STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

ANGUS S. KING, JR.
GOVERNOR

EDWARD O. SULLIVAN
COMMISSIONER

BOISE CASCADE CORPORATION	)	DEPARTMENTAL
OXFORD COUNTY	)	FINDINGS OF FACT AND ORDER
RUMFORD, MAINE	)	AIR EMISSION LICENSE
A-214-71-X-A	)	AMENDMENT #11

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

I. REGISTRATION

A. Introduction

~~1. Boise Cascade Corporation (Boise) was issued Air Emission License A-214-71-E-A/R for its facility in Rumford, Maine on July 18, 1989. The Air Emission License was subsequently amended on August 31, 1990, November 27, 1990, April 30, 1991, April 9, 1992, February 12, 1993, December 22, 1993, on April 4 1994, on August 12, 1994, on March 30, 1995, and on May 15, 1995.~~

2. Boise submitted an application which was received and accepted by the Department on May 31, 1995. The application requested an air emission license amendment to address Reasonably Available Control Technology (RACT) for Volatile Organic Compounds (VOC), as required by Chapter 134 of the Maine Air Regulations.

B. Application Classification

The application for Boise is considered to be an amendment to incorporate the VOC RACT requirements as required by Chapter 134 of the Maine Air Regulations.

~~II. BEST PRACTICAL TREATMENT~~

~~A. Introduction~~

~~Boise is in an attainment area for all U.S. EPA designated criteria air pollutants, except for ozone which is determined to be unclassified due to incomplete data. Maine is currently part of the Ozone Transport Region (OTR), and thus, the entire State of Maine is subject to the nonattainment requirements for ozone.~~

STA
STATE HOUSE STATION 17
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
OFFICE LOCATED AT: RAY BUILDING, HOSPITAL STREET

PORTLAND
312 CANCO ROAD
PORTLAND, ME 04103
(207) 822-6300 FAX: (207) 822-6303

BANGOR
106 HOGAN ROAD
BANGOR, ME 04401
(207) 941-4570 FAX: (207) 941-4584

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, ME 04769
(207) 764-0477 FAX: (207) 764-1507

~~Chapter 134 of the Maine Air Regulations requires that every source who has the potential to emit quantities of VOC equal to or greater than 40 tons per year apply RACT to their applicable VOC emissions.~~

B. RACT for VOC Emissions

1. Boise operates the following sources which are eligible to achieve compliance with VOC RACT pursuant to Chapter 134, Option (D) of Section 3(A), as described below:

   a. Bleach Plant (consisting of Bleaching Line A & B)
   b. Waste Water Treatment Plant
   c. Pulp Stock Washer Systems and Pulp Liquor Storage Tanks
   d. Digester System, Multiple Effect Evaporator System, Smelt Tank, and Lime Kiln

   Bleach Plant

   Boise is required, pursuant to Chapter 122, to collect emissions from the Bleach Plant and have the chlorine and chlorine dioxide emissions controlled by the Bleach Plant Scrubber System. Total Boise Bleach Plant chlorine and chlorine dioxide emissions after control by the wet scrubber systems are each limited to 3.0 lb/hr. As a result, some of the VOC emissions from the Bleach Plant are also collected and controlled by Bleach Plant Scrubber System. In addition, Boise has eliminated the use of sodium hypochlorite as a primary bleaching agent.

   The control of emissions from the Bleach Plant by the Bleach Plant Scrubber System which complies with Chapter 122 for the control of chlorine and chlorine dioxide emissions and the discontinued use of sodium hypochlorite as a primary bleaching stage is therefore determined to be meeting VOC RACT. The Department has determined that additional VOC controls for the Bleach Plant are not feasible at this time.

   Waste Water Treatment Facility

   Boise is required by Federal regulation to comply with their National Pollution Discharge Elimination System (NPDES) permit. By complying with their NPDES permit, VOC emissions from Boise's Waste Water Treatment Facility are controlled and thus is determined to be meeting VOC RACT.

