CaO produced will be required while burning natural gas due to differences in flame characteristics and other operational differences. This increase is expected to be less than 20 MMBtu per hour. No change in maximum heat input is expected at the No. 7 Power Boiler. Pursuant to Rule 62-212.400, F.A.C., RockTenn CP, LLC provided information to show that the project will not exceed the significant emissions rates that require preconstruction review for the Prevention of Significant Deterioration (PSD) of Air Quality. In accordance with Rule 62-212.300, F.A.C., the permit requires RockTenn CP, LLC to provide reports summarizing the actual emissions for each year during the 5-year period following completion of the project. This is to ensure that the project remains minor with respect to PSD preconstruction review.

Proposed Work

No. 4 Lime Kiln: The permittee will install a dual fuel burner (natural gas and fuel oil capable) to accommodate the firing of natural gas and/or fuel oil (including used oil).

No. 7 Power Boiler: The permittee will install twelve natural gas igniters, wind boxes and combustion air fans near each of the existing twelve coal injectors in the boiler.

Appurtenances necessary to combust natural gas at each unit will also be constructed which may include but are not limited to natural gas lines, headers, fuel management devices, and monitors.

Processing Schedule

Upon permit issuance:

- Emission unit preparation work which can only be performed when the EUs are shut down will be performed during the mill shutdown in the Spring of 2012. Additional work will be performed at a later date when natural gas is expected to be available during the Fall of 2012.

- No. 4 Lime Kiln: Within 180 days after initially firing the new burner system on natural gas (dual fuel burner) the permittee shall conduct performance testing for particulate matter, total reduced sulfur compounds, and opacity with the test methods and procedures outlined in the Title V Air Operation permit. Testing shall be conducted while using natural gas as the sole fuel. Each test run shall be conducted at a minimum of 90% of the maximum rated heat input to the lime kiln. Successful compliance testing and demonstration under this operating scenario shall satisfy the No. 4 Lime Kiln annual testing requirements (for the Federal Fiscal Year in which the testing is conducted) required by current Title V Air Operation Permit.
- No. 7 Power Boiler: The permittee shall conduct performance testing as follows:

  a. Within 180 days after initially firing the new natural gas burner system, performance testing for oxides of nitrogen and carbon monoxide[2] shall be conducted with the test methods and procedures outlined in the Title V Air Operation permit and below.

  b. Within 18 months after initially firing the new natural gas burner system, performance testing for particulate matter, sulfur dioxide[1], and opacity shall be conducted with the test methods and procedures outlined in the Title V Air Operation permit and below.

  Testing required in conditions 6.a. and 6.b. above shall be conducted while co-firing natural gas and coal. Natural gas shall provide from 160 MMBtu/hr to 240 MMBtu/hr of the total heat input to the boiler during each test run. Each test run shall be conducted at a minimum of 90% of the maximum rated heat input to the boiler.

  Each pollutant test successfully completed in accordance with this condition may substitute for the annual fiscal year test required by the Title V Air Operation permit for the fiscal year in which the test was completed.

[1] *Compliance shall be based on the total heat input from all fossil fuels burned, including gaseous fuels.*

[2] *Pursuant to Condition F.19. of Title V Operation Permit No. 0890003-028-AV, the carbon monoxide compliance test results shall also be used to verify the minimum and maximum set points for the flue gas oxygen meter. The carbon monoxide compliance testing shall be conducted during the Nitrogen Oxides emission compliance testing.*

[40 CFR 60.43(c); Title V Operation Permit No. 0890003-028-AV]

2. PSD APPLICABILITY

General PSD Applicability

The Department regulates major stationary sources of air pollution in accordance with Florida's PSD preconstruction review program as defined in Rule 62-212.400, F.A.C. A PSD applicability review is required in areas currently in attainment with the state and federal AAQS or areas otherwise designated as "unclassifiable". A facility is considered a major stationary source with respect to PSD if it emits or has the potential to emit: 5 tons per year or more of lead; 250 tons per year or more of any regulated air pollutant; or 100 tons per year or more of any regulated air pollutant and the facility belongs to one of the 28 PSD-major facility categories (fossil fuel-fired steam electric plants of more than 250 million British thermal units per hour heat input, coal cleaning plants (with thermal dryers), Kraft pulp mills, portland cement plants, primary zinc smelters, iron and steel mill plants, primary aluminum ore reduction plants, primary copper smelters, municipal incinerators capable of charging more than 250 tons of refuse per day, hydrofluoric, sulfuric, and nitric acid plants, petroleum refineries,

lime plants, phosphate rock processing plants, coke oven batteries, sulfur recovery plants, carbon black plants (furnace process), primary lead smelters, fuel conversion plants, sintering plants, secondary metal production plants, chemical process plants, fossil fuel boilers (or combinations thereof) totaling more than 250 million British thermal units per hour heat input, petroleum storage and transfer units with a total storage capacity exceeding 300,000 barrels, taconite ore processing plants, glass fiber processing plants, and charcoal production plants.). Projects at existing or new major stationary sources are subject to PSD preconstruction review. In addition, proposed projects at existing minor sources are subject to PSD preconstruction review if potential emissions *from the proposed project* will exceed the PSD major stationary source thresholds.

