

VERMONT AGENCY OF NATURAL RESOURCES
Department of Environmental Conservation
Air Pollution Control Division

**TECHNICAL ANALYSIS OF AN AIR CONTAMINANT SOURCE
FOR A PERMIT TO OPERATE**

**#OP-95-066
DEC# NS94-0008**

April 19, 2006

OWNER/OPERATOR: Putney Paper Company, Inc.
P.O. Box 226
Putney, VT 05346

SOURCE: Putney Paper Company, Inc.
U.S. Route 5 and Mill Street
Putney, VT 05346

RESPONSIBLE OFFICIAL: Mr. Paul Mallet, Vice President Operations

CONTACTS: Mr. Bruce Raymond, Environmental Manager
Putney Paper Company, Inc.
Tel: (802) 387-5571
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COUNTY: Windham

AREA DESIGNATION: Attainment for PM₁₀, SO₂, NO_x, CO, & Pb
Unclassified for O₃

UTM COORDINATES: 702¹⁰⁰ m E, 4760⁹⁰⁰ m N, Zone 18 - Boiler Room Stack

1.0 INTRODUCTION

1.1 Administrative Milestones

Table 1-1: Administrative Summary

Administrative Item	Result or Date
Date Application Received:	01/30/1996
Date Administratively Complete:	02/14/1996
Date & Location Receipt of Application Noticed:	02/15/1996 <i>The Brattleboro Reformer</i>
Date Technically Complete:	05/23/2001
Date Draft Decision:	06/21/2001 Approved
Date & Location Draft Decision/Comment Period Noticed:	06/21/2001 <i>The Brattleboro Reformer</i>
Date U.S. EPA and Affected States Notified of Draft Decision:	06/21/2001
Date & Location Public Meeting Noticed:	7/16/2001, <i>The Brattleboro Reformer</i>
Date & Location of Public Meeting:	8/6/2001, Putney, VT
Deadline for Public Comments:	10/15/2001
Written Response to Public Comments	1/23/2006
Classification of Source Under §5-401:	§5-401(6)(a)(ii) – Fossil fuel burning installation with aggregated heat input of 10 MMBTU/hr or greater.
Operating Permit Classification:	Title V Subject Source
New Source Review Designation of Facility:	Major Stationary Source
Facility SIC Code(s) and Description(s):	2621 (Paper Mills) 2676 (Sanitary Paper Products)

Future Allowable Air Contaminant Emissions (tons/year)*					
PM/PM ₁₀	SO ₂	NO _x	CO	VOCs	Total HAPs
55	361	84	6	26	<1

* PM/PM₁₀ - particulate matter, SO₂ - sulfur dioxide, NO_x - oxides of nitrogen, CO - carbon monoxide, VOCs - volatile organic compounds, HAPs - hazardous air pollutants as listed in §112 of the *Clean Air Act*.

1.2 Basis of Review

Putney Paper Company, Inc. (hereinafter "Putney Paper" and also referred to herein as "Owner/Operator") owns and operates a tissue paper manufacturing facility located off U.S. Route 5 and Mill Street in the town of Putney, Vermont (referred to herein as "Facility"). The operations performed by Putney Paper at the Facility are classified as a stationary source of

air contaminants under §5-401(6)(a)(ii) of the *Vermont Air Pollution Control Regulations* ("*Regulations*"). Additionally, pursuant to §5-101 of the *Regulations*, "stationary source" is defined as any structures, equipment, installations, or operations, or combination thereof, which emit or may emit any air contaminant, which is located on one or more contiguous or adjacent properties and which is owned or operated under common control. Based upon this definition, all of the equipment, operations, and structures at Facility are grouped together as one stationary air contaminant source.

This Facility was constructed prior to July 1, 1979, and has not undergone any modifications that required Agency of Natural Resources, Department of Environmental Conservation, Air Pollution Control Division (hereinafter "Agency") review and approval pursuant to Title 10 *Vermont Statutes Annotated* ("10 V.S.A.") §556 and §5-501 of the *Regulations*. Based upon information provided by Putney Paper, allowable emissions of all air contaminants from the Facility are estimated to be greater than ten (10) tons per year ("tpy"). Furthermore, allowable emissions of sulfur dioxide ("SO₂") exceed 100 tpy. Therefore, pursuant to §§5-1002, 5-1003, and 5-1005 of the *Regulations*, the Facility is classified as a "Title V Subject Source" and Putney Paper must obtain an Air Pollution Control Permit to Operate ("Permit to Operate") consistent with the requirements of Subchapter X of the *Regulations* and Title 40 *Code of Federal Regulations* ("40 CFR") Part 70.

2.0 FACILITY DESCRIPTION AND LOCATION

2.1 Description of Plant Layout and Surrounding Area

The Facility is located in the town of Putney, Vermont. The area surrounding the Facility is primarily mixed commercial and residential. The Facility is located within a mile of the Putney Central School. The Facility is located within 100 kilometers of the Lye Brook Wilderness area in Manchester, Vermont and greater than 100 kilometers from the Great Gulf and Dry River Wilderness areas in New Hampshire.