Pulp Stock Washer Systems and Pulp Liquor Storage Tanks

The Paper Industry Information Office performed a VOC RACT analysis on various VOC sources from a representative paper mill in Maine. From that analysis it was determined that the control of VOCs from the pulping area (which contain pulp stock washers) and the chemical recovery area (which contain pulp liquor storage tanks) would have a $17,402/ton and $29,089/ton cost effectiveness, respectively. Based on the economic impact, the control of VOCs from these sources is therefore rejected as RACT. VOC emissions from the Pulp Stock Washer Systems and Pulp Liquor Storage Tanks as currently configured are determined to be meeting VOC RACT and the Department has determined that additional VOC controls are not feasible at this time.

Digester System and the Multiple Effect Evaporator System

Boise is required by Chapter 124 to collect emissions from the Digester System and the Multiple Effect Evaporator System. The total reduced sulfur (TRS) emissions from these sources are to be collected and incinerated within the Lime Kiln or within Power Boiler #3 or #5 as backup. As a result, VOC emissions from the Digester System and the Multiple Effect Evaporator System are also collected and incinerated within the Lime Kiln or within Power Boiler #3 or #5.

The control of VOC emissions from the Digester System and the Multiple Effect Evaporator System by the Lime Kiln or Power Boiler #3 or #5 which complies with Chapter 124 for the control of TRS emissions is therefore determined to be meeting VOC RACT. The Department has determined that additional VOC controls for the Digester System and the Multiple Effect Evaporator System are not feasible at this time.

Smelt Tank

Boise is required by Chapter 124 to meet a TRS emissions limit of 0.016 g/kg black liquor solids as H_2S (0.033 lb/ton black liquor solids as H_2S) from the smelt tank. In addition, Boise is required by a license condition to control particulate emissions from Smelt Tank C by a wet scrubber system. As a result, some of the VOC emissions from the Smelt Tank C are also controlled. The limit on TRS emissions pursuant to Chapter 124 and the control of particulate emissions by a wet scrubber system is therefore determined to be meeting VOC RACT. The Department has determined that additional VOC controls for the Smelt Tank C are not feasible at this time.

Lime Kiln

Boise is required to maintain adequate combustion conditions within the Lime Kiln to meet a TRS emissions limit of 8 ppmv corrected to 10% O_2 on a dry basis, as required by Chapter 124. As a result, VOC emissions from the Lime Kiln are also controlled by maintaining adequate combustion conditions.

The control of VOC emissions from the Lime Kiln by maintaining adequate combustion conditions which complies with Chapter 124 for the control of TRS emissions is therefore determined to be meeting VOC RACT. The Department has determined that additional VOC controls for the Lime Kiln are not feasible at this time.

2. Groundwood Operations

Boise has identified that their Groundwood operations are not exempt pursuant to Section 1(C) or eligible to achieve compliance through Section Option (D) of 3(A) and are therefore subject to an alternative VOC RACT analysis as specified by Section 3(A)(3) of Chapter 134.

VOC emissions such as methanol, terpenes, pinenes, acetone, etc. are released from Groundwood Operations as the result of the heat that is generated by friction between the grinding stone and the pulpwood.

Since there is very little published VOC emission factor data from groundwood operations, emissions factors were developed by Boise based on VOC source tests conducted at other similar facilities. Boise has estimated the VOC emissions to be approximately 1.1 lb VOC/ADTP, which equates to 36 tons per year based on representative groundwood pulp production rates.

Combustion of the VOCs within Boise's existing boilers was not considered to be technically feasible due the length of the ductwork which would be needed in transporting the gases from the groundwood operations to the boilers. The distance between the groundwood mill and the boilers is approximately a quarter of a mile.