Once a project becomes subject to PSD preconstruction review, each PSD pollutant is reviewed for PSD applicability based on emissions thresholds known as the "significant emission rates" defined in Rule 62-210.200, F.A.C. for the following pollutants: carbon monoxide (CO); nitrogen oxides (NO_X); sulfur dioxide (SO_2); particulate matter (PM); particulate matter with a mean particle diameter of 10 microns or less (PM_{10}); volatile organic compounds (VOC); lead (Pb); Fluorides (F); sulfuric acid mist (SAM); hydrogen sulfide (H_2S); total reduced sulfur (TRS), including H_2S; reduced sulfur compounds, including H_2S; municipal waste combustor organics measured as total tetra- through octa-chlorinated dibenzo-p-dioxins and dibenzofurans; municipal waste combustor metals measured as particulate matter; municipal waste combustor acid gases measured as SO_2 and hydrogen chloride (HCl); municipal solid waste landfills emissions measured as nonmethane organic compounds (NMOC); and mercury (Hg). Pollutant emissions from the project exceeding these rates are considered "significant" and the applicant must employ the Best Available Control Technology (BACT) to minimize emissions of each such pollutant and evaluate the air quality impacts. Although a facility or project may be *major* with respect to PSD for only one regulated pollutant, it may be required to install BACT controls for several "significant" regulated pollutants.

PSD Applicability for Project

The following table summarizes the expected changes in actual emissions from the No. 4 Lime Kiln/No. 7 Power Boiler natural gas project based on the No. 4 Lime Kiln application received February 13, 2012, additional information received February 20, 2012, the No. 7 Power Boiler application received February 28, 2012 and updated information provided on March 15 and 16, 2012.

Table A. Annual Emissions Summary and PSD Applicability

Pollutant	No. 4 Lime Kiln/No. 7 Power Boiler Annual Emissions Summary, Tons/Year					
	Baseline Actual Emissions	Projected Actual Emissions	Projected Increases	PSD Significant Emissions Rate	Demand Growth Excludable	Subject to PSD?
SO_2	3411.54	3433.72	22.18	40	376.07	**No**
NO_X	1579.46	1596.97	17.51	40	185.96	No
CO	31.52	48.64	17.12	100	4.50	No
PM	119.8	125.87	6.07	25	20.55	No
PM_{10}	82.20	86.37	4.17	15	14.04	No
$PM_{2.5}$	48.58	51.46	2.88	10	9.02	No
VOC	9.96	13.43	3.47	40	1.46	No

Pollutant	No. 4 Lime Kiln/No. 7 Power Boiler Annual Emissions Summary, Tons/Year					
	Baseline Actual Emissions	Projected Actual Emissions	Projected Increases	PSD Significant Emissions Rate	Demand Growth Excludable	Subject to PSD?
SAM	151.72	152.53	0.81	7	16.54	No
Pb	5.84E-02	5.87E-02	3.0E-04	0.6	6.39E-03	No
Hg	1.15E-02	1.16E-02	1.0E-04	0.1	1.25E-03	No
TRS	3.22	3.33	0.11	10	0.60	No
CO_2	800,605	822,607	22,001[a]	-	110,755	-
CH_4	86.11	91.22	5.11	-	10.07	-
N_2O	12.49	12.52	0.03	-	1.31	-
CO_2e	806,285	828,404	22118[a]	75000	111,372	No
GHG	800,704	822, 710	22,006	0	110,766	-
Fluorides	20.42	20.46	0.04	3	2.11	No

[a] GHG emission increase must be greater than or equal to zero TPY **and** CO_2e emissions increase must be greater than or equal to 75,000 TPY.

Notes: No. 4 Lime Kiln emissions calculations provided in the application received February 13, 2012 and additional information received February 20, 2012. No. 7 Power Boiler emissions calculations provided in the application received February 28, 2012. Additional information provided on both EUs on March 15 and 16, 2012.

3. FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) REVIEW

Brief Discussion of Emissions and PSD Applicability

The applicant applied individually and separately to the Department for air construction permits for the project to modify two emission units at the facility to burn natural gas. The Department, upon review, has determined that the two applications should be combined for PSD review since there is only one project (i.e., modifying two emission units to burn natural gas). The Department therefore has reviewed the applications as one project.