2.2 Explanation of Process

The operations performed at the Facility are described using the Standard Industrial Classification Codes - 2621 (Paper Mills) and 2627 (Sanitary Paper Products).

Putney Paper's Facility is a 100% recycled deink facility with a primary function of manufacturing tissue and other various grades of disposable papers. Within this primary function there exist five (5) individual processes: repulping, deinking and cleaning, formation, drying and wastewater treatment. The manufacturing facility operates twenty-four (24) hours per day, seven (7) days per week and produces approximately 110 tons per day of finished paper products.

The repulping process is located in the Mill #2 area. This process employs pulpers to physically change various grades of wastepaper, using water and horsepower, to a pulp like material. The repulping process varies from ten (10) to fifty (50) minutes in duration. Historically the Facility has also added to the repulping process a 50% solution of sodium hydroxide ("NaOH"), a 12.5% solution of sodium hypochlorite ("NaOCl") and a non-ionic surfactant to the slurry. More recently the facility has been assessing their operation without the use of the sodium hypochlorite solution. The chemicals are added to aid in fiber

separation and preparing the fiber for the next phase. Steam heat is also employed in this step in the production, and is supplied by two (2) No. 6 oil-fired boilers located on-site.

The deinking and cleaning process is also located in the Mill #2 work space. Within this process the repulped fiber is highly diluted with water (1% fiber consistency). This process uses physical means such as screening, velocity, centrifugal forces, air injection and fine mesh fabrics to separate and remove any impurities and/or contaminants from the fiber. No process aids are introduced in this stage of the process. Occasionally, the equipment must be cleaned using a 30% solution of hydrogen chloride ("HCl") and/or sulfuric acid ("H₂SO₄").

Inhibitor chemicals are also used to eliminate the deposition of calcium, barium, and other crystal scale growth on the equipment.

The formation process consists of dispersing the pulp slurry at a 1% consistency onto a fabric, forming the pulp fibers through velocity and force and removing the water quickly to retain the physical form achieved. During this stage several process aids may be introduced depending upon the grade of product being manufactured. Materials used include: dyes for shade enhancement, polyglycols for foam control, wet strength resins to enhance the strength of the final product. Wet strength resins consist of hydrochloric acid ("HCl") and 1,3-dichloropropane. Low molecular weight polymers are applied to the forming fabrics to repel built up of sticky substances and thereby reduce the need for equipment cleanup. The formation process equipment is also periodically cleaned using refined pine terpene hydrocarbons and/or potassium hydroxide.

The final stage in the manufacturing process involves drying of the formed sheet. The formed sheet is passed through a dryer section which is enclosed by a hood. The drying stage is also served by steam produced by the two (2) oil-fired boilers. The temperature of the steam varies from 220 °F to 280 °F. Hot air and water vapors captured by the hood are released to the ambient air.

Steam is produced on-site by the two (2) No. 6 oil-fired boilers both manufactured by Cleaver Brooks. The boilers are identical and are served by a common breaching entering into a single stack.

The final stage of the process is the treatment of the water that has been used throughout the various manufacturing stages. This is accomplished through the use of both physical and biological waste water treatment systems.

2.3 Process Equipment and Stack Information

2.3.1 Description of Equipment

See Table 2-1: Equipment Information, in Appendix A of this Technical Analysis for a list of the more important emission points at the Facility. See Table 2-2 in Appendix A of this Technical Analysis for a listing of stack and vent parameters at the Facility.

2.3.2. Description of Compliance Monitoring Devices

No devices have been proposed to continuously monitor emissions produced at this Facility.

3.0 QUANTIFICATION OF EMISSIONS

Emissions must be calculated for the Facility in order to establish the regulatory review process for the operating permit portions and to determine applicability with various air pollution control requirements. These determinations are normally based upon allowable emissions. Allowable emission is defined as the emission rate calculated using the maximum rated capacity of the source and, if applicable, either: (a) the applicable emission standard contained in the *Regulations*, if any, or (b) the emission rate or design, operational or equipment standard specified in any order or agreement issued under the *Regulations* that is state and federally enforceable. In addition, §5-101 of the *Regulations* defines a "stationary source" as any structures, equipment, installations, or operations, or combination thereof, which emit or may emit any air contaminant, which is located on one or more contiguous or adjacent properties and which is owned or operated under common control. Based upon this definition, all of the equipment, operations, and structures at Facility are grouped together as one stationary air contaminant source.

Under the Agency's operating permit program, a source is classified as a "Title V Subject Source" and subject to federal review of the Permit to Operate if the Facility satisfies any one of the following criteria:

1. The source has allowable emissions of oxides of nitrogen ("NO_x"), sulfur dioxide ("SO₂"), carbon monoxide ("CO"), particulate matter ("PM/PM₁₀") or any other air contaminant, except volatile organic compounds ("VOCs"), of 100 tpy or greater;
2. The source has allowable emissions of VOCs of fifty (50) tpy or greater;
3. The source is subject to a federal emission standard pursuant to §111 of the *Clean Air Act* ("CAA") and promulgated in Title 40 *Code of Federal Regulations* ("40 CFR") Part 60 (Standards of Performance for New Stationary Sources);
4. The source is subject to a federal emission standard pursuant to §112 of the CAA and promulgated in 40 CFR Part 61 or 63 (National Emission Standards for Hazardous Air Pollutants); or
5. The source has allowable emissions of any one hazardous air pollutant ("HAP") regulated by the United States Environmental Protection Agency ("U.S. EPA") of ten (10) tpy or greater, or allowable emissions of a combination of HAPs regulated by the U.S. EPA of twenty-five (25) tpy or greater. The HAPs regulated by the U.S. EPA are identified in §112 of the CAA.