Boise evaluated various other capture and control technologies and made the following determinations:

a. Condensers
Condensers were found to be not technically feasible for the control of Groundwood Operations due to the very low VOC concentration that would be captured.

b. Adsorbers
Adsorption systems (including activated carbon, zeolite, and systems employing other media) were found to be not technically feasible due to the incompatibility of the adsorption media with the types of organic compounds expected to be found in the emission stream. In addition, the systems would have reduced capture efficiencies due to the high moisture content of the treated gas streams and the possibility of the VOCs being re-emitted during either desorption or during treatment of the desorbate at the wastewater treatment plant.

c. Absorbers
Absorber systems were found to be not technically feasible due to the fact that this technology is unproven for this type of application. In addition, there is no single absorption media available that is known to be capable of capturing all of the VOC species which are likely to be found in the Groundwood Operations. The capture efficiency of the system is also expected to be reduced as a result of VOCs being re-emitted during treatment of the adsorbate at the wastewater treatment plant.

d. Thermal Oxidizers
Boise has proposed that combustion of the VOCs within the Lime Kiln or power boilers is not technically feasible due to the air intake capacity limitations of these units and the physical distance between the groundwood mill and the combustion sources (approximately a quarter of a mile).

Catalytic oxidizers were determined to be not technically feasible due to the potential for damage to the catalyst bed via heat stress, fouling, and blinding, which would render such a system ineffective.

Boise has proposed that both recuperative and regenerative thermal oxidizers are not economically feasible for the following costs (10 - year life cycle):

recuperative thermal oxidizer - $18,000/ton of VOC reduction
regenerative thermal oxidizer - $40,000/ton of VOC reduction

Given that the VOC emissions are generated from the naturally occurring organic compounds in the wood, there are no pollution prevention options available to Boise for consideration.

Boise thereby concluded that there are no technically or economically feasible control options that are capable of reducing the VOC emissions from the Groundwood Operations and thus the current equipment and operations are currently receiving RACT.

Based on the above, the Bureau of Air Quality Control finds that all sources including the Groundwood Operations at the Boise facility are meeting RACT for VOC emissions.

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-214-71-X-A, subject to ~~the conditions found in Air Emission License A 214 71 E A/R, in the following amendments:~~

~~A 214 71 H A, A 214 71 I A, A 214 71 J M, A 214 71 N M, A 214 71 O A, A 214 71 Q M, A 214 71 R M, A 214 71 T M, A 214 71 V A, A 214 71 W M, and in~~ the following conditions:

(tt) Boise shall meet the following VOC RACT limits and requirements:

a. Boise shall not utilize, without a prior license revision, sodium hypochlorite as a primary bleaching agent in the Bleach Plant. Boise shall operate the Bleach Plant Scrubber System when the Bleach Plant is in operation.

b. Boise shall comply with the terms and conditions of their NPDES permit.

c. Boise shall collect and control emissions from the Digester System and the Multiple Effect Evaporator System for TRS control as required by Chapter 124.

d. Boise shall operate the Smelt Tank Scrubber when the Smelt Tank C is in operation. Boise shall meet a TRS emissions limit of 0.016 g/kg black liquor solids as H_2S (0.033 lb/ton black liquor solids as H_2S), as required by Chapter 124 from the Smelt Tank C.

e. Boise shall meet a TRS emissions limit of 8 ppmv corrected to 10% O_2 on a dry basis, as required by Chapter 124 from the Lime Kiln.

(uu) This amendment shall expire concurrently with Air Emission License A-214-71-E-A/R.

DONE AND DATED IN AUGUSTA, MAINE THIS 20th DAY OF December 1995.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: James P. Brooks for
EDWARD O. SULLIVAN, COMMISSIONER

PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application May 31, 1995
Date of application acceptance May 31, 1995

Date filed with the Board of Environmental Protection

FILED
DEC 21 1995
BOARD OF ENVIRONMENTAL PROT.
STATE OF MAINE

This Order prepared by Kim Hibbard, Bureau of Air Quality Control