PSD regulations require that for projects involving multiple emission units only one consecutive 24 month period may be used for all the emissions units being modified, however, a different 24 month period may be used for each PSD pollutant. Upon review, the Department determined that the applicant initially used the 2009/2010 24 month period for the baseline data for all PSD pollutants from the No. 4 Lime Kiln and the 2003/2004 24 month period for the baseline data for all PSD pollutants from the No. 7 Power Boiler. On March 16, 2012, the applicant revised their application submittals so that the 2003/2004 24 month period was used for all PSD pollutants except for PM, PM_{10}, $PM_{2.5}$, and TRS. The applicant used the 2009/2010 24 month period for these PSD pollutants. All data used was provided by the applicant in the above referenced documents.

Based on the projections, supporting information provided by the applicant, conclusions presented by the applicant, and the emissions summary presented in Table A the Department agrees that the project does not trigger PSD preconstruction review. All projected increases of PSD pollutants are below the

PSD Significant Emission Rate thresholds presented in Chapter 62-210, F.A.C. Based upon this conclusion no further PSD review is required.

Therefore, the project requires a minor air construction permit to authorize the proposed fuel firing options. Pursuant to Rule 62-212.300(1)(e), F.A.C., the applicant shall provide reports in summarizing actual emissions of all pollutants listed in Table A above computed in accordance with the requirements of Rule 62-210.370, F.A.C. for each year during the 5-year period following completion of the project.

NSPS Applicability

A project for an existing unit may trigger the federal New Source Performance Standards (NSPS) in two ways.

A. The project is considered a modification when the project results in an increase in the hourly mass emissions rate of an NSPS-regulated pollutant. Since this project will not change the performance or increase the capacity (operational rate) of the No. 4 Lime Kiln or No. 7 Power Boiler, the hourly mass emissions rates are not projected to increase.

- The No. 7 Power Boiler is currently subject to 40 CFR 60, Subpart D--STANDARDS OF PERFORMANCE FOR FOSSIL-FUEL-FIRED STEAM GENERATORS FOR WHICH CONSTRUCTION IS COMMENCED AFTER AUGUST 17, 1971 adopted and incorporated by reference in Rule 62-204.800, F.A.C. Since the unit will be combusting an additional fossil fuel (natural gas) the oxides of nitrogen standard for natural gas combustion in subpart D becomes applicable to the No. 7 Power Boiler in accordance with the requirements in 40 CFR 60, Subpart A (i.e., upon commencement of the initial performance test combusting natural gas).
- The No.4 Lime Kiln is currently subject to 40 CFR 60, Subpart BB--STANDARDS OF PERFORMANCE FOR KRAFT PULP MILLS adopted and incorporated by reference in Rule 62-204.800, F.A.C. Since the unit will be combusting an additional fossil fuel (natural gas) the particulate matter standard for natural gas combustion in subpart BB becomes applicable to the No.4 Lime Kiln in accordance with the requirements in 40 CFR 60, Subpart A (i.e., upon commencement of the initial performance test combusting natural gas).

B. Pursuant to 40 CFR 60.15, a project is considered reconstruction when the fixed capital costs of the replacement components exceed 50% of the fixed capital costs for a comparable new replacement unit. Since the authorized changes involve new fuel firing options there is a limited capital cost expenditure associated with the change. The expenditure is insignificant compared to the cost of a new lime kiln and power boiler. Therefore the project will not be considered reconstruction.

NESHAP Applicability

The No. 4 Lime Kiln is currently regulated under 40 CFR 63 - Subpart S, NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR THE PULP AND PAPER INDUSTRY adopted and incorporated by reference in Rule 62-204.800, F.A.C. and is also regulated under 40 CFR 63- Subpart MM - NATIONAL EMISSION STANDARDS FOR HAZARDOUS AIR POLLUTANTS FOR CHEMICAL RECOVERY COMBUSTION SOURCES AT KRAFT, SODA,

SULFITE, AND STAND-ALONE SEMICHEMICAL PULP MILLS adopted and incorporated by reference in Rule 62-204.800, F.A.C. This project will not change the applicability status of the NESHAP to the No. 4 Lime Kiln.

4. PRELIMINARY DETERMINATION

The Department makes a preliminary determination that the proposed project will comply with all applicable state and federal air pollution regulations as conditioned by the draft permit. This determination is based on a technical review of the complete application, reasonable assurances provided by the applicant, and the conditions specified in the draft permit. No air quality modeling analysis is required because the project does not result in a significant increase in emissions. Jerry Woosley is the project specialist responsible for reviewing the application and drafting the permit. Additional details of this analysis may be obtained by contacting the project specialist at the Florida Department of Environmental Protection, Northeast District Office, Air Resources Section, 7525 Baymeadows Way, Suite 200B, Jacksonville, FL 32256-7590, Phone: (904) 256-1700.