Note: Non-major stationary sources subject to a requirement in §111 or §112 of the CAA are currently not subject to the Title V operating permit program, since the U.S. EPA has deferred the requirement for a Title V operating permit for non-major sources pursuant to 40 CFR Part 70 §70.3(b)(1) and the fact that the U.S. EPA has not completed rulemaking establishing how the program should be structured for non-major sources.

3.1 Emission Related Information

Based upon its allowable emissions (see Table 3-1 below), the Facility is currently classified as a "Title V subject source" under the operating permit program requirements.

Since there is no existing permit for this Facility, allowable emissions have been estimated from all fuel burning equipment on-site and the paper machines. Allowable emissions have been estimated based upon continuous operation and maximum rated capacity for the equipment on-site. The facility has a maximum production capability of 110 tons per day.

Emissions produced from the combustion of fuels in the fuel burning equipment include: particulate matter ("PM/PM₁₀"), sulfur dioxide ("SO₂"), oxides of nitrogen ("NO_x"), carbon monoxide ("CO"), and volatile organic compounds ("VOCs"). VOCs from fuel burning equipment are also commonly referred to as non-methane total organic compounds ("NMTOCs"). The operation of the paper lines results in the discharge of VOCs resulting from the volatilization of materials added during the production of the paper products.

Individual constituents which makeup the categories of PM/PM₁₀ and VOCs may also be regulated by state and federal regulations, and must therefore be quantified. These individual constituents are referred to as hazardous air contaminants ("HACs") and/or hazardous air pollutants ("HAPs"). HAPs are defined as those chemicals listed in the §112(b) of the federal *Clean Air Act*, of which there are 188 chemicals. HACs are defined as those chemicals which are listed in Appendix B of the *Regulations*. All of the 188 HAPs are included as HACs.

3.2 Enforceable Operating Restrictions

The Facility does not presently operate under any enforceable limitations imposed by an Air Pollution Control Permit. However, emissions have been estimated based upon a production rate of 110 tons per day. Based upon 1994 usage rates (56 gallons per ton of product) in the application, fuel use in the boilers was projected to be less than 2,300,000 gallons per year at this maximum production rate. This value was utilized to estimate emissions from the boilers, rather than the potential usage rate derived by assuming full load operation for the entire year. This fuel use will be placed as a restriction within any Permit to Operate issued to Putney Paper.

3.3 Identification of Insignificant and Exempt Activities

Activities which qualify as an "insignificant activity" pursuant to §5-1002(h) of the *Regulations* need not be considered when determining the applicability of Subchapter X of the *Regulations* and must only be listed as such within the operating permit application. Additionally, guidance provided by the U.S. EPA (entitled "White Paper for Streamlined Development of Part 70 Permit Applications") lists activities which are considered as "trivial" sources of air contaminants, and may be presumptively omitted from operating permit applications.

Although not required for determining applicability with Subchapter X, quantifiable emissions from "insignificant activities" must be included for the purposes of establishing whether or not a source is subject to other air pollution control requirements, including, but not limited

to: reasonably available control technology, major source status, and Title V operating permit applicability.

In its application, Putney Paper has not identified any equipment or activities as insignificant or trivial. However, the Agency is aware of the following insignificant or trivial activities at the site:

1. Propane fueled forklifts;
2. Repair and maintenance shop activities;
3. Soldering and welding equipment;
4. Ventilating units used for human comfort;
5. Fuel oil storage tanks
6. Paper testing laboratory;
7. Diesel fire pump;
8. Propane electrical generator set (65 kW) manufactured by Onan;and
9. Intermittent building maintenance activities.

Emissions were not quantified from the above insignificant activities because they are considered negligible or not quantifiable. The exclusion of emissions produced by the insignificant and trivial activities does not alter the applicability status of the Facility under Subchapter X of the *Regulations*.

3.4 Allowable Emissions from Each Emission Point, Including Quantifiable Fugitive Emissions, As Necessary to Determine Applicable Requirements

Summarized in Table 3-1 below are the allowable emissions for Putney Paper. Table 1 in Appendix A of this Technical Analysis summarizes the derivation of the allowable emissions.

Table 3-1: Allowable Emissions for Putney Paper

Source	Air Contaminant Emissions, tons per year					
	PM/PM ₁₀	SO ₂	NO _x	CO	VOCs	HAPs
Boilers	55.2	361.1	83.7	5.8	0.3	0.18
Paper Production	---	---	---	---	25.7	<0.01
TOTAL	55.2	361.1	83.7	5.8	26.0	<0.2

4.0 APPLICABLE REQUIREMENTS

4.1 Citation and Description of all Applicable Requirements

§5-1006(e)(4) of the *Regulations* requires the owner/operator of a stationary air contaminant source to submit a complete application including, but not limited to a demonstration of compliance with all applicable air pollution control requirements. These requirements include state and federal regulations, and the requirements of any construction permit issued under 10 V.S.A. §556. Note that compliance relative to §5-261 and §5-1010 of the

Regulations will be discussed separately under paragraphs 5.0 and 6.0 below.

The compliance analyses and determinations in this technical analysis rely on data and representations provided by the Owner/Operator. Any statements and conclusions regarding the compliance status contained herein are not binding against the state of Vermont in any future legal or administrative proceedings.

Vermont Air Pollution Control Regulations

§5-201 and §5-202 - Open Burning Prohibited and Permissible Opening Burning.

Open burning of materials is regulated within these requirements.

Putney Paper has stated that it complies with these requirements.

The Agency will verify compliance with this standard in the future during any inspections of the Facility.

§5-211(1) - Prohibition of Visible Air Contaminants - Installations Constructed Prior to April 30, 1970. This standard applies one of the boilers manufactured by Cleaver Brooks (Boiler #1) which was installed in 1967, and specifies that visible air contaminant emissions may not exceed forty (40) % opacity for a period of six (6) minutes or more in any hour, and at no time may they exceed sixty (60) % opacity. Compliance with this standard is generally based upon the procedures contained in proposed Reference Method F-1 (51 *Federal Register*, page 31076, August 29, 1986).

Putney Paper has stated that it complies with the standard based on their equipment maintenance.

The Agency will verify compliance with this standard in the future during any inspections of the Facility.

§5-211(2) - Prohibition of Visible Air Contaminants - Installations Constructed Subsequent to April 30, 1970. This standard applies to the second boiler manufactured by Cleaver Brooks, the emergency generator set, and diesel fire pump. The limitations of this section specify that visible air contaminant emissions may not exceed twenty (20) % opacity for a period of six (6) minutes or more in any hour, and at no time may they exceed sixty (60) % opacity. Compliance with this standard is generally based upon the procedures contained in proposed Reference Method F-1 (51 *Federal Register*, page 31076, August 29, 1986).

Putney Paper has stated that it complies with the standard based on their equipment maintenance.

The Agency will verify compliance with this standard in the future during any inspections of the Facility.

§5-221(1)(a) - Prohibition of Potentially Polluting Materials in Fuel - Sulfur Limitation in Fuel. This subsection prohibits the use of any fuel, in stationary fuel burning equipment, with a sulfur content more than 2.0% by weight. This prohibition applies to all stationary fuel

burning equipment used on-site. Compliance with this standard is based on fuel analyses following the procedures prescribed by the American Society for Testing and Materials ("ASTM").

Putney Paper has stated that it complies with this standard based on their contract with fuel suppliers.

The continued use of these methods is sufficient to ensure compliance with this limitation in the future. As part of a compliance inspection, the Agency may require Putney Paper to perform oil sampling and analyses to confirm compliance with the 2.0% limit.

§5-231(1)(a) - Prohibition of Particulate Matter; Industrial Process Emissions. "No person shall discharge, cause, suffer, allow, or permit in any one hour from any stack whatsoever particulate matter in excess of the amount shown in Table 1 (of the *Regulations*). For purposes of this regulation the total process weight entering a process unit shall be used to determine the maximum allowable emissions of particulate matter which may pass through the stack associated with the process unit. When two or more process units exhaust through a common stack, the combined process weight of all of the process units, served by the common stack, shall be used to determine the allowable particulate matter emission rate." Compliance with this emission standard shall be determined in accordance with 40 *CFR* Part 60, Appendix A, Reference Method 5 or an alternative method approved in writing by the Agency.

Based on the application and information available to the Agency, the paper making operations are potentially subject to this regulation. However, given the nature of the paper making operations, it is unlikely that significant quantities of particulate matter may be generated from these operations and therefore it is expected that Putney Paper is in compliance with the particulate matter emission limit of this section.

The Agency will assess compliance with this emission standard in the future during any inspections of the Facility. The inspections will include confirmation of the proper operation and maintenance of the required air pollution control devices and visual observations of the stack exhaust.

§5-231(3)(a)(i) - Prohibition of PM; Combustion Contaminants. This standard applies to any fossil fuel burning equipment with a rated heat input of ten (10) MMBTU/hr or less. Specifically, this standard applies to the small stationary propane-fired emergency generator and the diesel fire pump identified in item 3.3 of this Technical Analysis. This standard specifies that PM emissions may not exceed 0.5 lbs/hr/MMBTU of heat input. Compliance with this standard is generally based on the use of Reference Method 5 (40 *CFR* Part 60, Appendix A).

Putney Paper has stated that it complies with the standard based on their maintenance of the fuel burning equipment.

The Agency will assess compliance with this standard in the future as follows: (1) Putney Paper will be required to properly operate and maintain its fuel burning equipment, (2) visual observations of each exhaust will be conducted during any Agency inspections of the Facility, and (3) if visible emissions are observed to be in excess of the limits specified in

§5-211 of the *Regulations*, the Agency may require the performance of a stack test to verify compliance with the above referenced PM standard or that other corrective measures be taken.

§5-231(3)(a)(ii) - Prohibition of PM; Combustion Contaminants. The PM standard in this section is applicable to the two No. 6 oil-fired boilers manufactured by Cleaver Brooks, since they each have a heat input rating greater than ten (10) MMBTU/hr but equal to or less than 250 MMBTU/hr. The PM standard is in units of lbs/hr/MMBTU and varies based upon the heat input of the unit. The actual value of the standard is derived based upon the following formula:

$$E_{PM} = 10^{[-0.47039(\log_{10} HI) + 0.16936]}$$

Where HI is the maximum rated heat input of the unit in MMBTU/hr; and
 E_{PM} is the emission rate in lbs/hr/MMBTU.

In accordance with the above formula, the following emission standards apply to the boilers operated by Putney Paper:

E_{PM} for Cleaver Brooks 25.1 MMBTU/hr Boiler #1 = 0.32 lbs/MMBTU and 8.0 lbs/hr
 E_{PM} for Cleaver Brooks 25.1 MMBTU/hr Boiler #2 = 0.32 lbs/MMBTU and 8.0 lbs/hr

Emissions of PM/PM₁₀ will result from the burning of fuel oil in the boilers at the Facility. The quantity of these emissions produced will depend upon the quality of the operation and maintenance of the fuel burning equipment, and the quality of the fuel being burned. In an effort to maintain compliance with this requirement the Agency will require Putney Paper to maintain and operate its equipment following the manufacturer's recommendations, and that Putney Paper perform annual maintenance tune-ups on its equipment. The Agency is also requiring the facility to routinely monitor the combustion efficiency of the boilers. The Agency will also assess visible emissions from the fuel burning equipment while on-site performing an inspection of the Facility, and if visible emissions are observed to be in excess of the limits specified in §5-211 of the *Regulations*, the Agency may require the performance of a stack test to verify compliance with the above referenced PM standards or that other corrective measures be taken.

Putney Paper has stated that it complies with the standard based on their emission estimates, emission performance data from Cleaver-Brooks, the boiler manufacturer, and the scheduled maintenance of the boilers.

Compliance with the standard in §5-231(3)(a)(ii) of the *Regulations* is generally based on the use of Reference Method 5 (40 CFR Part 60, Appendix A). Based on available emission data, emission performance data from the boiler manufacturer, and fuel properties, the estimated PM emissions from the boilers at the Facility are anticipated to be well below the regulatory limit thereby ensuring compliance with the standard. Therefore the Agency is not, at this time, requiring emissions testing for the boilers.

§5-231(4) - Prohibition of PM; Fugitive PM. This section requires the use of fugitive PM control equipment on all process operations and the application of reasonable precautions to prevent PM from becoming airborne during the handling, transportation, and storage of materials, or use of roads. This requirement applies to the entire Facility.

The Agency will require the use of reasonable precautions such as the application of water or surfactants to the haul roads and plant yard as necessary. Additionally, the Agency will assess compliance with this requirement during any inspections of the Facility, and will require the use of additional measures if found necessary during a compliance inspection.

§5-241(1) & (2) - Prohibition of Nuisance and Odor. This requirement applies to the entire Facility and prohibits the discharge of air contaminants that would be a nuisance to the public or be source of objectionable odors beyond the property-line of the Facility.

Putney Paper has stated that it complies with this requirement due to their observation of dust and odors from the operations.

The Agency will verify compliance with this requirement in the future during any inspections of the Facility. Additionally, the Agency investigates all complaints that it receives in order to determine whether or not there is a violation of this requirement.

§5-253.14 - Control of Volatile Organic Compounds - Solvent Metal Cleaning. This subsection applies to all cold cleaning operations, open-top vapor degreasing operations with an open area of 10.8 square feet or greater, and conveyORIZED degreasing operations with an air/solvent interface 21.5 square feet or greater. The cold cleaning standards require the units to be designed and equipped with a cover easily operated with one hand if the vapor pressure of the solvent exceeds 0.3 psi and an internal drainage area and additional control measures if the vapor pressure of the solvent exceeds 0.6 psi. All cold cleaning operations regardless of solvent vapor pressure must...

- "...(iv) Provide a permanent, legible, conspicuous label, summarizing the operating requirements;
- (v) Store waste solvent in covered containers;
- (vi) Close the cover whenever parts are not being handled in the cleaner;
- (vii) Drain the cleaned parts until dripping ceases;
- (viii) Supply a solvent spray, if used, that ensures a solid fluid stream at a pressure that does not exceed 10 pounds per square inch gauge;
- (ix) Degrease only materials that are neither porous nor absorbent; and
- (x) Cease operation of the unit upon the detection of any visible solvent leak until such solvent leak is repaired."

That applicant has stated that the cold cleaning unit and solvent used at the Facility has a vapor pressure less than the applicable levels requiring controls other than the requirements of parts (iv) through (x) above and that the unit is designed and operated in accordance with those provisions.

The Agency will assess compliance with this regulation in the future during any inspections of the Facility. The inspections will include confirmation of the solvent used and the proper design and operation of the unit.

§5-403 - Circumvention. "No Person shall build, erect, install or use any article, machine, equipment or other contrivances, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which otherwise would constitute a violation of these regulations."

Based on the application submittal and information available to the Agency, the Facility is currently in compliance with this regulation.

Subchapter VIII - Registration of Air Contaminant Source. This Subchapter requires the owner or operator of a stationary source register with the Agency if the source produces five (5) tons per year or greater of actual emissions during the preceding calendar year. The owner or operator of a source is required to submit information regarding their operations and pay a fee based upon the quantity of emissions they produce and the fuels that they use at the source.

Putney Paper has stated that it complies with this requirement based on the information they have submitted and the fees they have paid in preceding years.

The Agency will ensure compliance with this requirement in the future during any inspections of the Facility.

Federal Air Pollution Control Regulations

Section 111 of the Clean Air Act - New Source Performance Standards (NSPS)

No promulgated NSPS in 40 *CFR* Part 60 currently apply to Putney Paper.

Section 112 of the Clean Air Act - National Emission Standards for Hazardous Air Pollutants (NESHAPs)

No promulgated NESHAPs in 40 *CFR* Part 61 currently apply to Putney Paper.

The Pulp and Paper Production MACT in 40 *CFR* Part 63 Subpart S applies to pulp and paper facilities that are major HAP sources. Based upon its estimated emissions of HAPs regulated by the U.S. EPA, Putney Paper does not generate HAP emissions in excess of the federal thresholds for a major source. Consequently, the pulp and paperboard industry NESHAP does not apply to Putney Paper.

Furthermore, although exempt from §5-261 of the *Regulations*, the U.S. EPA has identified industrial-institutional-commercial boilers as a potential source that will be regulated by a "maximum achievable control technology" ("MACT") standard in the future. Emissions of federally regulated HAPs have been estimated for the boilers. Total HAP emissions from the Facility are estimated to be less than 0.2 tpy, and no individual HAP is emitted at a rate of 0.2 tpy or greater. Based upon maximum potential emissions of HAPs from the boilers, it does not appear that Putney Paper will be a major source of HAPs due to fuel combustion. The federal definition of major source of HAPs is any facility which generates 25 tpy or more of total HAPs or 10 tpy or more of any individual HAP. The federally regulated HAPs are

listed in §112(b) of the *Clean Air Act*.

40 CFR Part 64 - Compliance Assurance Monitoring. Pursuant to requirements concerning enhanced monitoring and compliance certification under the *Clean Air Act* ("CAA"), EPA promulgated new regulations and revised regulations on October 22, 1997. These new requirements implemented compliance assurance monitoring ("CAM") for major stationary sources of air pollution that are required to obtain operating permits under Title V of the CAA. Subject to certain exemptions, the new regulations require owners or operators of such sources to conduct monitoring that satisfies particular criteria established in the rule as a means of providing a reasonable assurance of compliance with applicable requirements. Compliance assurance monitoring is proposed to focus on emissions units that rely on pollution control equipment to achieve compliance with applicable standards. The regulations also provide procedures for coordinating these new requirements with the operating permit program regulations. As a result of comments received during the rule making process and the lengthy delay in the adoption of the CAM rule, U.S. EPA provided an extended implementation schedule for this rule. Facilities which had submitted a complete operating permit application prior to April 20, 1998, were not required to address CAM as part of their initial operating permit application, unless they proposed to make significant changes to the facility subsequent to this date and the facility operated "large" pollutant specific emission units ("PSEU"). A "large PSEU" is defined as a unit with post control emissions greater than or equal to the major source threshold.

§64.2 in 40 *CFR* Part 64 specifies that each PSEU at a facility that meets a three-part test is subject to the requirements for CAM. An emission unit must:

- (A) Be subject to an emission limitation or standard,
- (B) Use a control device to achieve compliance, and
- (C) Have **pre-control** emissions that exceed or are equivalent to the major source threshold in 40 *CFR* Part 70 (i.e., 10 tpy individual HAP, 25 tpy total HAPs, 50 tpy VOCs, or 100 tpy for any other air contaminant).

Note that the term "control device" means equipment, other than inherent process equipment, that is used to destroy or remove air pollutant(s) prior to discharge to the atmosphere. The term "control device" does not include passive methods such as lids or seals, use of low-polluting fuels or inherent process equipment provided for safety or material recovery. Additionally, the CAM rule provides some exemptions, such as an exemption for any affected facility subject to an NSPS or NESHAP promulgated after November 15, 1990.

Since Putney Paper does not meet the above three part test for its boilers and paper manufacturing operations, it is not subject to the requirements for CAM.

***Clean Air Act*, Title VI - Stratospheric Ozone Protection.** The requirements of Title VI of the CAA are implemented through regulations and standards within 40 *CFR* Part 82 Subparts A through F. Of these regulations, Putney Paper is subject to Subpart F - Recycling and Emissions Reduction. This requirement is applicable to any facility that owns services, maintains, repairs, and disposes of appliances containing ozone depleting substances. Putney Paper utilizes such refrigeration systems at the Facility. The Agency will incorporate the applicable requirements of 40 *CFR* Part 82 Subpart F into any permit

issued to Putney Paper.

4.2 Citation and Identification of Requirements For Which a Permit Shield Provision Has Been Requested

Pursuant to §5-1015(a)(11) of the *Regulations*, an owner/operator may request to be shielded from specific state or federal requirements which do not apply to the subject source. If the applicability of a regulatory requirement is unclear to the applicant, when appropriate, the Agency may grant a permit shield stating that the requirement does not apply to the source. Once a permit shield is granted, the Agency may not initiate any enforcement action against the Facility based upon a regulation or standard covered by the permit shield. The Agency would be required to amend the Permit to Operate and incorporate the applicable requirement prior to initiating any enforcement action for non-compliance with the applicable requirement. The Agency's permit shield determinations are based upon the information submitted by the owner/operator in its operating permit application. The resulting permit shield shall be effective only with respect to activities disclosed in the application.

It is the Agency's procedure to grant permit shields only for those requirements or standards which conceivably could apply to the Facility, and the Agency has made a determination that such requirement does not in fact apply. The Agency does not intend to grant permit shields for those requirements that clearly do not apply to the Facility. For example, an asphalt plant will not be granted a permit shield from a regulation applying to a dry cleaning operation. Additionally, the Agency and the U.S. EPA do not favor granting permit shields from broad requirements such as a section of the *Clean Air Act* or an entire Subpart of the federal regulations in 40 *CFR*. In the words of the U.S. EPA, "... the intended purpose of a negative applicability determination is to memorialize a decision where applicability of a certain regulation is somewhat unclear without extensive knowledge of the regulations and investigation of the relevant facts."

Putney Paper has not requested in its application to be shielded from any potentially applicable requirements. Therefore, the Agency has not proposed to grant any permit shields to Putney Paper in its Permit to Operate.

4.3 Description of Alternative Operating Scenarios and Related Applicable Requirements Not Previously Identified

Putney Paper has not identified any alternative operating scenarios as part of its application for a Permit to Operate.

4.4 Equivalency and Streamlining

On February 10, 1982 the Federal EPA approved, as part of Vermont's State Implementation Plan, §5-261 of the Vermont Air Pollution Control Regulations. As

approved, §5-261 required a “most stringent emission rate” (MSER), as defined for major stationary sources for the control of hazardous air contaminants. The current State of Vermont hazardous air contaminants regulation, as amended on January 20, 1993, employs both an action level and a “hazardous most stringent emission rate” (HMSE) for the control of hazardous air contaminants. Both MSER and HMSE are established on a case-by-case basis and are based on the lowest emission rate achieved in practice by such category of source.

The Agency has determined that the use of an action level in conjunction with a HMSE is at least as stringent as the MSER as adopted by the EPA.

5.0 HAZARDOUS AIR CONTAMINANTS

§5-261 of the *Regulations* addresses the release of hazardous air contaminants ("HACs") into the ambient air. Unless specifically exempted from §5-261, the owner or operator of a source must quantify its emissions of HACs regulated by this rule. Any source whose actual emission rate of a HAC exceeds its respective Action Level ("AL") is subject to the rule for that HAC, and the owner or operator of the source must then demonstrate that emissions of the HAC are minimized to the greatest extent practicable. This process is termed the "Hazardous Most Stringent Emission Rate" or HMSE. An air quality impact evaluation may also be required to further assess the ambient impacts that may be attributable to the source. The evaluation of the air quality impacts is performed using the Hazardous Ambient Air Standards ("HAAS") or Stationary Source Hazardous Air Impact Standard ("SSHAIS") contained in the *Regulations*.

Solid fuel burning equipment (not including incinerators) installed or constructed prior to January 1, 1993, and all fuel burning equipment which combusts virgin liquid or gaseous fuel is exempted from review pursuant to §5-261(1)(b)(ii) of the *Regulations*. Consequently, no fuel burning equipment used at the Facility qualified for review of HAC emissions under §5-261 of the *Regulations*.

The production of tissue paper does result in the discharge of some HACs at the Facility. These emissions have been quantified as part of the Agency's registration program. This data has been compared to the Action Levels in order to determine applicability to §5-261 of the *Regulations*.

Summarized in Table 5-1 are the estimated actual HAC emissions resulting from the paper production process, as well as a comparison to the respective AL. The data for dipropylene glycol methyl ether and 1,2-propanediol was obtained from the registration files for year 2004. The emission estimates assume 100% discharge to the ambient air of the ingredients included in the products used by Putney Paper that contain dipropylene glycol methyl ether and 1,2-propanediol.

The use of sodium hypochlorite as a process chemical in the papermaking process will produce chloroform as a by product. The emission rate of chloroform has been estimated based on a study by the National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI). The estimated emission rate shown in Table 5-1 is based on an annual usage of 500 gallons of a 12.5% solution of sodium hypochlorite.

If the Permittee proposes to continue the use of more than 500 gallons per year of sodium hypochlorite at the Facility, then the chloroform Action Level will be exceeded. In this event, within 180 days of the permit issuance, the Permittee shall conduct and submit to the Agency a Hazardous Most Stringent Emission Rate evaluation for the hazardous air contaminant chloroform resulting from the use of chlorinated oxidants/bleaching agents in their papermaking processes.

Table 5-1: Comparison of HAC Emission Rates to Action Levels

Constituent	CAS#	Emission Rate (lbs/8-hrs)	Action Level (lbs/8-hrs)
Dipropylene glycol methyl ether	34590-94-8	0.24	252
1,2-Propanediol	57-55-6	0.01	67
Chloroform	66-66-3	0.0033	0.0034

6.0 REASONABLY AVAILABLE CONTROL TECHNOLOGY

At this time, the Agency has not established a Reasonably Available Control Technology ("RACT") requirement applicable to this Facility under §5-1010 of the *Regulations*. Therefore, the Facility is currently in compliance with this requirement. The Agency will notify Putney Paper if any applicable RACT requirement applies to this Facility in the future. If such RACT should apply to the source in the future, the Agency will ensure that Putney Paper complies with such requirement at that time.

7.0 COMPLIANCE PLAN

7.1 Description of the Compliance Status for Each Applicable Requirement

See paragraph 4.0 above.

7.2 Compliance Schedule For Each Applicable Requirement for Which the Source is Not in Compliance

Not applicable to this Facility.

8.0 PUBLIC PARTICIPATION

The Facility operated by Putney Paper is classified as a "Title V Subject Source," and consequently, any application for a permit modification is subject to the public participation requirements of §5-1007 of the *Regulations*. As required by this section, the Agency published notice on February 15, 1996, in the *Brattleboro Reformer* that it had received an administratively complete application from Putney Paper. On May 23, 2001, the Agency determined it received sufficient information to declare the application technically complete.

On June 21, 2001, the Agency published a notice in the *Brattleboro Reformer* informing the public of the Agency's plans to issue a draft Air Pollution Control Permit to Operate. The

notice solicited comments on the draft decision and requests for an informational meeting on the matter. The public comment period was tentatively set to close on July 20, 2001. Requests for an informational meeting were received by the Agency. On August 6, 2001, a public meeting was held. The public comment period closed on October 15, 2001.

The U.S. EPA and affected states of New York, Massachusetts, and New Hampshire were notified of the draft decision on June 21, 2001.

9.0 CONCLUSIONS

- 9.1 Putney Paper has demonstrated that the Facility is in compliance with all applicable air pollution control requirements.

APPENDICES

Appendix A

Table 2-1: Equipment Information

Table 2-2: Stack Information

Table 2-1: Equipment Information

PARAMETER	BOILER #1	BOILER #2
Boiler Manufacturer:	Cleaver Brooks	Cleaver Brooks
Model No.:	655-600	655-600
Serial No.:	L-42356	L-36070
Purpose of boiler:	Steam production	Steam production
Boiler Type:	Fire tube	Fire tube
Boiler Maximum Rated Heat Input (MMBTU/hr):	25	25
Boiler Maximum Rated Heat Output: (horsepower):	600	600
Boiler Design Heat Transfer Efficiency:	76%	76%
Maximum & Design Operating Pressures (psig):	150/120	150/120
If purpose of the boiler is for steam production, indicate maximum and design steam production rate (lbs of steam/hr):	20,000/18,400	20,000/18,400
Fuel Type:	No. 6 Fuel Oil	No. 6 Fuel Oil
Assumed Fuel Higher Heating Values (MMBTU/gal):	0.15	0.15
Fuel Sulfur Content (% by weight):	2.0	2.0
Fuel Nitrogen Content (% by weight)	0.5	0.5
Number of Burners:	1	1
Burner Manufacturer:	Cleaver Brooks	Cleaver Brooks
Model No.:	655-600?	655-600
Serial No.:	L-42356?	L-42356?
Burner Type or Fuel Feeding Mechanism:	Air atomizing (low pressure) nozzle	Air atomizing (low pressure) nozzle
Maximum Fuel Firing Rate (gals/hr):	167.5	167.5
Forced draft or atmospheric boiler:	Forced draft	Forced draft
Combustion air blower capacity in actual cubic feet per minute:	7,097	7,097
% Excess Air	30-50%	30-50%
Oxygen Content of Flue Gas (% by volume, wet):	4.4%	4.4%
Carbon Dioxide (CO ₂) Content of Flue Gas (% by volume, wet):	13%	13%
Moisture Content of the Flue Gas (% by volume):	N/A	N/A
Will flue gas recirculation (FGR) be employed?	No	No
Will staged air combustion or staged fuel combustion be used?	No	No
Will the combustion air be preheated?	No	No
Will low-NOx burners be utilized?	No	No
Soot blowing frequency and duration:	2 times per day	2 times per day
Will the steam be utilized for electrical generation?	No	No

Table 2-2: Stack Information

PARAMETER	Stack #1
Stack height above base, feet:	60 (Stack Base Elev.: 364 ft above MSL)
Internal Diameter of Stack, feet:	3
Exit Flow Rate, acfm:	5,089
Exit Flow Rate, dscfm:	7,097?
Exhaust Temperature, °F:	394
Exhaust Moisture Content, % by vol.:	N/A
Exhaust Velocity, ft/sec:	12
Exhaust Static Pressure, inches of water:	N/A
UTM Coordinates, meters:	702100 m E, 4760900 m N, Zone 18
Lack or presence of rain cap:	No rain cap
Orientation of stack:	Vertical